Nebraska Symposium on Motivation 68

David DiLillo
Sarah J. Gervais
Dennis E. McChargue *Editors*

Alcohol and Sexual Violence

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The Nebraska Symposium on Motivation has been sponsored by the Department of Psychology at the University of Nebraska-Lincoln since 1953. Each year the Symposium invites leading scholars from around the world on a topic of current interest in psychology for a conference at the University followed by publication of an edited volume.

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Preface

We are pleased to offer this volume from the 68th Nebraska Symposium on Motivation. This year, the volume editors are Dennis E. McChargue, Sarah J. Gervais, and David DiLillo. In addition to overseeing the development of this book, the volume editors coordinated the 68th Symposium, including selecting and inviting the contributors. The 68th Symposium was held virtually for the first time in history. I would like to express my appreciation to Professors McChargue, Gervais, and DiLillo for overcoming challenges associated with COVID-19 and organizing a stimulating meeting and an excellent series of papers on the connection between sexual violence and alcohol use.

Historically, the symposium series has been supported by funds from the Office of the Chancellor of the University of Nebraska-Lincoln and by funds given in memory of Professor Harry K. Wolfe to the University of Nebraska Foundation by the late Professor Cora L. Friedline. This year's symposium was supported by funding from Chancellor Ronnie Green.

This symposium volume, like those in the recent past, is dedicated in memory of Professor Wolfe, who brought psychology to the University of Nebraska. After studying with Professor Wilhelm Wundt in Germany, Professor Wolfe returned to his native state, to establish the first undergraduate laboratory in psychology in the nation. As a student at the University of Nebraska, Professor Friedline studied psychology under Professor Wolfe.

Lincoln, NE, USA — Lisa Crockett

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Chapter 1
Introduction

Dennis E. McChargue, Sarah J. Gervais, and David DiLillo

1.1 Introduction

The 68th Nebraska Symposium on Motivation discusses the latest research on the intersection of alcohol and sexual violence. Alcohol use is deeply embedded in our society. Recent years have seen concerning changes in drinking patterns: rates of consumption, drinking to excess among the general population, and heavy episodic drinking among young people are on the rise (Dawson et al., 2015; Grucza et al., 2018). Along with these increased rates of use, health problems associated with alcohol consumption have reached alarming levels. Drinking contributes to a wide range of health concerns, including high blood pressure, heart and liver disease, stroke, and digestive problems (Bauer et al., 2014; Nelson et al., 2013; White et al., 2020). Drinking is also associated with social and work problems and risky behaviors such as drunk driving (Compton et al., 2014; Flowers et al., 2008).

Although its prevalence is often underestimated (Palermo & Peterman, 2011), sexual violence affects millions of people each year worldwide. If fact, best estimates (CDC, 2015; Fedina et al., 2018) indicate that more than 1 in 3 women and 1 in 4 men have experienced sexual violence involving physical contact during their lifetimes. Approximately 1 in 5 women and 1 in 38 men have experienced completed or attempted rape. These experiences are associated with myriad psychological, emotional, and physical effects on a survivor (García-Moreno et al., 2013; Jina & Thomas, 2013). Adding to the problem, sexual violence is costly. Estimates put the cost of rape at $122,461 per victim, including medical costs, lost productivity, criminal justice activities, and psychological intervention (Sabia et al., 2013).

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As harmful as alcohol use and sexual violence each are, the high frequency with which they co-occur appears to compound the troubling outcomes. Studies estimate that between 50 and 77% of sexual assaults involve alcohol consumption by either the offender or victim, or, most commonly both. Sexual violence when the perpetrator has been drinking is associated with an increased likelihood of perpetrators using physical force (Parkhill et al., 2009). Despite bearing no responsibility for their assualt, survivors experience greater stigma and self-blame than do perpetrators and are more likely to use alcohol to cope following the assault (Brown et al., 2009; Kilpatrick et al., 2007; Orchowski et al., 2013).

Given that alcohol use, sexual assault, and subsequent negative consequences are inextricably linked, it is concerning that most research efforts on alcohol use and sexual assault remain relatively siloed, focusing on alcohol use or sexual violence, but not both. Similarly, intervention efforts typically focus on either problem drinking or sexual violence without substantive focus on the other. For example, interventions on college campuses to reduce binge drinking rarely focus extensively on sexual violence, and alcohol use is rarely central to sexual assault prevention or risk reduction efforts (Haikalis et al., 2018; Leone et al., 2018).

This trend has also played out with respect to the history of Motivation Symposium books. There are published volumes on the etiology of drug abuse (Bevins & Bardo, 2004) and the genetic underpinnings of substance use (Stoltenberg, 2014) as well as volumes that have examined sexual violence topics, such as sexual objectification (Gervais, 2013) and child maltreatment (Hansen, 1998), but none of these volumes have considered both substance use and violence. For these reasons, the present volume purposefully integrates considerations of alcohol use and sexual violence to give us a more comprehensive understanding of these phenomena.

As will be discussed within this volume, essential gaps in knowledge span multiple areas of research. Topics related to the strengths and limitations of current research design and measurement will be covered. A strong argument for further examination of cognitive, physiological, and emotional causal mechanisms that enhance translation from preclinical research to interventions. Moreover, experts will address gaps in research associated with sexual and gender minorities, given that most research has been conducted on a heterosexual population. Likewise, experts will expand our knowledge from college students to other emerging adult groups, such as those in the military. Lastly, contextual questions related to relationship and non-relationship pairings while drunk will be discussed.

For example, Chap. 2 by Testa provides a historical account of research on alcohol and sexual assault since the connection between these variables started to receive significant scholarly attention over 30 years ago. Using her career as a framework, she traces the development of important breakthroughs and insights in understanding alcohol-involved sexual assault. Testa recognizes important milestones such as when researchers identified and distinguished incapacitated rape from other forms of sexual victimization as well as the central role that hookup culture plays in alcohol-involved sexual assault. Her chapter points to the importance of identifying features of the drinking context (i.e., place) and how they intersect with the personal motivations (i.e., person) of potential perpetrators and potential victims who

frequent these contexts. Testa ends by demonstrating that the most effective policies and prevention programs to reduce alcohol-involved sexual assault involve a focus on both the situation and the person.

In Chap. 3, Dr. Orchowski discusses the science of sexual assault prevention among military personnel. Given the high rates of sexual violence among US military service members, there is a great need for innovative and effective prevention efforts to reduce these occurrences. Dr. Orchowski argues for the need for an integrative alcohol and sexual assault prevention treatment. She draws upon intervention literature across multiple populations and targets and details unique characteristics of importance when constructing military interventions. Finally, she shows the importance of innovative web-based approaches.

In Chap. 4, Dr. Davis and colleagues delineate the approach for science of behavioral change applied to alcohol-involved sexual aggression. This chapter highlights the importance for a systematic examination of mechanisms that enhance the likelihood of alcohol-involved sexual aggression. These examinations build the foundation for targeted interventions to reduce the influence of said mechanisms, thereby altering the course of sexual aggression among college populations. As such, this chapter provides a road map on how to build a program of research focused on the prevention of alcohol-involved sexual aggression.

Chapter 5 extends alcohol-related sexual aggression to sexual and gender minority (SGM) populations. Dr. Parrott and colleagues provide an explanation of how SGM stigma influences our views of alcohol-related sexual aggression within this population. They then delineated an integrative model within the I^3 and alcohol myopia theories of aggressive behavior to illustrate how alcohol influences sexual violence among SGM individuals. Finally, Chap. 5 covers implications for future research and prevention.

In Chap. 6, Dr. Abbey centers her discussion around experimental limitations that restrict our understanding of alcohol and men's sexual assault perpetration. Through this discussion, she builds an argument for the use of emerging technologies to enhance our examination of alcohol-involved sexual perpetration. In particular, she argues that virtual reality acts as experimental proxies to real life and that studying sexual violence within the virtual world may substantially refine our understanding of these significant problems.

Finally, Drs. Kilpatrick and Hahn provide an integrative review of the other chapters, noting how the other contributions to this volume inform the sexual violence and alcohol misuse literature and document the prevalence and adverse consequences of alcohol-involved sexual assault at the individual and societal level. They suggest that honing in on the role of *heavy* alcohol use, alcohol-related blackouts, and sexual scripts could provide a better understanding of when alcohol causes sexual assault perpetration or increases risk for sexual victimization. Drs. Kilpatrick and Hahn also make several recommendations for research, policy, and interventions on alcohol-involved SV, including ways to increase the reporting, investigation, and adjudication of sexual assault cases. They conclude that sexual violence research is severely underfunded and suggest that a National Sexual Violence Research Institute be established with large amounts of dedicated funding. The 68th

Nebraska Symposium on Motivation was originally scheduled to take place in Spring of 2020, but had to be postponed due to the COVID-19 pandemic. It was held virtually in April of 2021. We appreciate the perserverance of all the contributors, not only in preparing their chapters but also in adapting to the revised format of the Symposium during such challenging times. In the end, we believe this volume makes a unique and lasting contribution to the literature addressing the crucial intersection of alcohol use and sexual violence.

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Chapter 2
Understanding and Preventing Alcohol-Related Sexual Assault

Maria Testa

2.1 Introduction

Sexual assault is currently a widely studied topic, with a recent PsycInfo search yielding over 23,000 journal articles with sexual victimization, sexual assault, or rape as a keyword. This was not the case when I began my career 30 years ago, before the ubiquity of sexual victimization among young women was recognized. Based on cases of rape reported to law enforcement, rape incidence (i.e., forced sexual intercourse) appeared to be very low (e.g., 3 cases per 10,000 women); however, most rapes are not reported (see Kilpatrick & McCauley, 2009). Modern study of sexual assault may be dated back to a large national study of college students by Mary Koss et al. (1987). Recognizing that prevalence estimates are sensitive to question wording and context (see Koss, 1993), Koss et al. (1987) used the Sexual Experiences Survey (SES), a series of ten behaviorally specific questions assessing experiences of unwanted sexual contact, attempted intercourse, and completed intercourse resulting from verbal coercion, physical force or threats, or administration of alcohol or drugs. Sexual victimization rates were 10–15 times higher than those derived from official crime surveys: over 50% of college women reported 1 or more of these unwanted sexual experiences since age 14 and 15.4% reported an experience that met the legal definition of rape (Koss et al., 1987). Contrary to the stereotype of stranger assault, 84% of victims knew the perpetrator. These results led to paradigm shift in thinking about rape and sexual assault as endemic and ubiquitous in the lives of young women rather than rare and deviant.

Among the striking findings of Koss's landmark study was the fact that alcohol or drugs were involved in a substantial number of sexual victimization experiences: 8% reported intercourse, and 12% reported attempted intercourse because a man

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had given them alcohol or drugs. Considering all unwanted experiences, female victims indicated that they had been drinking in 55% of incidents and believed the perpetrator had been drinking in 73% of them. Subsequent analyses of this dataset revealed that heavier alcohol consumption was associated with both victimization and perpetration (Koss & Dinero, 1988, 1989) and that alcohol use at the time of the sexual victimization experience was associated positively with incident severity (Ullman et al., 1999).

Koss's work led directly and indirectly to a substantial increase in research seeking to understand the predictors and consequences of sexual victimization experiences. Much of my research agenda over the past 30 years has focused on understanding the role of substance use in women's sexual victimization. What follows is a brief and admittedly subjective overview of research on sexual victimization and the role of alcohol, highlighting my own work. I use my own career trajectory as an organizing framework to summarize developments since Koss's landmark study, beginning with cross-sectional studies and exploration of sexual assault events and moving toward daily report studies and environmental interventions. Looking back chronologically over the important advances in methods and thinking reveals just how far we have come from the first recognition that alcohol plays some role in sexual assault.

I was a college student in the 1980s, the same cohort that served as participants in Koss's study. The drinking age was 18 when I started college, sanctioned events included alcohol (e.g., freshman dorm mixers), and the environment was a lot more "wet" than it is now. There certainly were many sexual assaults, and many that included alcohol, but we didn't have a label for them, and we didn't consciously consider the possibility that such things might happen to us or to our friends. When a sexual assault happened, people didn't talk about it – and because we didn't talk about it, we didn't know that similar things were happening to others as well. Unlike college women in 2021, we didn't refer casually to the "1 in 5" figure representing risk of sexual assault among college students. We didn't go to parties with a phalanx of friends to provide protection against predators or armed with an arsenal of strategies designed to reduce the risk of being sexually assaulted (see Sell et al., 2016). After Koss's landmark study, the problem that had no name now had a name. Labeling and framing the problem is a first and necessary step that needed to happen before we could even begin studying sexual assault and ultimately to take steps to prevent its occurrence.

2.2 Early Explorations to Understand the Role of Alcohol in Sexual Assault

I began my career and first obtained federal funding for my work in the early 1990s when research on sexual assault was in its infancy. My first professional position was as a Project Director on an NIAAA grant that was among the very first to

consider the connection between women's childhood victimization and adult alcohol use and victimization (Miller et al., 1993). I had no background in substance use or victimization, just an interest in "women's issues," which in graduate school had included research on women's coping with abortion (Major et al., 1990). Research on other types of violent victimization was becoming increasingly prevalent at that time as researchers recognized and documented previously hidden problems such as childhood sexual abuse and intimate partner violence (e.g., Straus & Gelles, 1990) and their association with alcohol use (e.g., Kantor & Straus, 1989). Thus, the climate and time were ripe for research on sexual victimization and the potential role of alcohol.

In response to the AIDS epidemic at the time, the National Institutes of Health (NIH) dedicated a substantial amount of funding to HIV research. The National Institute on Alcohol Abuse and Alcoholism (NIAAA) was particularly interested in addressing the potential contribution of alcohol to HIV infections. Early survey studies suggested that frequency of drinking before sex was negatively associated with condom use (Butcher et al., 1991; Stall et al., 1986). It was hypothesized that intoxication impaired risk perception and judgment, contributing to failure to use condoms. My mentored K award from NIAAA (1994–1999), funded as an HIV award, aimed to consider the role of young women's alcohol use as a potential contributor to negative sexual outcomes, broadly construed. Although there was no specific funding stream for research on violence, the associations among sexual victimization, substance use, and HIV (e.g., Johnsen & Harlow, 1996; Zierler et al., 1991) allowed me to make the case for considering sexual victimization as a secondary sexual outcome.

The wide-open field at the time allowed for exploration of the potential mechanisms linking alcohol with women's sexual risk-taking and negative sexual outcomes, using a variety of different methodologies (survey, qualitative, critical event, laboratory analog). I began by reviewing the literature on alcohol and sexual victimization, admittedly scant at the time, and discussing several potential mechanisms which could explain the association but required additional research (Testa & Parks, 1996). At the time, most studies considered only the global association between alcohol use and sexual victimization, generally finding that heavier drinkers tended to report more sexual victimization. However, because alcohol consumption is typically associated with other risk factors such as sexual activity and prior victimization and may be a consequence of victimization, these studies cannot be used to establish a causal role for alcohol. About half of sexual assault incidents occurred when the victim was drinking, and it seemed likely that women were vulnerable when they were intoxicated, reflecting a proximal or acute effect of alcohol on sexual victimization. However, we noted that isolating this proximal relationship is complicated by the fact that alcohol is typically consumed in settings that have an inherent risk for sexual victimization (e.g., bars, parties). Twenty-five years later, it is heartening to look at the paper and the road map it offered for future research and realize that much of it has been undertaken.

Although sexual assault research was in its infancy in the 1990s, the era was a golden age for alcohol research, particularly alcohol administration studies using

the balanced placebo design, which permitted disentangling of pharmacological from expectancy effects of alcohol (see Rohsenow & Marlatt, 1981). The recently developed Alcohol Myopia Model (Steele & Josephs, 1990; Steele & Southwick, 1985) was highly influential as a theory that explained how cognitive impairment due to intoxication could influence behavior. Using experimental analog methodology, early studies showed that administered alcohol diminished sexual risk perception and impaired sexual decision-making (e.g., regarding condom use; Fromme et al., 1997, 1999; MacDonald et al., 1996). Analogously, it seemed quite plausible that alcohol's role in sexual assault was similarly proximal. For men, alcohol administration impaired the ability to recognize women's inhibiting cues (e.g., verbal and nonverbal expression of reluctance), leading to longer latencies in recognizing that a sexually aggressive man should desist (e.g., Marx et al., 1997). Intoxication is also likely to impair women's judgment, ability to recognize risk, and ability to respond to unwanted sexual advances. This impairment is presumably recognized by perpetrators who give women alcohol in order to have sex with them (Koss et al., 1987; Martin & Hummer, 1989).

As part of the K award, I conducted an alcohol administration study that examined whether women's perceptions of a scenario with potential risk for sexual victimization (allowing an intoxicated man into one's home) were altered by consumption of a moderate dose of alcohol (sufficient to raise breath alcohol concentration to 0.08%) relative to placebo or no alcohol. Consistent with hypotheses, women who had consumed alcohol perceived the male character more positively and perceived that sexual activities with him would yield lower chances of negative outcomes and higher chances of positive outcomes compared with women who consumed no alcohol (Testa et al., 2000). Consequently, drinking women expressed stronger intentions to engage in more intimate sexual behavior with the male character, which is associated with sexual victimization (Harrington & Leitenberg, 1994). Later experimental studies confirmed that alcohol impairs women's ability to recognize and to respond to sexual victimization risk (Davis et al., 2004; Testa et al., 2006), evidence for one potential mechanism by which women's drinking may contribute to sexual victimization.

Examining the acute effects of alcohol on sexual consequences outside of the lab is challenging. Daily report studies permit within-person comparison of events, such as sexual events with versus without alcohol. However, in the 1990s daily report studies relied on paper diaries and analytic methods, and technology appropriate for these intensive longitudinal studies were limited. Given these limitations, critical event studies that systematically compared two matched events, within-person, were a good alternative (see Leigh & Stall, 1993). Consequently, as part of my K award, I interviewed young, sexually active community women regarding their most recent episodes of sex with a new partner: one with alcohol and another without alcohol (see Testa & Collins, 1997). Compared with first-time sex events without alcohol, those that involved alcohol were more likely to include a partner just met that day and less likely to include sexual communication (although condom use did not differ according to whether alcohol was consumed; Testa & Collins, 1997). Thus, within individuals, alcohol involvement at the time of first sex was

associated with characteristics that increase vulnerability to sexual victimization. In another example of the within-person event comparison approach, Muehlenhard and Linton (1987) compared characteristics of sexually aggressive dates with those of the most recent date. They found that heavy alcohol use was more likely on aggressive dates compared with other dates (as was miscommunication, the man initiating the date and paying expenses, and "parking").

Evidence linking women's drinking with sexual victimization was scant at that time, particularly evidence for a prospective effect of alcohol use on later victimization. As part of the K award, I conducted a small 2-wave survey of 93 high-risk community women (more than 1 sexual partner in the last year, weekly consumption of at least 3 drinks on an occasion). Alcohol problems (but not consumption) at Time 1 predicted experiencing sexual victimization over the next year; Time 1 victimization did not predict Time 2 alcohol consumption or problems (Testa & Livingston, 2000). A particularly valuable part of this small study was the detailed information we collected about specific incidents of sexual assault. Women who reported a sexual victimization experience on the SES participated in a semi-structured interview regarding their most recent experience. We then conducted qualitative and thematic analysis to identify characteristics of these incidents and themes around the role of alcohol. A prominent theme was the perception that alcohol impaired judgment ("If I hadn't been drinking, I would never have left the bar with him") and their ability to resist ("I did try to stop it, but I was so intoxicated and confused"). Women also perceived that men's drinking contributed to their sexual aggression ("…he was less aware of what I was thinking, feeling, less aware of how I was responding; Testa & Livingston, 1999).

A substantial proportion of the sexual assault events arose from situations that we labeled "dates" (Testa & Livingston, 1999), consistent with Koss et al.'s (1987) finding that 57% of college sexual victimization incidents occurred on dates. "Date rape" was a common term used at that time to distinguish incidents perpetrated by acquaintances with some sexual interest in each other from the stereotypical stranger rape. In current language, many of these scenarios would now be labeled "hook-ups," in that they involve sexual activity between people who are not in a relationship (Paul et al., 2000). Of note, nearly all of the date incidents included victim alcohol consumption as did nearly all the incidents we labeled "set-up," in which the perpetrator orchestrated the isolation and/or intoxication of the victim (Testa & Livingston, 1999). In contrast, alcohol was present in only 20% of "relationship" incidents, those perpetrated by an intimate partner or ex-partner. Ullman and Brecklin (2000) also found that alcohol was more likely to be present in assaults involving a perpetrator not well-acquainted with the victim compared with incidents involving intimate partners. Among college students alcohol use was more likely to precede rape/attempted rape incidents than incidents accomplished through verbal coercion (Abbey et al., 1996). Coercion incidents were much more likely than rapes to be perpetrated by steady dating partners (58% vs. 30%). Cleveland et al. (1999) found that intimate partner perpetrators rarely relied on alcohol/drug administration as a tactic, instead using power tactics such as force and threats. Acquaintances and dates were much more likely than intimate partners to use alcohol/drug tactics. This

study was important in showing that power and alcohol/drug tactics were independent. A recent analysis of sexual victimization incidents using latent class analysis supports the distinction between assaults involving acquaintances, parties, and incapacitation versus verbally coerced, sober assaults perpetrated by intimate partners in private (Walsh et al., 2021). Accordingly, women's alcohol use was a prospective predictor of revictimization via force or incapacitation, but not via coercion (Norris et al., 2021). These different classes of sexual victimization events suggest different underlying origins and mechanisms and, consequently, a need for different types of prevention strategies.

2.3 Understanding the Pathway from Alcohol to Sexual Victimization

The K award led directly to my first R01, the Women 2000 project (1999–2004), which involved a community sample of 1014 women, ages 18–30, recruited via random digit dialing in the Buffalo, NY area. It was a more sophisticated version of the small prospective study I had done as part of the K award that permitted consideration of the reciprocal effects of alcohol and sexual victimization using three assessments over 2 years (Testa & Livingston, 2000). Because of the focus on the role of alcohol in sexual assault, I was particularly interested in its measurement. Koss et al.'s (1987) work was prescient in including an item assessing rape resulting from intoxication on the SES. However, their original item – "when a man gave you alcohol or drugs" – was criticized as too broad and failing to match legal definitions of substance-facilitated rape which typically include administration that is surreptitious or involves force or deception (see Gylys & McNamara, 1996). This led to attempts to make alcohol items conform more closely to legal definitions (e.g., Abbey et al., 2002). For this study, dubbed the "Women 2000 study", we modified the SES alcohol item to specify that unwanted intercourse occurred "when a man made you intoxicated by giving alcohol or drugs without your knowledge or consent" and added the item "when you were incapacitated (passed out, unaware of what was happening) and unable to prevent intercourse from taking place" (Testa et al., 2004b). Of the 174 women (17.2%) who reported rape since age 14, 79 reported only forcible rape (resulting from force or threats of force), 66 reported only incapacitated rape (resulting from incapacitation or alcohol administered without consent), and 30 women reported both types (Testa et al., 2003).

Women who reported an episode of sexual victimization on the SES at Time 1 were interviewed regarding how the incident came about. These descriptive and qualitative data allowed us to compare SES categorizations based on women's labeling of their unwanted experiences with the labels applied by independent coders, providing rare validation data on the measure (Testa et al., 2004b). The detailed event information also allowed us to consider the role of victim and perpetrator alcohol use in assault severity (Testa et al., 2004a). Moreover, qualitative and

thematic analysis allowed us to increase understanding of verbal sexual coercion (Livingston et al., 2004) and adolescent sexual victimization experiences (Livingston et al., 2007). As described in detail below, thematic analysis of these incidents was crucial to recognition of incapacitated rape as a unique and prevalent form of sexual victimization in which alcohol did not merely facilitate or exacerbate but actually served as the primary tactic used by the perpetrator to accomplish the assault (Testa et al., 2003).

Women who reported some type of sexual assault experience participated in a semi-structured interview regarding the incident (n = 361). Interviews were recorded, transcribed, and subjected to thematic coding and analysis. To make the daunting task of coding more manageable, we separated the verbal coercion incidents from the rapes and then read and reread these transcripts until patterns emerged (see Testa et al. (2011) for a description of the process). The transcripts that described forcible rapes were brutally hard to read, with detailed descriptions of physical violence and emotional trauma. However, nearly half of the rape descriptions had a fuzzy, dreamlike quality in which the woman was often unclear as to exactly what had happened and whether the rape was completed or merely attempted, sometimes piecing things together after the fact. The incidents included in this latter group involved consumption of large amounts of alcohol by the woman which resulted in an inability to speak, cry out, or resist what was happening against her will. We labeled this later group "incapacitated rape" (IR) to distinguish it from forcible rape (FR). There were significant differences in the characteristics of these incidents. All of the IR events involved alcohol or drugs: 62.5% alcohol only, 33.3% alcohol and drugs, and 4.2% drugs only. IR events were much more likely than FR events to occur after attending a bar or party (70.8% vs. 16.9%). Only 25% of the FR incidents involved alcohol, and the number of drinks consumed was significantly lower in FR versus IR episodes (4 vs. 9; Testa et al., 2003). FR and IR also had different predictors. Childhood sexual abuse predicted FR (but not IR), whereas adolescent alcohol and drug use increased the likelihood of reporting IR but not FR, suggesting that substance use is a risk factor for some types of sexual assault but not all.

The clear distinction between FR and IR events led to an important insight in my thinking about the role of alcohol in sexual assault. Alcohol had been considered to contribute indirectly to victimization by impairing women's ability to recognize and respond to risk (e.g., Testa et al., 2000). However, in IR, rather than merely facilitate, alcohol use was the tactic used by the perpetrator, rendering force unnecessary in most cases. At about the same time, a study by Mohler-Kuo et al. (2004) revealed that the majority of college rapes occurred when the woman was "too intoxicated to consent" – mirroring our definition of incapacitated rape. As discussed in more detail below, this led to a focus on college samples in studies of alcohol and sexual victimization.

Narrowing the role of alcohol in sexual victimization is an important advance in understanding the underlying mechanisms and ultimately in preventing sexual assault. As described above, alcohol is much more likely to play a role in assaults perpetrated by less well-known perpetrators compared with intimate partners (e.g., Cleveland et al., 1999; Ullman & Brecklin, 2000). In contrast, intimate partners rely

on tactics such as verbal coercion (Livingston et al., 2004) and sexual precedence, to achieve sexual intercourse when the woman is unwilling (Testa et al., 2004a). We used prospective Women 2000 data to test the hypothesis that women's heavy episodic drinking (HED, frequency of 4+ drinks on occasions) would increase vulnerability to victimization from non-intimate partners, but not from intimate partners over the next 2 years. Based on victimization experiences reported on the SES at 1-year and 2-year follow-ups, women were classified into groups: those who reported victimization perpetrated by an intimate partner ($n = 91$), victimization by someone other than an intimate partner ($n = 51$), victimization perpetrated by both types of partners ($n = 20$), and no victimization ($n = 761$), which served as the reference group. Time 1 frequency of HED, number of sex partners, and not living with a man predicted non-intimate partner victimization, supporting the hypothesis that drinking and other lifestyle variables prospectively increase vulnerability to victimization by friends, acquaintances, and strangers. In contrast, cohabitation or marriage, prior intimate partner sexual victimization, low assertiveness, and, surprisingly, drug use predicted victimization from an intimate partner (Testa et al., 2007). These findings are important in suggesting that women's alcohol use is a risk factor for some but not all types of sexual victimization, helping to identify the pathways by which alcohol contributes.

2.4 Prevalence of Incapacitated Rape and Alcohol-Involved Victimization in College Samples

As described above, early explorations of sexual victimization experiences led to appreciation of the heterogeneity of these experiences and improved understanding of risk factors and populations most likely to be at risk. Identification of incapacitated rape as a unique form of victimization and one in which substance use is obviously critical proved to be influential and important in refining our conceptualization of alcohol's role in sexual victimization. Soon after I completed the Women 2000 study, Dean Kilpatrick explored the construct of IR more fully, with a large national study that distinguished between drug and alcohol-facilitated rapes (DAFR) in which the substance was administered by perpetrator from IR resulting from voluntary incapacitation. Kilpatrick and colleagues compared a household sample with a college sample and found that annual incidence of IR/DAFR was nine times higher for the college versus household sample (Kilpatrick et al., 2007). As found by Testa et al. (2003), the vast majority of IR/DAFR incidents involved alcohol only (79%), 17% involved alcohol and drugs, and 4% involved drugs only.

Heavy episodic drinking is particularly prevalent among college students (Krieger et al., 2018), as is socializing via drinking settings (Armstrong et al., 2006), contributing to vulnerability to alcohol-involved sexual assault. Study of alcohol-involved victimization began to focus more on college samples, which typically have higher rates of HED and alcohol-involved sexual victimization relative to

general population samples (see Testa & Livingston, 2018 for a review). Among college students, at least half of sexual victimization incidents include alcohol (Abbey, 2002), with some studies showing that the majority include victim drinking (e.g., 72%; Testa & Hoffman, 2012). In addition, most college rapes result from incapacitation not force. For example, in a national college sample, Mohler-Kuo et al. (2004) found that 72% of unwanted intercourse (rape) events among college women occurred when they were so intoxicated that they could not consent – equivalent to our definition of incapacitated rape. Additional studies find a similarly high proportion of incapacitated rape (e.g., 83% (Carey et al., 2015); 85% (Lawyer et al., 2010); 80% (Senn et al., 2014)). Risk of incapacitated relative to forcible rape increases substantially from high school to college (Krebs et al., 2009), consistent with the increase in heavy episodic drinking and frequenting of drinking environments with the transition to college. The HED rate of the college or university is positively associated with rates of sexual victimization at that institution, a relationship first noted by Mohler-Kuo et al. (2004) and supported in recent studies (e.g., Moylan et al., 2019). Conversely, at historically black colleges and universities (HBCU) where the rate of HED is low, IR is rare relative to colleges with primarily white student bodies (Krebs et al., 2011). However, even HBCU women who drink to intoxication are at elevated risk of incapacitated rape (Barrick et al., 2012).

2.5 Is Women's Drinking a Proximal Cause of SV?

It is commonly believed that the distal relationship between heavy drinking patterns and sexual victimization observed in survey studies reflects the occurrence of victimization while the woman is under the influence of alcohol. She may be incapacitated and unable to respond to sexual aggression (Testa et al., 2003) or her impairment may contribute indirectly, by making her less able to recognize or respond to sexual risk cues as demonstrated in several experimental analog studies (Davis et al., 2004; Norris et al., 2006; Testa et al., 2000; Testa et al., 2006). However, survey studies cannot establish whether real-world drinking events increase the likelihood of experiencing sexual victimization later that same day.

An important methodological advance over the past 10–15 years is the use of electronic daily report data, allowing for assessment of naturally occurring episodes of drinking and sexual activity over many days and within-person comparison of drinking days with nondrinking days. These intensive longitudinal studies reveal that on days on which women drink more than their own average, they are more likely to experience negative sexual consequences later that day. These consequences include regretted sex (Scaglione et al., 2014), sexual coercion (Neal & Fromme, 2007), coerced consensual sex (Stappenbeck et al., 2020), or a sexual event that included coercion or lack of perceived control (Ford et al., 2021). Particularly compelling, Parks et al. (2008) found that the likelihood of involvement in a sexually aggressive event on a given day was 19 times higher when the woman had consumed 4 or more drinks (i.e., HED) earlier that day compared to a day with

no drinking. Consuming one to three drinks did not increase the risk, suggesting that intoxication is key to vulnerability.

Using very different methodology, Graham et al. (2014) also provide evidence that women's intoxication increases their sexual vulnerability. Using observational data from bars, they found that men's degree of sexual aggression or invasiveness (ranging from gestures or comments to refusing to leave woman alone to sexual grabbing or touching) was positively associated with the intoxication level of the target woman but not that of the perpetrator. The greater willingness of men to make advances toward intoxicated women is consistent with experimental studies showing that men view a woman who is drinking alcohol versus cola as more impaired, sexually interested, and sexually available (George et al., 1988, 1995). Women's increased vulnerability when they are intoxicated stems not only from their own impaired risk perception (Melkonian & Ham, 2018) but also from men's perceptions of and behaviors toward them.

2.6 Can Women Reduce Risk of Victimization by Reducing Drinking?

Because HED patterns – and drinking events in particular – increase the risk of sexual victimization among college women, reducing drinking may be an efficacious way of preventing alcohol-related sexual victimization, an argument made by Testa and Livingston (2009). By way of analogy, intimate partner violence (IPV) can be reduced by treating perpetrators for alcohol use disorders, reflecting the strong association between alcohol problems and IPV perpetration (O'Farrell et al., 2003). My next NIAAA-funded project, the Mother-Daughter Study (2003–2008), involved a randomized controlled trial (RCT) testing whether a parent-based intervention (PBI) that had previously been shown to reduce drinking and its negative consequences among college freshmen (Turrisi et al., 2001) could reduce sexual victimization. The intervention, which took place during the summer prior to college entry, involved encouraging mothers to talk to their daughters about alcohol and, importantly, to improve communication with them. We expanded the original intervention to include a condition in which mothers were to talk to their daughters about sexual risk behaviors as well as alcohol. Using a sample of mothers and daughters recruited from the Buffalo, NY area, at the time of high school graduation, mothers were provided materials to help them talk to their daughters in a supportive, values-based way. We found no differences between the alcohol-only and the alcohol + sex intervention conditions, so these were combined for analysis. Fewer women reported incapacitated rape or attempted rape in the intervention condition (8.0%) compared with the control condition (12.1%) although there was no difference in overall sexual victimization experiences between intervention and control conditions. The effects of PBI were mediated via increased mother-daughter communication, which resulted in less frequent first semester HED, which in turn

resulted in lower rates of incapacitated rape and sexual victimization in the first year of college (Testa et al., 2010b). Hence, this study provides support for reducing an individual woman's alcohol use as a way of preventing alcohol-related sexual assault.

A few other RCTs have considered whether intervention to reduce drinking can prevent college women's sexual victimization. Clinton-Sherrod et al. (2011) tested the impact of a motivational interviewing (MI) intervention, with and without feedback (FB) on reports of sex when too intoxicated to prevent it (a single item from the Young Adult Alcohol Problems Screening Test; Hurlbut & Sher, 1992). Although MI + FB reduced drinking and had a significant negative effect on the outcome, drinking did not mediate the effect, thus failing to support the proposed mechanism. Gilmore et al. (2015) tested the impact of personalized normative feedback (PNF) for alcohol use, sexual victimization risk, and combined alcohol and sexual victimization on subsequent SV. There was a significant reduction in later victimization associated with the combined (alcohol + SV) condition relative to the assessment-only control group that was specific to previously victimized women. Thus, these findings do not provide clear support for reducing alcohol use as a means of preventing college SV. The most efficacious SV prevention program to date was a comprehensive four-session, in-person program that was shown to reduce sexual victimization among college women over 2 years (Senn et al., 2015, 2017). The intervention was not designed to reduce women's alcohol use but rather focused on improving risk recognition and sexual assertiveness. Interestingly, encouraging women to recognize that alcohol serves as a marker of a risky situation led some to recognize the need to reduce their consumption (C. Y. Senn, personal communication, May 3, 2018).

2.7 Beyond Victim Drinking: Drinking Settings and Potential Perpetrators

The robust effect of college women's HED on sexual assault and incapacitated rape had made me optimistic about the possibility of preventing victimization using any one of a number of efficacious college drinking interventions (e.g., Reid & Carey, 2015). However, in retrospect, this seems simplistic and overly optimistic. Even if the vast majority of sexual assaults involve alcohol, women's drinking cannot be said to "cause" sexual victimization, which is the result of a perpetrator's action. A woman who drinks alone, not in the presence of potential perpetrators, has no risk of alcohol-related sexual victimization. Rather, consistent with Routine Activities Theory (Cohen & Felson, 1979), sexual assault requires the convergence in time and space of a perpetrator, a victim, and a setting in which there is an absence of capable guardians. College drinking settings would seem to facilitate convergence of all three. Most college drinking takes place in social settings, such as parties, bars, and small gatherings (Clapp et al., 2006; Creswell, 2020; Fairbairn & Sayette,

2014). Drinking settings bring together potential victims and perpetrators in a context that involves heavy drinking and social norms that encourage sexual disinhibition and aggression (Armstrong et al., 2006; Bersamin et al., 2012; Graham et al., 2014; Jakeman et al., 2014; Martin & Hummer, 1989; Norris et al., 1996). Women's alcohol consumption impairs the ability to recognize or respond to risk (see Melkonian & Ham, 2018 for a review) and leads men to view them as sexually interested and available (George et al., 1988). Men's alcohol consumption increases their acceptance of and willingness to engage in sexual aggression (Marx et al., 1999; Norris et al., 2002). Although bystanders can be helpful in preventing aggression (Kettrey & Marx, 2019), intoxicated bystanders have more difficulty recognizing and responding to the sexual advances of others compared to their sober peers (Leone et al., 2018), thus failing as capable guardians in the language of Routine Activities Theory. Supporting the importance of drinking settings in sexual assault, a recent daily report study of young community women showed that the association between women's substance use events and sexual assault was primarily mediated via women's proximity to potential offenders, and not a direct reflection of their own intoxication (Read et al., 2021). Drinking settings may serve as "hot spots" for sexual aggression, with the likelihood of aggression further enhanced by the pharmacological effects of alcohol on victim, perpetrator, and bystanders.

Research on perpetrators has lagged behind research on victimization, which had grown rapidly in the years since Koss's study. My next NIAAA-funded project (2010–2015) examined the role of college men's drinking and sexual activity as contributors to sexual aggression perpetration, with a focus on drinking contexts. The College Men's Study included a longitudinal study, involving two cohorts over five semesters, as well as a daily report study considering the proximal effects of drinking episodes on sexual aggression episodes. There was suggestive evidence from survey studies that men who drink more heavily are more likely to perpetrate sexual aggression (see Abbey (2002) and Testa (2002) for reviews). However, at the time of funding, there had been few prospective studies considering this relationship. Abbey and McAuslan (2004) found that repeat offenders drank more in sexual situations (but not overall) than men who perpetrated once or not at all, although repeat offenders also differed on other risk factors as well (e.g., delinquency, sexual misperception). Two other studies had failed to find a prospective relationship between men's alcohol consumption and later sexual assault perpetration after accounting for the robust effect of prior perpetration (Gidycz et al., 2007; Loh et al., 2005).

Men who drink more heavily are also likely to differ on traits such as hostile masculinity, antisocial behavior, and an orientation toward impersonal sex (Davis et al., 2018; Huntington et al., 2022; Parkhill & Abbey, 2008). Thus, in considering the prospective effects of HED on subsequent perpetration, it is critical to account for the potentially confounding effects of these individual difference variables. In a longitudinal study of predictors of college men's perpetration that began just before ours did, Thompson et al. (2013) controlled for an array of individual difference factors. They found that although heavier drinkers were more likely to be

perpetrators, alcohol did not have an independent effect after accounting for variables such as impulsivity, hostility toward women, perceived peer approval for sexual aggression, and perceived peer approval for sex with many women. Interestingly, although these individual difference variables are typically thought to be stable traits, Thompson et al. (2015) found that changes in these traits over time corresponded with increases and decreases in perpetration.

In the College Men's Study, we examined the impact of men's HED, individual traits, and drinking venue attendance on sexual aggression perpetration over five semesters (Testa & Cleveland, 2017). Perpetration was more likely in semesters in which men's HED frequency was higher than their own average. After accounting for the significant effects of antisocial behavior, low self-control, and impersonal sex, HED was no longer a significant predictor. However, drinking venue attendance had a positive effect on perpetration that remained significant, even after accounting for the individual difference variables. That is, men were more likely to perpetrate in semesters in which drinking venue attendance was higher than their own average. When we added hookups to the model, the effect of drinking settings was reduced and hookups became the strongest predictor of perpetration. College drinking settings may facilitate hookups or at least attract men who hook up frequently. We replicated findings in a separate sample, showing that frequenting of drinking settings but not HED predicted sexual aggression perpetration a year later (Cleveland et al., 2019). Taken together, the Thompson, Testa, and Cleveland prospective studies point toward drinking settings and contexts (peer approval for sex, impersonal sex) as key predictors of sexual aggression perpetration and suggest that hookups associated with these settings may be particularly important. Men's alcohol use was not an independent predictor of perpetration in any of the three studies.

Another component of the College Men's Study involved testing the hypothesis that drinking events would increase the likelihood of sexual aggression in the next few hours using daily report data (Testa et al., 2015). The daily report component used a subsample of survey participants who were at elevated risk of perpetration due to sexual activity and weekly HED during the first semester of college. For 56 consecutive days during the second semester, men reported on whether they had consumed alcohol since the previous day's report and, if so, the time of occurrence and number of drinks consumed. Likewise, each day men were asked whether they had engaged in or attempted to engage in any sexual activity with a woman since the previous report. If so, they were asked the time of occurrence and whether it involved a new or previous partner. For each sexual event, we asked the extent to which verbal persuasion, physical pressure or force, and encouraging the partner to drink were used to convince the partner to have sex (on a 1–7 scale). Thus, sexually aggressive tactics were contextualized as features of sexual events in an attempt to reduce social desirability bias and underreporting. This method may undercount events such as grabbing a woman in a bar (in which there is no existing sexual context or desire for sex), but seemed less likely to miss more serious events in which men use sexually aggressive tactics to achieve sexual intimacy. Within episodes of

sex, use of sexually aggressive tactics was inversely associated with perceived sexual interest by the female partner (Testa et al., 2018), providing evidence of construct validity. For analysis purposes, if use of any of these tactics was reported (score of 2 or more), the event was classified as sexually aggressive (32% of events met this criteria).

On average, sex events with new partners were more likely to include some use of aggressive tactics (63% vs. 27%) and to occur after drinking alcohol (50% vs. 10%) compared to events with previous partners (which accounted for the vast majority of sex events; Testa et al., 2015). Using a multinomial model, we considered whether drinking events increased the likelihood of reporting four different outcomes within the next 4 hours: consensual sex with a previous partner, aggressive sex with a previous partner, consensual sex with a new partner, and aggressive sex with a new partner. Sex with a new partner, both with and without aggression, was much more likely to occur within 4 hours after drinking compared to times of no drinking. In contrast, sex with a previous partner was actually somewhat less likely to occur after drinking compared to no drinking (Testa et al., 2015). The pattern of results was the same when we considered the impact of episodes of light (<2 drinks) and heavier drinking (2 or more drinks) separately, suggesting that intoxication was not necessary. Rather, results suggest that drinking settings facilitate sex with new partners and these events tend to involve greater use of sexually aggressive tactics.

2.8 Alcohol and Sex: Intertwined Risk Factors for Sexual Assault

Sexual activity has long been associated with sexual assault victimization and perpetration. Early studies observed that women with more sexual partners were more likely to report sexual victimization (Himelein, 1995; Himelein et al., 1994; Merrill et al., 1999), which may reflect greater exposure to potential perpetrators. Hookups have been associated cross-sectionally and prospectively with women's sexual victimization (Fielder et al., 2014). Analogously, men with an orientation toward "impersonal sex" or having many sexual partners are more likely to perpetrate sexual aggression (Malamuth et al., 1991, 1995; see Davis et al., 2018 for a review).

HED and casual sex are strongly associated (e.g., Messman-Moore et al., 2013; Testa et al., 2010a; see Claxton et al. (2015) and Garcia et al. (2019) for reviews), serving as risk factors for sexual assault, both independently (e.g., McGraw et al., 2022; Sutton et al., 2019; Tyler et al., 2017) and in combination (Jaffe et al., 2020). The intertwined nature of alcohol and sex suggests potential underlying mechanisms that link the two behaviors. College students believe that alcohol disinhibits and justifies casual sex (Lindgren et al., 2009). Frequency of attending Greek,

residence-hall, and off-campus parties positively predicts alcohol-related sex with a stranger (Bersamin et al., 2012), and meeting in drinking settings such as bars and parties facilitates alcohol-involved hookups (Kuperberg & Padgett, 2017). People who are interested in hooking up are likely to frequent drinking settings for this reason. Among college men, the trait sociosexuality (desire for uncommitted, impersonal sex with many, novel sex partners; Simpson & Gangestad, 1991) predicted engaging in more frequent drinking (Corbin et al., 2016). We replicated this relationship prospectively in two samples of college women and also found that expecting to have more hookups with alcohol predicted more subsequent drinking (Testa & Hone, 2019). Subsequent analysis of the college men's data provided additional support for a pathway from seeking novel sexual partners to drinking settings to hookups. Men high in sociosexuality engaged in more sex occasions with new partners but not with previous partners (Hone et al., 2020). Importantly, the relationship was partially mediated by occasions of drinking at bars and parties but not by occasions of drinking at home.

The pathway from sociosexuality to drinking settings to hookups may also extend to sexual aggression. In a recent study, men high in sociosexuality and HED prior to college entry were more likely to join a fraternity (Treat et al., 2021). Fraternity membership was in turn associated prospectively with increased HED, higher perceived peer norms for sexual aggression, and sexually aggressive behavior in the first 2 years of college. Using a second cohort of data from the College Men's Study, we found that men who were higher in sociosexuality at baseline reported more frequent attendance at drinking venues (parties, bars, clubs) the following year, which in turn predicted perpetration of sexual aggression the year after that (Cleveland et al., 2019). HED itself did not predict subsequent perpetration. These findings flesh out the pathway from impersonal sex to perpetration within the Confluence Model (e.g., Jacques-Tiura et al., 2007; Malamuth et al., 1995) by showing that drinking settings can help to explain this link. The heuristic model is depicted in the Fig. 2.1 below.

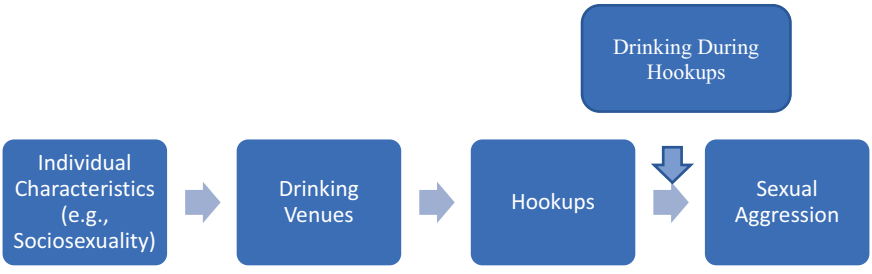

Fig. 2.1 Heuristic Model: Alcohol and Hookups Contribute to Sexual Aggression

2.9 Hookups as a Context for Sexual Aggression

Drinking settings provide a convenient and readily available way of meeting students' goals for socializing and meeting sexual partners. However, venues such as Greek parties and bars have long been recognized as sources of sexual risk for women (Armstrong et al., 2006; Norris et al., 1996). Recent studies suggest that college women recognize the dangers that drinking settings pose and regularly engage in a variety of protective behaviors such as watching out for friends and avoiding isolation with men (Blayney et al., 2020; Scaglione et al., 2015). Greater use of these protective behaviors weakened the effect of party attendance on sexual victimization among college women (Jouriles et al., 2022). Within public drinking settings populated with bystanders, sexual victimization typically takes the form of unwanted touching rather than rape (Flack et al., 2007; Graham et al., 2014; Walsh et al., 2021). Although it is certainly possible for incapacitated women to be raped at a party or public drinking setting, a common pathway from drinking settings to sexual victimization is via hookups. Couples interested in hooking up are likely to seek private locations where it is difficult for bystanders to intervene if unwanted advances occur.

In a small college study that turned out to be highly influential and widely cited, Flack et al. (2007) found that 78% of unwanted intercourse experiences occurred within the context of a hookup. The characteristics of hookups make them a particularly risky context even when alcohol is not involved. Hookups lack clear definitions or norms guiding sexual activity, which may contribute to misperception of the other's sexual interest and ambiguity regarding consent (Lewis et al., 2013; Paul & Hayes, 2002). Misperception of sexual intent predicts sexual aggression perpetration (Abbey et al., 2011, 2012; Treat & Viken, 2018). Men are more likely than women to overperceive sexual intent (Abbey, 1987; Lee et al., 2020) as are men and women high in sociosexuality (Howell et al., 2012; Rinehart et al., 2018) – the people most likely to seek out hookups. Prior to the development of the construct of hookups, early event-based studies focused on dates as a high-risk context for sexual victimization. These studies revealed that dates that ended in sexual victimization were more likely to have included some consensual sexual activity (Harrington & Leitenberg, 1994; Muehlenhard & Linton, 1987), suggesting that misperception of sexual interest and consent contribute to increasingly aggressive advances. Relatedly, there is evidence that regretted or worst hookup experiences include nonconsensual sexual experiences and that women's regret regarding hookups stems from feeling pressured or forced (Oswalt et al., 2005; Paul & Hayes, 2002).

2.10 Alcohol-Involved Hookups Increase Sexual Vulnerability

As described above, the ambiguous nature of hookups and lack of clarity in sexual consent can result in sexual victimization and other negative consequences, with alcohol use at the time contributing to these negative outcomes such as regret

(LaBrie et al., 2014; Reese-Weber et al., 2020; see Wesche et al., 2021 for a review). Consistent with the Alcohol Myopia Model, intoxication contributes to less prudent sexual decision-making (Ebel-Lam et al., 2009; Masters et al., 2014; Parkhill Purdie et al., 2011) and impairs women's recognition, interpretation, and response to sexual assault risk cues (see Melkonian & Ham, 2018 for a review). In a recent experiment, sexual risk recognition was impaired by alcohol administration, particularly for women who were high in sociosexuality, the women most likely to seek out hookups (Yeater et al., 2018). Men perceive drinking women as more sexually available (George et al., 1995) and are more likely to make unwanted sexual advances toward intoxicated women (Graham et al., 2014). Men are likely to be drinking if the woman is drinking, and men's alcohol consumption increases their perception of the female partner's sexual interest (Abbey et al., 2005; Farris et al., 2010). Alcohol may also contribute to men's use of aggressive tactics. Using data from the College Men's Study, men's intoxication at the time of sex was positively associated with use of verbal persuasion to convince the woman to have sex which in turn predicted use of physical pressure (Testa et al., 2018).

A recent EMA study of first year college women by Yeater et al. (2022) provides important evidence for the role of drinking settings and hookups in sexual assault episodes. They did not find support for the hypothesis that consuming four or more drinks increases the likelihood of experiencing sexual victimization during the same timeframe. However, both drinking with peers and perceiving peer pressure for sex did predict the occurrence of a sexual victimization event, pointing toward drinking settings contributing to victimization (see also Read et al., 2021). Sexual victimization experiences were also more likely to occur within timeframes that included regretted hookups and unprotected sex (although it is possible that some hookups were regretted because they involved victimization or unprotected sex). Results are generally consistent with our studies of college men in linking sexual assaults with hookups and drinking contexts but not with drinking per se (Cleveland et al., 2019; Testa & Cleveland, 2017).

Ford (2017) provides direct evidence that women's alcohol consumption at the time of a hookup increases the likelihood that the event includes sexual victimization. In a sample of 7481 hookups reported by college students, 2.4% of them ended in forcible or incapacitated rape. As female alcohol consumption increased, so did the likelihood of experiencing intercourse "when you didn't want to because you were drunk, passed out, asleep, drugged or incapacitated"; consumption of 9 or more drinks increased the odds of forcible rape. Knowing the hookup partner better was associated with reduced odds of rape, perhaps reflecting better communication of sexual interest and reduced misperception in these situations.

2.11 Preventing Sexual Victimization by Reducing Hookups?

The strong evidence pointing toward hookups, and particularly alcohol-involved hookups, as a risk factor for college sexual victimization led to the most recent step on my research journey. I received an R34 from NIAAA designed to develop a

sexual victimization intervention focused on sexual risk-taking (2017–2019). As described above, research was leading me to consider hookups, particularly alcohol-involved hookups, as a key link between college drinking and sexual victimization. We began the project by testing the hypothesis that hookups mediate the relationship between HED and sexual victimization in a survey of first year college women. We assessed the number of hookups, with and without alcohol, and considered these separately as mediators. When entered on its own, HED positively predicted sexual victimization. However, this effect became nonsignificant when hookups were entered into the model; the effect of HED on victimization was completely mediated via hookups with and without alcohol (Testa et al., 2019). Although a cross-sectional study, it provided important proof of concept for our model.

In the next phase of the project, we conducted a randomized controlled trial (RCT) to consider whether we could prevent sexual victimization among first year women by reducing hookups (Testa et al., 2020). The study involved a test of a deliberately very brief and easily disseminated intervention: personalized normative feedback (PNF) regarding hookups administered by computer. In the absence of normative information, entering freshmen overestimate hooking up among their peers (Barriger & Vélez-Blasini, 2013). These inflated norms may contribute to hookups, since perceived norms regarding others' sexual behaviors predict one's own risky sexual behavior (Lewis et al., 2014). Because interventions targeting social norms are an efficacious means of changing behavior (see Miller & Prentice, 2016 for a review), we hypothesized that by providing PNF revealing actual prevalence of peer hookups, we could reduce normative perceptions of the frequency of hookups. If women estimate lower hookups among their peers, they should engage in fewer hookups, resulting in fewer sexual victimization experiences over the course of the semester. We found support for this hypothesized sequential mediation model, with indirect effects of hookup PNF on victimization via perceived hookup norms and actual hookups (Testa et al., 2020). Intervention effects were equivalent for women with and without prior victimization and at varying levels of HED. Of note, HED predicted hookups, but did not predict sexual victimization when hookups were in the model. Thus, consistent with Testa et al. (2019), hookups appear to be a more direct predictor of sexual victimization than drinking, with alcohol's effects mediated via its effects on hookups. This does not mean that drinking is not a contributor to college sexual victimization, but the study provides additional evidence for a pathway from drinking to sexual activity to sexual victimization, echoing studies with college men (Cleveland et al., 2019; Testa & Cleveland, 2017).

2.12 Conclusions and Future Directions

We have come a long way in 30 years, from first recognizing the prevalence of alcohol-related sexual assault to identifying some of the pathways by which alcohol and sexual assault are linked. Research points toward two primary mechanisms by which alcohol contributes to sexual victimization. First, there are pharmacological

effects of alcohol. These contribute to use of sexually aggressive tactics by perpetrators and to impaired risk perception and responses among victims, with incapacitated rape representing extreme victim impairment. In addition, there is a second, indirect pathway by which alcohol influences sexual victimization and that is via drinking settings and drinking culture. Consistent with Routine Activities Theory (Cohen & Felson, 1979), drinking settings put victims and perpetrators together in a situation that is conducive to sexual misperception and aggression (see Read et al., 2021). Alcohol's pharmacological contributions to sexual victimization risk are nested within this drinking setting, exacerbating the environmental and cultural influences of alcohol.

As a psychologist, I have tended to view behavior and outcomes through the lens of individual risk factors, perceptions, and behaviors. A focus on individual victims and perpetrators has been quite prominent in the field, and efforts to educate and prevent sexual assault through individuals go back many years (e.g., Yeater & O'Donohue, 1999). Research and prevention efforts focused on women are sometimes criticized as "victim blaming" and putting the onus on women to alter their behavior. Sexual assault is never the victim's fault. But I believe that it is unethical not to arm women with the best information we have about how they might reduce their vulnerability. Moreover, women are probably more motivated to avoid victimization than perpetrators are to stop perpetrating, making women a more receptive audience for prevention and risk reduction efforts. There is an absence of efficacious perpetrator-focused sexual assault prevention efforts for adults (DeGue et al., 2014). There has been some success with interventions that seek to improve women's risk recognition, resistance, and assertiveness behaviors while avoiding victim blaming, although the most efficacious of these are labor intensive and difficult to scale (Senn et al., 2018). Protective behavioral strategies that women use in drinking settings may reduce sexual vulnerability associated with these contexts (Jouriles et al., 2022; Sell et al., 2016), although these have not been tested in a randomized controlled trial. I don't think we should give up on these individually focused efforts. However, given that victimization occurs within a conducive environment (i.e., party, hookup) within a larger social context (i.e., Greek system, campus culture), it is important to address the drinking environment and culture if we want to prevent sexual assault.

Consistent with this environmental, public health approach, there has been a considerable increase in research considering the impact of environmental variables as predictors of sexual assault. Studies are quite clear in showing that the drinking level of the campus community is a robust predictor of sexual perpetration (Bellis et al., 2020) and victimization rates on that campus (Daigle et al., 2020; Mohler-Kuo et al., 2004; Moylan et al., 2019; Wiersma-Mosley et al., 2017). Campuses with a high percentage of heavy drinkers have heavy drinking victims, perpetrators, and bystanders, and alcohol is probably an integral part of the social fabric (see Armstrong et al., 2006). Viewed this way, it is easy to see why focusing prevention efforts on changing individual behavior – while ignoring the community influences – is likely to fall short. Viewing sexual assault as a public health issue and not an individual problem calls for change in policy to address the environment and culture in which sexual assault occurs (see Basile, 2003; Lippy & DeGue, 2016 and McMahon et al., 2021).

Encouragingly, there is some evidence supporting a community approach to reducing alcohol consumption and negative consequences on campus. Randomized controlled trials of environmental alcohol policy interventions have shown reductions in intoxication (Saltz et al., 2010) and severe alcohol consequences (Wolfson et al., 2012) on intervention compared with control campuses. Stricter campus alcohol policy (e.g., enforcement of the legal drinking age, prohibiting alcohol at sports events) is associated with lower rates of heavy drinking on that campus (Marzell et al., 2015; Nelson et al., 2010; Toomey et al., 2013) and also with lower rates of sexual victimization within that community (Cameron & Wollschleger, 2021; Lippy & DeGue, 2016; Marzell et al., 2015). Universities have the power to enact policies around alcohol and other aspects of the campus environment (e.g., the prominence of fraternities; Wiersma-Mosley et al., 2017) that can reduce sexual victimization and improve many other student health outcomes as well.

The Covid-19 pandemic, which is raging as I write this, provides an apt analogy for thinking about individual risk as nested within community-level risk. An individual can try to avoid being infected by maintaining social distance and wearing a mask, individual strategies analogous to limiting drinks and going to a party with a friend as ways of avoiding sexual victimization. However, an individual's risk of infection is a function of not just personal behavior. Rather, it is heavily dependent upon the number of and behaviors of infected people in the immediate social environment (i.e., workplace, social gathering) and in the community at large. When infection rates in the environment are high, individual risk mitigation strategies may be insufficient to prevent infection. On the other hand, when Covid-19 is virtually absent from the environment, individual risk mitigation strategies are no longer necessary to prevent infection. Sexual victimization can be viewed in a very similar way: an individual's vulnerability reflects the risk associated with her immediate environment (i.e., party, hookup) and that of the larger community (i.e., campus). Individual risk reduction strategies can help; however, if we can reduce risk in the environment to near zero, we can finally throw those masks away and proceed without fear.

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Chapter 3
Integrated Alcohol and Sexual Assault Prevention for Military Service Members: Conceptual Rationale and Program Models

Lindsay M. Orchowski

3.1 Introduction

Sexual violence – which includes experiences of sexual harassment, unwanted sexual contact, sexual coercion, and rape (Basile et al., 2014) – is a significant public health problem within the United States (Smith et al., 2018). The experience of sexual violence has wide-ranging psychological, health, and economic consequences for individuals (Rees et al., 2011; Martin et al., 2011). In fact, according to the 2011 US National Intimate Partner Sexual Violence Survey, the cost of rape is estimated to be $122,461 per victim, resulting in a population economic burden of 3.1 trillion US dollars (Peterson et al., 2017).

Attention to the prevalence and consequences of sexual violence among members of the US military has increased over the past 10 years (for reviews, see Bell et al., 2018; Castro et al., 2015; Lofgreen et al., 2017; Mondragon et al., 2015; Suris & Lind, 2008; Wood & Toppelberg, 2017). This focus is warranted, given data suggesting that 55% veteran women report sexual harassment during military service (Skinner et al., 2000), 54% of veteran women report some form of unwanted sexual contact during military service (Sadler et al., 2001), and 62% of veteran women report experiences of sexual assault at some point in their lives (Booth et al., 2011). A more recent survey conducted by RAND Corporation National Defense Research Institute (2014) among 560,000 US service members indicated that 4.9% of women and 1% of men serving in active duty experienced a prior year sexual assault. There is evidence that rates of sexual victimization among women in the military are comparable to (Black & Merrick, 2013) or higher than rates among civilian women (Bostock & Daley, 2007; Sadler et al., 2003; Schultz et al., 2006).

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Whereas some risk and protective factors for sexual violence are similar for civilian and military populations, there are several unique aspects of military culture and the military environment that contribute to sexual violence among service members (Castro et al., 2015; Stander & Thomsen, 2016; Turchik & Wilson, 2010). First is the culture of military masculinity which prioritizes physical violence, subordination to others, and dominance (Belkin, 2012; Brown, 2012; Connell, 1985; Hinojosa, 2010; Hooper, 1999; Kurpius, & Lucart, 2000). As Connell (2005) notes, "violence on the largest possible scale is the purpose of the military; and no arena has been more important for the definition of hegemonic masculinity in European/American culture" (p. 213). The importance of hegemonic masculinity within military culture is particularly relevant for understanding the root causes of military sexual violence, given the strong association between adherence to traditional gender role ideology and sexual aggression in civilian populations (Murnen et al., 2002; Tharp et al., 2013). The culture of military masculinity is also rooted in power differentials between men and women in the military. For many years, women in the US military were restricted from participating in specific positions that led to promotion, including combat roles (see Katz, 1992). The emphasis on traditional masculinity in the military also communicates that women are of lesser value than men within military service (Vogt et al., 2007), which serves to justify the harassment and mistreatment of women (Barkalow & Raab, 1990; Katz et al., 2007).

As discussed by Castro et al. (2015), other aspects of military culture create an environment conducive to sexual violence. For example, because military culture values mission accomplishment and performance, leaders may dismiss allegations of sexual violence when the complainant is a low performer, or when the alleged assailant is a top performer. As a result, perpetrators of sexual aggression may deliberately target service members who they believe will not be taken seriously if they reported an assault. Military culture also values resolving conflicts "at the lowest possible level" (Castro et al., 2015; p. 5). As a result, experiences of harassment or assault may not be reported to the chain of command, especially if the harasser/assailant is senior in rank. Because leaders are also held accountable for establishing a safe environment for their unit, leaders also may "dismiss the allegations as unfounded, or convince the service member who has been harassed or assaulted not to formally report the incident" if they fear they will be held responsible for allowing an environment conducive to sexual violence to exist within their unit (Castro et al., 2015, p. 6). Finally, as noted by Castro et al. (2015), to prepare for combat, male and female service members are taught to engage in objectification. Further, aggression is a long-standing and normalized component of combat (Hunter, 2007; Neill, 2000). Whereas objectification may support mission readiness, the capacity to act with diminished empathy can also be misdirected toward other service members and may facilitate sexually aggressive behavior among individuals who feel entitled to sexual activity (Hunter, 2007). Notably, feeling entitled to sexual activity is associated with sexual aggression (Bouffard, 2010) and mediates the association between adherence to traditional masculine norms and rape-related attitudes and behaviors (Hill & Fischer, 2001).

Rates of trauma in childhood and adolescence are also higher among service members compared to civilians (Turchik & Wilson, 2010; Zinzow et al., 2007). For example, Bostock and Daley's (2007) examination of 2018 active duty US Air Force women indicated that most initial experiences of rape (75%) as well as most of the most recent experiences of rape (56%) occurred when the service member was a civilian. Prior victimization is a well-documented predictor of subsequent victimization among service members (Suris & Lind, 2008), and it is believed that the emotional and behavioral consequences of trauma serve to increase risk for subsequent victimization (Jaffe et al., 2019). Alarmingly, women who experience sexual victimization before military service are two to five times more likely to experience revictimization during their time in service (Merrill et al., 1999; Salder et al., 2003).

At the outer layers of the social ecology, perceived acceptance of violence at the organizational level, environmental factors, and military policies also contribute to sexual violence in the military. At an organizational level, the perception that command will not hold perpetrators of sexual violence accountable for the crime (Pershing, 2003) or that victims who report will be met with social or professional retaliation (Campbell & Raja, 1999) dissuades victims from reporting and communicates to perpetrators that they will not be held accountable for sexual violence (see Groves, 2013). Data from the 2005 Service Academy Sexual Assault Survey of Cadets and Midshipmen found that both male and female cadets and midshipmen who experienced sexual victimization had negative views about the leadership's tolerance of sexual violence. Importantly, as reported by Sadler et al. (2017), lower rates of sexual assault are reported in units where leadership is perceived to take the issue of sexual assault seriously, demonstrates a zero tolerance stance toward sexual harassment, and indicates support for service members who seek psychological care. Environmental factors – such as the frequent movement of military personnel across units and the proximity between service members within coed dormitories and barracks (see Sadler et al., 2003) – can also make it easy for perpetrators to opportunistically target service members who they believe would be unlikely to report an assault because they are either new to the unit or are preparing to leave the unit. Policies that make it difficult to report sexual violence – such as polices regarding collateral misconduct at military service academies (see Brubaker, 2009) – also foster continued violence by limiting organizational capacity to hold perpetrators accountable for their actions.

3.1.1 Purpose of the Current Chapter

The high rates of sexual violence among US military service members underscore the importance of the development of comprehensive sexual assault prevention and response efforts which attend to the unique ways that military culture cultivates violence. Whereas sexual assault prevention programs for military service members are growing, the scientific evaluation of these efforts is lacking in comparison to the scientific evaluation of sexual assault prevention programs for

civilians (Gidycz et al., 2018). Efforts to advance the science of sexual assault prevention and response for the military also remain relatively siloed from other efforts to advance the health and resiliency of service members. Arguably, to have a wider-population impact, it is necessary for prevention efforts to target mechanisms that have the capacity for fostering synergistic change in multiple health outcomes (Armstead et al., 2017).

Accordingly, the present chapter advances the science and practice of sexual assault prevention efforts for military service members by developing a rationale for integrated alcohol use and sexual assault prevention for service members. In this chapter, integrated alcohol use and sexual assault prevention approaches are operationalized as interventions that include *active alcohol use intervention* administered in combination with sexual assault prevention strategies. Toward this goal, the current chapter will first provide descriptive information on the context of sexual violence in the US military, including the prevalence of assaults among women and men, the characteristics of assaults, consequences of violence, as well as processes of disclosure, help-seeking, and reporting. Next, the chapter outlines the current science and practice of sexual assault prevention in the military, beginning with the prevention approach of the Department of Defense and ending with a review of the state of prevention science. Next, the chapter articulates the rationale for integrated alcohol and sexual assault prevention, by reviewing the rationale for addressing cross-cutting mechanisms for sexual violence and other health outcomes in prevention, as well as the scope of alcohol use in the military. Further, the chapter reviews how prevention can target various ways that alcohol use serves as a risk factor for sexual aggression, risk factor for sexual victimization, and complicating factor in bystander intervention. The chapter concludes by reviewing progress toward developing integrated alcohol use and sexual assault prevention approaches for civilian populations and exploring how these models have been adapted or developed for military populations.

3.2 The Scope of Sexual Assault Among Service Members

3.2.1 Prevalence of Sexual Violence

Sexual violence impacts all service members, regardless of gender identity. A meta-analysis of 59 studies revealed that 15.7% of military personnel and veterans indicate experiencing sexual victimization during military service, including 2.9% of men and 38.4% of women (Wilson, 2016). According to a different meta-analysis of 29 studies conducted by Hoyt et al. (2011), rates of sexual victimization at any point during military service among men range between 0.03% and 12.4% across studies. According to Hoyt et al.'s (2011) analysis of rates of military sexual trauma among men across 29 studies, experiences of sexual victimization were reported by approximately 0.09% of male service members over a year. It is important to note that the

prevalence of sexual victimization during military service varies depending upon the survey sample, as well as the definition of sexual victimization utilized.

The Workplace and Gender Relations Survey of Active Duty Members is administered every 2 years across the entire active duty force (see Rock et al., 2011). The consistent administration of the survey makes it an important source of information for understanding potential changes in the rate of sexual victimization among service members over time. For example, as reported by the Defense Manpower Data Center (2012) survey note of the 2012 Workplace and Gender Relations Survey of Active Duty Military, the rates of unwanted sexual contact (which included attempted or completed sexual intercourse, as well as unwanted touching of the genitals or other sexually related parts of the body) indicated by women and men service members were 6.8% and 1.8% in 2006, 4.4% and 0.9% in 2010, and 6.1% and 1.2% in 2012, respectively. Analysis of the 2018 Workplace and Gender Relations Survey of Active Duty Members reported by the Office of People Analytics (2019) reports similar findings, finding that 6.2% of active duty women and 0.7% of active duty men experienced sexual assault in the past year. Data from the 2019 Workplace and Gender Relations Survey of Reserve Component reported in the Department of Defense Fiscal Year 2019 Annual Report on Sexual Assault in the Military also suggests that the prevalence of sexual victimization for the Reserve Component has remained the same since 2017 (Department of Defense, 2020; p. 21). Whereas the Workplace and Gender Relations Survey is conducted on behalf of the Department of Defense Sexual Assault Prevention and Response Office (SAPRO), studies administered by nongovernment contractors report similar findings. For example, data from the RAND Military Workplace Study (RMWS) among nearly 150,000 service members documented that 1 in 20 female and fewer than 1 in 100 male service members experienced past year sexual assault (Jaycox et al., 2014).

The past 10 years has also witnessed increasing attention to the needs of men who experience sexual victimization during military service (Matthews et al., 2018). There is some data to suggest that the context of sexual victimization varies among male and female service members. Notably, the Department of Defense Annual Report on Sexual Assault in the Military for Fiscal Year 2018 notes that "26 percent of men who indicated experiencing sexual assault said the offense involved hazing, and 31 percent said it involved bullying. In comparison, 11 percent of women indicated their offense involved hazing, and 18 percent said it involved bullying" (Department of Defense, 2019a; p. 11). In addition, whereas women service members identify that the perpetrator of the assault was male (92%), approximately 52% of men report the perpetrator as male, and 13% indicate that the assault was perpetrated by men and women who acted together (Department of Defense, 2019a; p. 10–11). Male service members also face gender-specific barriers in accessing social support and healthcare resources following victimization. For example, qualitative analyses among 18 male veterans who experienced military sexual trauma indicated that men often struggle with intimacy and have relationship difficulties following the experience and receive numerous negative social reactions when disclosing their experience to others (Monteith et al., 2019). Interviews with Midwestern

Active Component and Reserve and National Guard servicemen, actively serving or veteran, who had returned from Iraq or Afghanistan deployments during Operation Enduring/Iraqi Freedom eras also suggest that men generally lack awareness of the occurrence of sexual assault among other men in the military and tend to hold blame and stigma toward men who experience sexual violence (Sadler et al., 2021). As Morris et al. (2014) discuss, there is a need for increased research and clinical attention to the medical and psychiatric needs of men following experiences of military sexual trauma.

3.2.2 Characteristics of Sexual Assaults

Living and working in close proximity to other service members is believed to be a risk factor for sexual harassment and assault in the military. Sexual violence involving active duty service members generally occurs in a military setting (Morral et al., 2014). According to the 2018 Workplace and Gender Relations Survey of Active Duty Members, 62% of women and 57% of men indicated that an experience of sexual assault occurred at a military installation or on a military ship (Office of People Analytics, 2019; p. vii). Further, as evidenced by Sadler et al.' (2003) analysis of women veterans who experienced rape during military service, 51.7% of women were assaulted in the barracks, and 81.9% were assaulted while off duty.

As revealed in data from the 2018 Workplace and Gender Relations Survey of Active Duty Members, "sexual assault in the military occurs most often between junior enlisted acquaintances who are peers or near peers in rank" (Department of Defense, 2019a; p. 4). Earlier data reported by Sadler et al. (2003) also documented that 53.3% of rape victims described the perpetrator as a peer or same/similar rank. Like studies of college students (Cantor et al., 2019), perpetrators of sexual aggression tend to be identified as a "friend or an acquaintance, acting along" (Department of Defense, 2019a, p. 4). According to a national cross-sectional survey of women veterans, only 5% reported an experience of gang rape during military service (Sadler et al., 2005). Other studies indicate that most assaults experienced during military service are perpetrated by another service member, rather than a civilian (Campbell & Raja, 2005; Morral et al., 2014). Regardless of the gender of the victim, service members who experience sexual aggression most commonly identify the perpetrator as male (Department of Defense, 2019a).

Alcohol is also often involved in sexual violence among service members. As reported by Sadler et al. (2003), 26.8% of women who experienced rape while in military service reported consuming alcohol/drugs at the time of the assault, and 52.5% experienced an assault perpetrated by someone who was under the influence of alcohol/drugs at the time of the assault. These data mirror those reported by the Office of People Analytics (2019) overview report of the 2018 Workplace Gender Relations Assessment, which indicated that alcohol was involved in sexual assault among 62% of women who reported victimization and among 49% of men who reported victimization (p. vii).

3.2.3 Consequences of Sexual Violence

The consequences of sexual violence among military service members include a range of individual psychological and health aftereffects (Street & Stafford, 2002). As reported by Zinzow et al. (2008), women veterans with a history of sexual victimization demonstrate greater psychological impairment in comparison to those reporting other forms of trauma. The effects of sexual victimization in the military are also exacerbated when individuals report victimization at other times during the lifespan (Creech & Orchowski, 2016; Suris et al., 2007).

There is a strong association between sexual victimization during military service and the severity of post-traumatic stress disorder (PTSD; Maguen et al., 2012; Schry et al., 2015; Rosellini et al., 2017a; Sexton et al., 2017). For example, in a sample of women veterans seeking primary care at the VA, Creech and Orchowski (2016) found that PTSD symptoms were positively associated with the number of time periods a woman experienced sexual victimization via force (i.e., childhood, adult premilitary, during military service, after military service), as well as the total number of lifetime experiences of sexual victimization via force. Notably, sexual victimization during military service is also associated with greater PTSD risk compared to victimization at other times in the lifespan (Suris et al., 2004).

Experiencing sexual victimization during military service is also associated with heavy drinking as well as alcohol problems (Fillo et al., 2018; Seelig et al., 2017). Importantly, numerous studies indicate a positive association between alcohol use and PTSD among service members (Davis et al., 2003; Kelley et al., 2013; Maguen et al., 2010, 2012). A study of OEF/OIF veterans found that while combat exposure in and of itself did not increase the risk for alcohol misuse, PTSD symptoms and depression doubled the risk for alcohol misuse (Jakupcak et al., 2010). The self-medication hypothesis posits that individuals use alcohol following sexual victimization to alleviate the negative psychological effects of the trauma (Khantzian, 1997), and studies of military veterans indicate that service members report self-medicating with alcohol to cope with PTSD symptoms (Bremner et al., 1996). Other explanations of the positive association between alcohol use and PTSD have also been proposed, including the negative reinforcement model (Baker et al., 2004), the mutual maintenance model (Kaysen et al., 2011), and the high-risk susceptibility hypothesis (Chilcoat & Breslau, 1998).

Individuals who experience sexual victimization during military service also report other psychological aftereffects, including depression (Maguen et al., 2012; Schry et al., 2015; Sexton et al., 2017), as well as suicidal ideation and suicide mortality (Blais & Monteith, 2018; Kimerling et al., 2016). For example, analysis of Army STARRS data suggests that women who experience a sexual assault during active duty service have increased odds of attempted suicide (Rosellini et al., 2017a).

Sexual victimization during military service is also associated with several physiological consequences. According to Sadler et al.'s (2000) analysis of a cross-sectional telephone survey of 558 women veterans, women who reported experiences of rape during military service were more likely to report chronic health problems,

as well as use of prescription medicine for psychological concerns. Other health concerns reported by survivors of sexual victimization during military service include gynecological symptoms leading to hysterectomy (Ryan et al., 2016), as well as the occurrence of eating disorders (Breland et al., 2018).

In addition to psychological, health, and occupational concerns, some researchers are also now examining the extent to which sexual victimization among service members leads to moral injury (Stein et al., 2012). When sexual violence occurs in the context of one's workplace or community, individuals can also experience institutional betrayal, feeling like the organization/institution meant to protect them failed in their responsibility (Smith & Freyd, 2013, 2014). Thus, because sexual victimization during military service often involves betrayal by other service members as well as military leadership, a growing number of studies document experiences of institutional betrayal among service members who experience sexual victimization (Andresen et al., 2019; Holliday & Monteith, 2019; Monteith et al., 2016, 2021).

3.2.4 Disclosure, Help-Seeking, and Reporting

Relatively few studies have examined the process of disclosing experiences of sexual victimization that occur during military service. According to qualitative research among 20 women veterans conducted by Dardis et al. (2018), which included a sample of women who disclosed experiences of military sexual victimization, 87% told informal sources (i.e., family or friends), 70% told military personnel, and 52% told medical personnel. Further, although many veterans are screened for experiences of sexual victimization during military service, 25% of veterans report not disclosing their true status as experiencing sexual victimization during service (Blais et al., 2018). Importantly, when disclosing experiences of sexual victimization during military service, 50% of women report experiencing at least one negative reaction from others, including retaliation. The negative impact of unhelpful reactions to sexual assault disclosure among civilians is well documented (Dworkin et al., 2019), and emerging research with men who experience sexual victimization during military service also highlight the negative impact of unhelpful responses to disclosure on the process of recovery (Monteith et al., 2019).

The Department of Defense allows for restricted reporting, which provides for confidential reporting without the triggering of an investigation, as well as unrestricted reporting, which facilitates the opening of a criminal investigation. Studies of servicewomen experiencing sexual assault while in the military suggest that approximately 25% formally report the experience (Mengeling et al., 2014). Further, the 2018 Department of Defense Annual Report on Sexual Assault in the Military notes that "in Fiscal Year 2018, 6053 Service members made a report of sexual assault for an incident that occurred during military service, which equates to about a 30 percent reporting rate" (Department of Defense, 2019a, p. 4).

There are numerous reasons why most assaults among service members go unreported. According to Sadler et al. (2005), barriers to reporting sexual victimization during military service include lack of knowledge on how to report (33%), the belief that rape was to be expected during military service (19%), the individual who would take the report was the perpetrator of the assault (25%) or a friend of the perpetrator (33%), feelings of shame about reporting (77%), worry that reporting would have a negative career impact (78%), the belief that reporting would not lead to anything beneficial being done (70%), fear of being blamed for the assault (60%), and worry that reporting would make things worse (79%). There is also a strong emphasis on psychological resiliency among military service members (Meredith et al., 2011), as well as maintenance of unit cohesion (Siebold, 2007). As a result, individuals who experience sexual violence during military service may be reluctant to bring reports of sexual violence forward, believing that seeking help to cope with stress is a sign of weakness (Hoge et al., 2004) or that doing so would betray their unit (Burns et al., 2014). Notably, despite these barriers, there is evidence that reports of sexual victimization have increased over time. Specifically, "the number of reported sexual assaults involving military service members more than doubled from about 2800 reports in fiscal year 2007 to about 6100 reports in fiscal year 2014" (Government Accountability Office, 2015, p. 1). Whereas sexual violence undoubtedly remains underreported, the increase in reporting may reflect greater confidence in the Department of Defense's ability to respond to the needs of victims.

Problematically, rates of help-seeking are relatively low among service members who experience sexual victimization. For example, research among women veterans suggested that following experiences of rape during military service, approximately one-third of women reported seeking medical attention, and one-fifth reported seeking psychological support (Sadler et al., 2005). Further, research by Zinzow et al. (2008) found that only 38% of military personnel with a history of sexual victimization seen within a VA primary care setting sought psychological care in the past year (Zinzow et al., 2008). Help-seeking among male service members following sexual victimization may be even less common. For example, in one study reported by Burgess et al. (2016), none of the men who experienced sexual victimization during military service sought emotional support from a counselor or therapist, in comparison to 53% of women service members who experienced sexual victimization.

3.3 Science and Practice of Sexual Assault Prevention Within the Military

3.3.1 Sexual Assault Prevention Strategy

Several publications put forward by the US Department of Defense document strategies to protect the readiness of the force through prevention of sexual violence among service members and timely victim's assistance and advocacy. For example,

in the Fiscal Year 2008 Department of Defense Report on Sexual Assault in the Military, Secretary of Defense Robert Gates identifies four priorities for advancing sexual assault prevention and response, including (1) reducing the stigma surrounding reporting sexual assault, (2) ensuring commander training and accountability, (3) ensuring investigator training, and resourcing, and (4) ensuring prosecutor training (Department of Defense, 2008, p. 29–30). Over time, the scope of recommendations for advancing military sexual assault prevention and efforts has grown. For example, the *Department of Defense 2019–2023 Prevention Plan of Action (PPoA)* highlights the importance of advancing military sexual violence through investing in the engagement of leadership, development of the prevention workforce, enhancing collaborative relationships with experts in the field, prevention-specific policy, development of data systems to ensure institutional accountability, strengthening of prevention-related policy, implementation of a comprehensive prevention approach, and commitment to quality implementation and outcome evaluation (Department of Defense, 2019b).

3.3.2 State of Prevention Science

Despite over a decade of guidance guiding Department of Defense sexual assault prevention efforts, there are relatively few rigorous evaluations of sexual assault prevention programs specific to military populations (Gedney et al., 2018; Gidycz et al., 2018; Orchowski et al., 2018a). For example, a 2018 systematic review completed by Orchowski and her colleagues (2018a) documented only six published outcome studies of sexual assault prevention programs for service members. There are also gaps in the understanding of rigor of existing program evaluations of sexual assault prevention programs for military personnel. When Orchowski et al. (2018a) as well as Gidycz et al. (2018) published their reviews, no existing studies of sexual assault prevention on military posts had assessed whether the program was associated with decreases in rates of either sexual victimization or sexual victimization among program participants. More recently, Griffin et al.' (2021) evaluation of the Cadet Personal Skills (CHIPS) program among cadets at the US Air Force Academy documented that the program was associated with decreases in unwanted sexual contact in comparison to the control group.

Whereas the reasons why scientific evaluations of sexual assault prevention programs for service members lack assessments of sexual violence outcomes among participants are unclear, advancing the science of sexual assault prevention for military service members will require that evaluations include robust assessments of behavioral outcomes (see Gidycz et al., 2011a, b). To ensure that participants can report sensitive information honestly, without fear of the information being linked to their identity in any way, researchers completing evaluations of sexual assault prevention programs for college students have utilized self-generated codes to match anonymous participant surveys across pre- and posttest assessments (Orchowski et al., 2008; Gidycz et al., 2011a). Similar approaches can also be

implemented when evaluating the efficacy of sexual assault prevention approaches for military populations.

The types of sexual assault prevention efforts that have sustained evaluation for service members are wide-ranging and include individual-level interventions, efforts to engage bystanders in changing community norms, as well as social marketing campaigns. For example, one sexual assault prevention program for male service members was tested among men at a US military installation in Germany (Foubert & Masin, 2012). The intervention includes a workshop for men, which addresses rape myths and aims to foster empathy. Because a pre- and posttest designs were utilized (with no follow-up period), no data are available as to whether the program decreased rates of sexual aggression among participants. The Sexual Assault Victim Intervention (SAVI) program has also been evaluated among US service members (Kelley et al., 2005). SAVI includes 3 h of prevention training and 3 hours of content focused on advocacy; however, there are no data available as to whether the program impacts rates of sexual violence among service members. The Bringing in the Bystander program has also sustained evaluation among US Army Europe (USAREUR) personnel (Potter & Moynihan, 2011). Compared to the control group, soldiers who participated in the program were more likely to engage bystander action when faced with situations that posed a risk for sexual violence (Potter & Moynihan, 2011). Finally, a social marketing campaign entitled Know Your Power has also sustained evaluation among service members at USAREUR posts (Potter & Stapleton, 2012). Findings indicated that USAREUR soldiers who were exposed to the campaign were more likely to intervene to address risky sexual assault situations compared to those who were not exposed to the images (Potter & Stapleton, 2012).

To date, one study has examined the preliminary efficacy of resistance training (i.e., self-defense) for women veterans with a history of PTSD and military sexual trauma. Specifically, in a small-scale pilot study to evaluate Taking Charge (David et al., 2006), women demonstrated significant reductions in PTSD and depression, as well as increases in self-defense self-efficacy at posttest. This research is notable considering research in civilian samples suggesting that unwanted sexual and social advances most often stop because of women's verbal and physical resistance, but few advances stopped because of bystander intervention (Orchowski et al., 2021). Although no published evaluations of risk reduction and resistance education training for military service members exist, sexual assault risk reduction and resistance education interventions with civilian populations document reductions in rates of sexual victimization over short-term (Orchowski et al., 2008) as well as longer-term follow-up periods (Senn et al., 2015, 2017).

Research on the efficacy of sexual assault prevention approaches for young adults within US military academies is also limited (Rosenstein et al., 2018). As noted earlier, a recent publication documents the efficacy of the Cadet Personal Skills (CHIPS) program among cadets at the US Air Force Academy, which is a curriculum designed to change social norms and bystander intervention behavior to address sexual violence, increase knowledge and skills relating to sexual consent, educate cadets on the association between alcohol use and sexual

assault, increase interpersonal skills, and foster self-regulation (Griffin et al., 2021). The 7.5-h intervention is administered in groups of 15–20 cadets. As documented by Griffin et al. (2021), at posttest intervention participants were less likely to report unwanted sexual contact in comparison to the control group, after accounting for baseline unwanted sexual contact, alcohol use, and gender. The assessment was limited, however, by not including an assessment of whether the program also reduced perpetration of sexual aggression among program participants. Thus, while military service academies are active in developing and implementing sexual assault prevention approaches (see Caslen et al., 2015), additional research which incorporates assessments of behavioral outcomes is urgently warranted.

3.4 Envisioning Integrated Alcohol and Sexual Assault Prevention Approaches for the Military

The current chapter operationalizes integrated alcohol use and sexual assault prevention as interventions that include active intervention components addressing alcohol use, as well as active strategies for sexual assault prevention. To be considered an integrated intervention for alcohol use and sexual assault, the intervention must address both health concerns in a manner that recognizes the *intersection* between alcohol use and sexual assault. Through this lens, offering two standalone interventions – one addressing alcohol use and one addressing violence – would not be considered an integrated intervention, as such an approach fails to address the intersections between alcohol use and violence.

Whereas alcohol use and sexual assault are recognized among civilian and military populations as critical public health issues, sexual assault prevention and response programs often fail to recognize how alcohol use and sexual violence intersect (i.e., Lund & Thomas, 2015). Some sexual assault prevention programs do indeed include *some mention* of the role of alcohol as a risk factor for violence (i.e., through the incorporation of content, or scenarios that depict alcohol-related victimization). However, such information alone – without incorporation of alcohol use intervention – is likely to be insufficient to foster robust change in personal alcohol use patterns. As will be reviewed below, there are few sexual assault prevention approaches which include *active alcohol intervention*, or *active alcohol use prevention* strategies (see Orchowski et al., 2017, 2018b; Gilmore et al., 2015, 2018a, b; Creech et al., 2021).

Integrated alcohol and sexual assault prevention approaches have the potential to attend to multiple risk and protective factors across the social ecology. As discussed in the Centers for Disease Control and Prevention's *Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence,* there are numerous risk and protective factors across the individual, interpersonal, community, and societal

levels of the social ecology that can be targeted as a part of efforts to reduce sexual violence (Wilkins et al., 2014). An integrated approach to alcohol intervention and sexual assault prevention can also be universal, selective, or indicated in nature. While all types of prevention are necessary for preventing the occurrence of sexual harassment and assault, true primary prevention of sexual violence requires population-based strategies which foster environmental, systems-level, and policy-based changes and actions that "get to the left of violence" and stop it from initially occurring (Wilkins et al., 2018). A recent publication of the Division of Violence Prevention at the Centers for Disease Control and Prevention (2016) highlights the importance of developing intervention approaches with the potential for cross-cutting impact on multiple health outcomes. Further, public health strategies for violence prevention are shifting toward addressing risk and protective factors at the community and societal levels of the social ecology, which are likely to have a synergistic and broad-scale impact preventing multiple types of violence simultaneously (Armstead et al., 2017).

A case for integrated alcohol use and sexual assault prevention can be made when recognizing that rigid adherence to traditional gender role norms is a social-level factor that intersects with problematic alcohol use (Iwamoto et al., 2011; Mullen et al., 2007; Wilkinson & Wilkinson, 2020) as well as sexual aggression (Armstead et al., 2018; Tharp et al., 2013). There are also numerous ways that alcohol use and violence intersect in some constructions of masculinity, such that alcohol-related violence is conceptualized among some men to demonstrate dominance and control in relationships with women (Peralta et al., 2010). Given the disproportionate representation of women in the US military (Patten & Parker, 2011) and historical emphasis on traditional masculine norms within the military, prevention approaches that target the ways in which adherence to traditional masculine norms intersects with health outcomes may be especially relevant for military populations.

Problematic alcohol use is also a concern in and of itself within the military. In an analysis of survey data collected by the Centers for Disease Control and Prevention from over 27,000 individuals across 25 different industries, the Delphi Behavioral Health Group found that military service members consumed alcohol an average of 130 days per year, ranking the military as the professional with the highest rate of alcohol use in the United States (Delphi Behavioral Health Group, 2021). Survey data suggest that the prevalence of heavy drinking among military service members from 1980 to 2005 was estimated to be 15 to 20% (Bray & Hourani, 2007). Young adults in military service are also more likely than their same-age civilian peers to engage in heavy alcohol use (Ames & Cunradi, 2004). For these reasons, alcohol is an important health outcome to address in military populations. As articulated in the sections that follow, alcohol use is also an important risk factor for sexual aggression and sexual victimization and a complicating factor in bystander intervention, which has important implications for prevention.

3.4.1 Alcohol Use and Sexual Aggression

Research among civilian and military samples suggests that alcohol use is positively associated with sexual aggression perpetration. For example, sexually aggressive men report greater daily alcohol use (Borowsky et al., 1997), heavy drinking (Neal & Fromme, 2007), and alcohol problems (Abbey et al., 2006) compared to non-sexually aggressive men. Further, data from the Historical Administrative Data System of the Army STARRS indicates that severe emotional-substance problems precede perpetration of nonfamily sexual assault among service members (Rosellini et al., 2017b). This is not to say that men who perpetrate sexual aggression are under the influence of alcohol each time they perpetrate. Rather, research by Parkhill and Abbey (2008) examining a sample of civilian men found that 47.8% perpetrated only when sober, 26.8% perpetrated only when drinking, and 25.4% perpetrated both when sober and when drinking alcohol. Thus, the way in which alcohol intersects with sexual aggression is multifaceted and may be related to a complex interplay of individual, interpersonal, and situational drivers.

The Integrated Model of Sexual Assault is a multicomponent model of sexual aggression which highlights individual, interpersonal, situational/environmental, and community influences as important considerations on men's proclivity to perpetrate sexual aggression (Berkowitz, 1994, 2003). As discussed by Berkowitz (2003), a perpetrator's attitudes, early experiences, and perception of peer norms interact to facilitate sexual aggression, where situational or environmental drivers – *such as alcohol use* – can serve as "releasers" for the expression of sexual aggression. The Integrated Model of Sexual Assault also places a high emphasis on the role of misperceptions of peer support for sexual aggression (Lynch et al., 2004; Bohner et al., 2006; Dardis et al., 2016), which foster engagement in sexual aggression by pressuring men to engage in coercive behavior and inhibiting bystander intervention by suppressing men's discomfort with other men's inappropriate behavior (Berkowitz, 2003). Given the high emphasis on perceived norms embedded within the theoretical framework of the Integrated Model of Sexual Assault, sexual assault prevention programs grounded in the approach often include the provision of normative feedback (Gidycz et al., 2011a, b), an intervention approach which is also common in alcohol intervention (Larimer & Cronce, 2007; Scott-Sheldon et al., 2014).

Alcohol increases risk for sexual aggression in several potential ways. First, the myopic and psychological effects of alcohol (Steele & Josephs, 1990) interact with personal beliefs and situational factors to facilitate sexual aggression. Specifically, drinking decreases an individual's ability to appraise cues in their environment (Sayette, 1993), reduces the capacity to make decisions (Curtin & Fairchild, 2003), and lowers levels and individuals' overall level of tension and anxiety (Greeley & Oei, 1999). These myopic cognitive effects and disinhibiting psychological effects can increase proclivity for sexual aggression by increasing the likelihood that an individual fails to attend to or disregards a partner's refusal of sexual activity (Abbey et al. 2004). Notably, there is strong research to document that when intoxicated,

individuals are apt to misinterpret signs of sexual interest (George & Stoner, 2000; Parkhill & Abbey, 2008), which is positively associated with perpetration of sexual aggression (Bridges & McGrail, 1989; Muehlenhard & Linton, 1987). An individual's expectancies or beliefs about how alcohol use will influence their behavior (Goldman et al., 1999) are also relevant to sexual aggression. Specifically, individuals who believe that alcohol use increases sexuality, aggression, and liquid courage may consume alcohol, intentionally or unintentionally, to facilitate engaging in uninhibited or aggressive behavior (George & Stoner, 2000; Tedor et al., 2018). Misperceptions regarding peer approval for aggression when intoxicated may serve to normalize sexually aggressive behavior or foster a sense that they can mitigate culpability for acting aggressively by "blaming it on the alcohol" (Hochstetler et al., 2014). Shared associations between alcohol use and other personality factors which are associated with rape proclivity may also contribute to the association between alcohol use and sexual aggression (Abbey, 2008). For example, individuals with antisocial traits or high levels of impulsivity are likely to consume alcohol as well as engage in sexual aggression (Lansford et al., 2003; Moffitt et al., 2002). Taken together, these studies highlight the importance of addressing alcohol use as one part of a constellation of factors that increase risk for sexual aggression. Given that alcohol use is one of the many risk factors for sexual aggression suggests that stand-alone alcohol intervention may be insufficient to reduce proclivity for sexual aggression. Sexual assault prevention programs that fail to include active alcohol intervention may also be lacking attention to the range of influences that increase proclivity to rape.

3.4.2 Alcohol Use and Sexual Victimization

Numerous studies also document a positive association between alcohol use and sexual victimization (see other chapters in this volume for further discussion). Studies of civilians as well as military samples suggest that women who report sexual victimization are more likely than non-victimized women to report heavy drinking and alcohol problems (Benson et al., 2007; Booth et al., 2011; Merrill et al., 1999; Windle, 1994). As Farris and Hepner (2014) report, rates of heavy alcohol use are positively associated with rates of sexual victimization across branches of the military. Individuals who experience sexual assault are likely to abuse alcohol to mitigate post-assault distress (Kaysen et al., 2006; Miranda et al., 2002; Ullman & Najdowski, 2009; Ullman et al., 2006), which increases risk for revictimization (Messman-Moore et al., 2009; Testa et al., 2000). One prospective study of civilians documented that women with a history of sexual victimization who reported heavy drinking habits were ten times more likely to experience revictimization compared to women with a history of victimization who identified as light or nondrinkers (Gidycz et al., 2007). These data underscore the importance of reducing the role of alcohol use as a potential risk for sexual victimization and revictimization.

There are ways in which alcohol increases risk for sexual victimization. Alcohol consumption interferes with the ability to evaluate high-risk situations (Fromme et al., 1999), including those that pose a risk for sexual assault (Testa et al., 2000). Numerous studies suggest that alcohol use makes it difficult for an individual to recognize that a situation poses a risk for victimization (Abbey et al., 2003; Abbey et al., 2006; Davis et al., 2004; Davis et al., 2009). Individuals who consume alcohol attend to a restricted range of information in social situations and can take longer to comprehend, synthesize, and respond to signals (Lannutti & Monahan, 2004). As a result of the myopic effects of alcohol (Steele & Josephs, 1990; Taylor & Chermack, 1993), the most prominent cues in an environment are heightened when drinking, which may turn women's attention away from risk cues (Davis et al., 2007). Alcohol consumption is associated with reductions in tension and anxiety (Greeley & Oei, 1999), which can decrease the ability to appraise stress-related cues (Sayette, 1993). Studies of civilian women suggest that individuals report that they are less likely to be attuned to whether a dating situation is unsafe when drinking (Norris et al., 1996, 1999). Decision-making in sexual situations tends to be generally less self-protective when individuals consume alcohol (Abbey et al., 2005; George et al., 2009). Therefore, even if women notice risk in dating situations, alcohol consumption may decrease the likelihood women respond to risk self-protectively (Stoner et al., 2007). Alcohol use can also make it difficult to physically fight back against an attacker (Harrington & Leitenberg, 1994; McCauley & Calhoun, 2008). Alcohol use in bar and party settings also increases women's exposure to potential perpetrators, who may opportunistically target women who are drinking (Parks & Zetes-Zanatta, 1999; Testa & Parks, 1996). Perpetrators of sexual assault also report tactical use of alcohol to decrease a woman's ability to resist an unwanted sexual advance (Kanin, 1985). Taken together, these data suggest that approaches that include alcohol intervention may be especially relevant for reducing victimization among populations who engage in heavy drinking, given that such activities increase risk for alcohol-related sexual assault (Farris & Hepner, 2014; Testa & Livingston, 2009).

Scholars argue in regard to both military populations (Farris & Hepner, 2014) and college women (Testa & Livingston, 2009) that reducing heavy episodic drinking can potentially lead to reduced rates of sexual victimization, especially rates of sexual assault that occurs when the victim is incapacitated. However, as discussed by Testa and Livingston (2018), "in general, women's alcohol use has rarely been addressed as a primary intervention target and in general, there seems to be a reluctance to even talk about the role of alcohol, out of a concern that this is victim-blaming or deflects blame from the perpetrator" (p. 148–149). Yet, as the authors articulate, "it would be foolish and unethical to ignore the fact that women's heavy episodic drinking (HED) plays a significant role in sexual victimization vulnerability out of an outsized concern that it is victim-blaming to do so" (Testa & Livingston, 2018; pp. 158).

To address the concern that talking about the intersection of sexual victimization and alcohol use conveys victim blame, it is essential that integrated prevention approaches convey that nothing an individual does – including drinking alcohol – fosters culpability for sexual victimization. Responsibility for sexual violence rests

solely with perpetrators of sexual aggression, and their decision to take advantage is under the influence of alcohol, or who is incapacitated as a result of drinking. Indeed, ensuring that responsibility is clearly and solely placed on perpetrators of violence is at the heart of feminist sexual assault risk reduction programs (Orchowski & Gidycz, 2018). There is also ample evidence to suggest that risk reduction interventions serve to empower victims to more appropriately allocate blame for sexual assault onto perpetrators (Gidycz et al., 2006). Women who experience sexual assault after engaging in a risk reduction program also report lower levels of self-blame compared to women who do not receive such training (Gidycz et al., 2015). Ensuring that outcome evaluations of prevention programs include assessment of self- and perpetrator-blaming among participants following the intervention is one strategy for ensuring that programs continue to be well-received by participants with histories of victimization and that participants who experience victimization following an intervention allocate responsibility to the perpetrator.

3.4.3 Alcohol Use and Bystander Intervention

In addition to considering the role of alcohol as a risk for perpetration and victimization, there is growing attention to how alcohol use intersects with an individual's ability to intervene to address risk for sexual violence in social settings. Although individuals who engage in heavy drinking are likely to be present in environments where there are opportunities to intervene to address risk for sexual violence (Haikalis et al., 2018; Oesterle et al., 2018), there is also evidence that individuals also often fail to intervene when they are in bar settings (Graham et al., 2014). As discussed in a conceptual review by Leone et al. (2018), there is reason to believe that alcohol use can interfere with each step that a bystander must take to address a potential risk for sexual violence, including (1) noticing risk; (2) labeling the situation as problematic; (3) taking responsibility for addressing the situation; and (4) possessing the skills to intervene. Pugh et al. (2016) also report that bystanders experience more barriers to intervention when a victim is intoxicated.

Whereas research addressing the intersection between alcohol use and bystander intervention is still relatively sparse, several quantitative and qualitative studies provide insight into ways that alcohol could influence each of the steps in bystander intervention. Qualitative research presented by Oesterle et al. (2018) found that although college men perceived themselves to be more likely to have the "liquid courage" to intervene, they might be at risk to intervene using more aggressive strategies when intoxicated. Research from alcohol administration studies is mixed. Further, a laboratory study involving an alcohol consumption task among participants found that whereas intoxication influenced participants' ability to notice an event, and perceive greater risk/need for intervention, alcohol did not influence participants' engagement in the later steps of the bystander intervention model (Ham et al., 2019). A different pattern of results was reported by Leone and Parrott (2019b), who documented in a laboratory-based alcohol administration study that

alcohol intoxication was associated with decreased likelihood and intervention among men who reported intentions to help. Differences in the study sample and approach to measuring bystander intervention across these studies may in part be responsible for these variations in findings, and additional research is needed to elucidate the mechanisms through which acute intoxication influences bystander behavior in real-world contexts. To date, findings from one field study found that participant intoxication decreased the accuracy of recalling a situation in a hypothetical sexual assault scenario, as well as assessment of risk in the scenario and need for intervention, but was not associated with ratings or one's personal responsibility to intervene, choice of strategy to intervene, or confidence in intervening (Melkonian et al., 2020).

Although studies report that engaging in heavy episodic drinking is associated with a lower likelihood of engaging in bystander intervention to address risk for sexual assault among men (Fleming & Wiersma-Mosley, 2015), there is also reason to believe that underlying beliefs relating to sexual aggression may influence both alcohol use and likelihood to intervene. For example, Orchowski et al. (2016) found that men who engaged in heavy drinking are less likely to engage in proactive bystander intervention, and this association was mediated by men's endorsement of peer approval of sexual aggression, their own comfort with sexism, and engagement in coercive sexual behavior. Other studies among community men also point to the importance of adherence to masculine norms among heavy drinking men as a contributing factor to bystander intervention. Specifically, Leone and Parrott's (2019a) analysis of survey responses from 148 men between the ages of 21 and 30 revealed that among heavy drinking men, but not non-heavy drinkers, avoidance of stereotypical feminine activities was negatively associated with engaging in bystander intervention to help friends. Because all of the aforementioned research addressing alcohol use and bystander intervention is among civilian samples, research is needed to examine the extent to which these findings generalize to service members. There is also a question of what populations are best to target with integrated interventions that address alcohol use and bystander intervention. Arguably, integrated alcohol and sexual assault interventions which focus especially on bystander intervention may be particularly relevant for individuals who frequent bar and party environments, where risk for violence is likely to occur (Oesterle et al., 2018).

3.5 An Overview of Integrated Approaches

3.5.1 Interventions for College Populations

Integrated alcohol and sexual assault prevention programs for military populations can draw from lessons learned developing, piloting, and evaluating prevention approaches for college students. To date, several integrated interventions exist for

different target audiences, including women, men, and all college students at large. These intervention approaches are outlined below.

3.5.1.1 Approaches for Women

Through funding from the NIAAA (R01 AA014514), Testa et al. (2010) examined the efficacy of using parent-based intervention to reduce alcohol-involved sexual victimization for first year college women. The parent-based intervention (PBI) was designed to increase alcohol-specific communication between mothers and daughters, as well as general communication. The study examined four conditions: alcohol-based PBI, enhanced alcohol and sexual victimization PBI, a control condition, and an unmeasured control condition. Both the alcohol PBI and the enhanced PBI were associated with a lower incidence of incapacitated rate among first year college women in comparison to the control condition. The researchers note that "intervention effects were relatively modest, and we did not observe a direct effect of the intervention on college [heavy episodic drinking]. Likewise, the enhanced intervention did not increase daughters' sexual assertiveness or reduce sexual victimization relative to the alcohol-only intervention" (Testa et al., 2010; p. 316). Because PBI must be delivered from mother to daughter, the potency of the intervention is variable, and the information must be relayed between mothers and daughters in a way that can be readily perceived and acted upon. Researchers also have little control over the fidelity, intensity, and style through which individuals convey the PBI to others. Thus, Testa et al. (2010) note that "the impact of PBI is likely to be more modest relative to more intensive or investigator-delivered interventions" (p. 317).

Gilmore and her colleagues (2015) also received funding through NIAAA to evaluate the efficacy of a web-based combined alcohol use and sexual assault risk reduction program for college women who engaged in heavy episodic drinking. This intervention is grounded in the Assess, Acknowledge, and Act (AAA) model of sexual assault risk reduction and resistance education (Rozee & Koss, 2001). The web-based intervention provides women with personalized feedback on alcohol use as well as self-protective strategies for sexual victimization and includes sexual assault risk reduction strategies. This intervention was effective over a 3-month follow-up at reducing heavy episodic drinking and victimization among women with more severe sexual assault histories (Gilmore et al., 2015). The sexual assault risk reduction content of the intervention was also associated with decreased alcohol-related blackouts as well as incapacitation, whereas the combined alcohol use and sexual assault risk reduction program reduced alcohol-induced blackouts (Gilmore et al., 2018a, b). These findings document the potential for brief web-based integrated alcohol and sexual assault prevention programs to show effects on both alcohol use and sexual assault outcomes.

Although the approach would not meet the proposed operational definition of an integrated alcohol and sexual assault prevention program, it is worth noting that several studies have examined whether reducing drinking alone is sufficient to

reduce risk for sexual victimization among college women. Clinton-Sherrod et al. (2011) found that motivational interviewing, personalized normative feedback, and a combination of both were associated with reduced reports of sexual activity when women were "too intoxicated to prevent it." Because the reduction in incapacitated sexual assault was not mediated through reductions in alcohol use, it is possible that women were at reduced vulnerability to sexual assault as result of enhanced ability to recognize risk for victimization. Brahms et al. (2011) found that Brief Alcohol Screening and Intervention in College Students (BASICS) intervention was equally effective among college women with and without a history of sexual victimization. The effects of the intervention on sexual assault were not examined. Taken together, these studies suggest that standalone alcohol interventions may be effective in reducing alcohol use for women with and without a history of victimization, but reductions in alcohol use may not be sufficient to reduce victimization risk.

There are a few broad conclusions that can be drawn from the aforementioned research. First, integrated approaches for alcohol and sexual assault prevention among college women are limited, focusing to date on first year college women and heavy drinking college women. Second, as integrated interventions are developed, attention should be paid to whether interventions are effective among survivors of sexual victimization. Whereas some studies demonstrate reductions in women with a history of victimization (Gilmore et al., 2015), other research shows that interventions are ineffective in reducing drinking among women with a history of sexual victimization (Clinton-Sherrod et al., 2011). There is also a lack of data to address the assumption that interventions that include active alcohol intervention could directly or indirectly imply that victims are to blame for assaults that involve voluntary consumption of alcohol use. Future studies which incorporate measures of self-blame among participants who participate in interventions can help to ensure that interventions have no iatrogenic effects for survivors, or individuals who experience victimization following program participation.

3.5.1.2 Interventions for Men

Through a treatment development grant from NIAAA (R34 AA020852), Orchowski and her colleagues designed and tested an in-person intervention to reduce perpetration of sexual aggression among college men who report heavy drinking (Orchowski et al., 2018b). The intervention included an individually administered brief motivational intervention (BMI) with a personalized feedback report (PFR) addressing alcohol use, alcohol use in sexual situations, alcohol-related sexual consequences, consent, and bystander intervention. The BMI with PFR was followed by a sexual assault prevention workshop grounded in social norms intervention and bystander intervention that shows evidence for reductions in sexual aggression perpetration among college men (Gidycz et al., 2011b). For this integrated intervention, the workshop was revised to address the intersection of alcohol use and sexual aggression more rigorously. Preliminary findings suggest that the in-person approach is

feasible, acceptable, and promising to facilitate change in attitudes relating to violence and foster safer alcohol use consumption (Orchowski et al., 2018b).

3.5.1.3 Interventions for Men and Women

Researchers have also received funding from NIAAA to develop and evaluate an integrated *web-based* alcohol and sexual assault prevention program for college students which integrates the programs developed by Orchowski et al. (2018b) and Gilmore et al. (2015) into an integrated web-based approach for all students (R34AA025691: Gilmore, PI). The alcohol and sexual assault prevention program (+ change) includes personalized normative feedback addressing alcohol use and its intersection with sexual aggression, sexual victimization, as well as bystander intervention. The web-based intervention approach addresses concerns relating to the feasibility of implementing single-gender approaches for men and women and is also unique in its inclusion of content tailored to sexual and gender minorities. Results from an open pilot trial of the intervention suggest that the intervention has high feasibility, acceptability, and utility among college students (Gilmore et al., 2020).

There is also increasing attention to whether protective behavioral skills (PBS) to reduce alcohol-related harms may protect against sexual victimization (see Scaglione et al., 2015). For example, greater engagement in protective behavioral skills is negatively associated with sexual victimization (Neilson et al., 2018). Currently, an intervention development study is underway through the support of NIAAA funding to pilot an integrated PBS intervention for alcohol use, sexual risk, and sexual assault among college students (Napper et al., 2018; Napper & Kenney, 2018). The Sex Positive Lifestyles: Addressing Alcohol & Sexual Health [SPLASH] Intervention is tri-pronged, targeting alcohol use, risky sexual behavior, and bystander behavior to address both alcohol-related and sexual assault-related risks. The intervention includes live, interactive group-based normative feedback designed to reduce discrepancies between perceived and actual norms addressing alcohol use and sexual risk. The intervention addresses the intersection between alcohol use and sexual risk, providing skills training to increase sex- and alcohol-related protective behaviors. The intervention also includes bystander intervention training to increase protective action.

It is also important to note that other interventions for men and women reference the intersection of alcohol use and sexual violence, but do not incorporate evidence-based alcohol intervention. For example, using pre-, post-, and follow-up assessments, Zinzow and her colleagues (2018) evaluated an intervention that included an education program designed to address knowledge, attitudes, and bystander intervention relating to alcohol use as well as sexual assault. Although content addressing the intersection of alcohol use and sexual violence is woven across the intervention, the publication does not describe specific intervention strategies designed to reduce participant drinking, making it unclear whether the approach fits the proposed definition of an integrated intervention. Notably, whereas the 70-minute

educational intervention had an impact on rape myth acceptance, program participants did not maintain gains in alcohol risk reduction strategies over time.

3.5.2 Programs for Service Members

Two studies are underway which seek to adapt the integrated alcohol use and sexual assault prevention approaches for college students for utilization in military samples. In 2014, Orchowski and her colleagues received funding from the Department of Defense Congressionally Directed Medical Research Programs (PT140100) to revise the promising integrated alcohol and sexual assault prevention program for heavy drinking college men (Orchowski et al., 2018b) for use among male soldiers who report at-risk alcohol use. This research has resulted in a standardized protocol to provide personalized normative feedback to reduce alcohol use and sexual assault among male service members who engage in at-risk alcohol use. Findings of the open trial found that soldiers were receptive to the intervention content, with most soldiers reporting that the intervention met their needs (Orchowski et al., 2017). Given the tendency for soldiers to move frequently, challenges emerged in maintaining enrollment in an in-person intervention which was administered over multiple time points.

Orchowski, Gilmore, and Walters (joint PIs) have also received funding from the Department of Defense Congressionally Directed Medical Research Programs to adapt the web-based alcohol and sexual assault prevention approach for college men and women described above (Gilmore et al., 2020) for use among sailors. In addition to active alcohol intervention, the intervention also addresses the intersection of alcohol use with sexual perpetration, sexual victimization, and bystander intervention. The treatment development study now underway utilizes a normative survey as well as a series of iterative qualitative intervention development activities to refine the web-based alcohol and sexual assault prevention to meet the needs of sailors (Orchowski et al., 2020a, b). With an eye toward eventual implementation and dissemination, the study also engages a military advisory board to guide the intervention structure and content.

3.5.3 Interventions Among Veterans

One study has examined intervention approaches for preventing sexual revictimization among women veterans who experienced sexual victimization during military service by concurrently targeting alcohol use. Specifically, Creech et al. (2021) report on the preliminary efficacy of Safe and Health Experiences (SHE), a computerized intervention to reduce hazardous drinking, intimate partner violence, and PTSD among women veterans with a history of sexual victimization. The study was funded by the Congressionally Directed Medical Research Program and included an

open pilot trial, as well as a small, randomized pilot trial. The findings of the open pilot trial were promising. Women were satisfied with the program and reported reductions in hazardous drinking, intimate partner violence, as well as PTSD over a 4-month follow-up. Given the high rates of revictimization among survivors of sexual violence, intervention approaches that address the consequences of sexual trauma and concomitantly seek to reduce risk for future harm are an important component of victims' assistance.

3.6 Summary and Future Directions

This chapter sought to articulate the need, rationale, and status of integrated alcohol and sexual assault prevention for military personnel. Integrated approaches to alcohol and sexual assault prevention are growing among civilian populations and, given the high rates of alcohol use in military settings, represent an emerging and relevant focus for military populations as well. To date, a limited number of integrated alcohol use and sexual assault prevention programs exist for military populations, representing a significant gap in prevention science. Alcohol intervention researchers have worked for decades to hone effective alcohol intervention strategies, and sexual assault prevention scientists and practitioners would benefit from "reaching across the aisle" to foster collaborations outside of what can often be a siloed discipline.

To increase the cross-cutting impacts of prevention efforts on multiple behavioral outcomes among service members, integrated interventions should draw from best practices in prevention. As delineated by Nation et al. (2003), prevention approaches should be comprehensive in nature, address peer influences, implement varied teaching methods, be of sufficient dosage, maintain grounding in sound theory, promote strong or positive relationships, be appropriately timed, be socioculturally relevant, incorporate outcome evaluations, and be administered by well-trained staff. Integrated alcohol and sexual assault prevention programs should also be viewed as one of the many necessary strategies for reducing risk of sexual violence in the military and be implemented in conjunction with other efforts to change cultural norms and bolster victim services. As articulated in the Department of Defense, 2014–2016 Sexual Assault Prevention Strategy, "due to the complex nature of the problem, it is important to conduct a number of interventions (actions) that span multiple levels to achieve the greatest, lasting impact" (Department of Defense, 2014; p. 8). Environmental interventions focused on policies that restrict access to alcohol and lead to decreased consumption may also reduce risk for sexual victimization (Farris & Hepner, 2014; Testa & Livingston, 2018).

As prevention scientists work to develop integrated alcohol and sexual assault prevention approaches for both military and civilian audiences, it will also be necessary to grapple with the questions of who should be targeted with such approaches. There is also the consideration of what intervention approach is likely to be most salient. Addressing the shared association between traditional gender role

adherence, alcohol use, and sexual aggression appears to be a promising strategy for targeting the array of factors that influence proclivity to rape. Given that perceived peer norms play a significant role in both personal alcohol use and sexual aggression, the adoption of a social norms approach to target both health concerns may have a synergistic effect. Regardless of the approach taken, there is likely to little downside to developing prevention programs which have the potential for cross-cutting effects on multiple psychological and health outcomes.

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Chapter 4
Understanding Alcohol-Involved Sexual Aggression Through the Science of Behavior Change

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4.1 Introduction

Sexual assault (i.e., nonconsensual sexual contact, attempted or completed rape) is a significant public health concern in the United States, with rates being particularly high for young people who consume alcohol. Survey studies have demonstrated that almost two-thirds of young male drinkers self-report a history of sexual aggression perpetration (Abbey et al., 2006), while approximately 80% of young female drinkers self-report having experienced sexual assault (Masters et al., 2014). The association between alcohol and sexual assault also occurs at the event level, with most sexual assaults involving alcohol consumption by the victim and/or the perpetrator according to retrospective surveys (Abbey et al., 2014) and men's subjective

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intoxication being associated with sexually aggressive behaviors in daily report measures (Testa et al., 2019). Given alcohol's robust association with sexual assault, prevention efforts targeting alcohol-involved sexual assaults are critical for effecting reductions in the concerning rates of sexual assault among drinkers. Unfortunately, rigorous evidence-based prevention and intervention approaches in the field of sexual assault are few (DeGue et al., 2014), and interventions that specifically target alcohol-involved sexual assault are even more rare (Gilmore et al., 2020).

In order to develop effective prevention and intervention programming targeting alcohol-involved sexual assault, it is imperative that we identify and understand the mechanisms underlying sexual aggression and how they may differ for sober and intoxicated incidents. We must assess not only *whether* our interventions work but also *how* and *why* they succeed at creating change (Neilsen et al., 2018). To support such knowledge advances and address the gap between mechanism-focused basic science and outcome-focused translational science, the National Institutes of Health (NIH) has created the Science of Behavior Change (SOBC) program. The SOBC program advocates the use of the experimental medicine approach (Sheeran et al., 2017) for understanding and creating changes in behavior. In the first phase of this approach, scientists use theory and extant research to identify potential mechanisms underlying the behavior of interest. Once identified, the second step involves developing tools and methods for measuring the postulated mechanism. Finally, researchers attempt to influence the identified mechanism either through experimental methods or through interventions designed to engage the target mechanism. If changes in the mechanism yield changes in behavior, then the mechanism is considered a mechanism of behavior change and is a suitable target for intervention (SOBC, 2020). The overarching goal of targeting specific and malleable behavior change mechanisms is to ultimately develop interventions that are more parsimonious, resource-efficient, and effective than traditional complex, multicomponent interventions that may not target the most relevant behavioral mechanisms.

The SOBC program was created to address scientific knowledge gaps regarding the means through which effective interventions create behavior change. Unfortunately, even intervention studies that yield behavioral changes typically do not identify or test the specific mechanisms (e.g., cognitive, physiological, emotional targets) underlying their effectiveness; this general state of intervention science applies to sexual aggression prevention and intervention efforts as well (Salazar et al., 2014). While the field of sexual assault research has made progress in identifying and measuring postulated mechanisms of alcohol-involved male sexual aggression through laboratory-based experimental studies using rigorous sexual assault analogues and well-established alcohol administration protocols (for reviews see Abbey et al., 2014; Abbey & Helmers, 2020; Davis et al., 2014), interventions directly targeting and testing those mechanisms to evince changes in sexually aggressive behavior are lacking. In this chapter, we review the potential

mechanisms underlying sexual aggression that have been identified through theory and empirical investigation. We focus on three major types of mechanisms – cognitive, physiological, and emotional – and the role each may play in men's sober and intoxicated sexual aggression against women. We then present an innovative study that utilized an SOBC approach for targeting specific mechanisms underlying alcohol-involved sexual aggression. Finally, we explore other novel methods through which this approach could be implemented and consider future research directions for translating findings from laboratory studies into improved intervention outcomes.

4.2 Postulated Cognitive Mechanisms of Sexual Aggression

Many of the theorized mechanisms underlying sexual aggression pertain to cognitions and cognitive processes. Empirical investigations of these processes have focused on such cognitive factors as misperception of women's sexual intent and cognitive distortions and beliefs justifying sexual aggression. Moreover, studies regarding alcohol-involved sexual aggression have examined the ways in which cognitive impairment due to alcohol intoxication, coupled with beliefs about alcohol's effects on sexually aggressive behavior, may facilitate sexually aggressive behavior. Such results indicate that alcohol expectancy challenge interventions may be good candidates to reduce alcohol-involved sexual aggression, as those who partake in these interventions experience reductions in their use of alcohol, heavy drinking, and positive expectancies about alcohol (Scott-Sheldon et al., 2012).

4.2.1 Misperception of Women's Sexual Intent

A reliable finding across several decades of research is that men tend to perceive more sexual interest in women's behavior than women perceive in their own or other women's behavior (Abbey, 1982; Abbey & Harnish, 1995; Abbey et al., 2000; Lindgren et al., 2008). This tendency for men to misperceive women's friendly behavior as indicating sexual interest has been found across multiple methodologies, including in live interactions and vignettes administered in the laboratory as well as self-reports of women's experiences outside of the laboratory (Abbey, 1987). There are individual difference factors in determining which men are most likely to misperceive women's friendliness as signaling sexual interest, including factors consistent with hostile masculinity, such as the endorsement of negative beliefs about women, heterosexual relationships, and rape victims (Abbey & Harnish, 1995; Jacques-Tiura et al., 2007; Treat et al., 2017).

Importantly, constructs consistent with hostile masculinity and the misperception of women's sexual intent are independently and synergistically associated with men's sexual aggression perpetration (Abbey et al., 1998; Abbey et al., 2011). Although misperceiving women's friendly behavior as an indication of sexual interest is not a direct cause of sexual aggression, men prone to these cognitive errors – particularly those who endorse rape-supportive attitudes – may continue to misinterpret or even disregard women's verbal and nonverbal signals of non-consent as an encounter unfolds (Farris et al., 2008). For example, Abbey and colleagues found that hostile masculinity was directly and indirectly associated with sexual aggression through its association with the misperception of women's sexual intent (Abbey et al., 2011).

Acute alcohol intoxication has been associated with an increased likelihood of (mis)perceiving a woman's behavior as sexual (Abbey et al., 2005; Farris et al., 2010). Alcohol intoxication likely contributes to men's misperceptions of sexual intent through impairment of the cognitive functioning necessary for accurate information and decisional processing (Gable et al., 2016; Giancola et al., 2010). For example, Farris et al. (2010) found a reduction in sensitivity to women's affective cues among men who had consumed alcohol. Specifically, after consuming a moderate dose of alcohol, men were less able to discriminate women's friendliness from sexual interest. However, men's perception for universal cues (e.g., clothing style) was similar when sober and intoxicated. This decreased sensitivity to person-specific cues that may signal noninterest, particularly when men interpret universal cues as signaling sexual interest (e.g., wearing what is perceived to be provocative clothing), may contribute to this misperception of sexual interest when intoxicated.

Findings such as these are often explained by alcohol myopia theory (AMT), which posits that a pharmacologically driven reduction in cognitive capacity narrows a drinker's attention toward salient impelling "go" cues and away from less salient inhibiting "stop" cues (Steele & Josephs, 1990). That is, intoxicated individuals may focus on salient cues consistent with sex and away from cues that would inhibit or reduce the likelihood of engaging in sex when sober. This may, in part, explain why drinkers were less sensitive to person-specific cues (e.g., facial expressions), as they may be less salient than universal cues (e.g., provocative clothing). In a related study, men were provided alcohol or no alcohol and asked to read a hypothetical sexual scenario in which a male character was depicted as using forceful strategies to engage in sex while the female character was described as providing a neutral response (Norris et al., 2002). Intoxicated men perceived greater enjoyment by the female character compared to sober men, and this was associated with increased likelihood of sexual aggression. Consistent with AMT, it was hypothesized that intoxicated men may have attended more to pleasure cues, and in combination with an increased misperception of the woman's enjoyment, this resulted in an increased likelihood of sexual aggression perpetration.

4.2.2 Cognitive Distortions, Beliefs, and Perceptions

Cognitive distortions play a prominent role in theories of sexually aggressive behavior. Although there is discussion in the field regarding the term "cognitive distortions" as well as the definition thereof, this term generally refers to "specific or general beliefs/attitudes that violate commonly accepted norms of rationality, and which have been shown to be associated with the onset and maintenance of sexual offending" (Ciardha & Ward, 2013, p. 6). Although cognitive distortions are commonly examined in populations of convicted sexual offenders (Ciardha & Ward, 2013), some beliefs such as rape myths (i.e., false beliefs about rape that blame the victim or minimize harms), adversarial heterosexual beliefs (i.e., views that male-female relationships are inherently antagonistic), and sexual entitlement (i.e., beliefs that male sexual fulfillment must occur upon demand) have been examined in unadjudicated samples. Research indicates that rape myth acceptance and adversarial heterosexual beliefs are consistently higher among men compared to women (Suarez & Gadalla, 2010; Forbes et al., 2004) and are associated with self-reported rape proclivity (Bohner et al., 1998; Logan-Greene & Davis, 2011). Similarly, sexual entitlement is associated with sexually aggressive behavior in college men (Bouffard, 2010).

Other studies have examined perceptions of sexual situations as possible cognitive mechanisms underlying sexual aggression. In these studies, participants rate their perceptions of sexual aggression analogues that provide various details about a sexual encounter. When coupled with alcohol administration, such studies can test for alcohol effects on these perceptions as well. For example, Davis et al. (2012) found that alcohol intoxication increased men's sexual entitlement cognitions during a sexual assault analogue, particularly for men with a childhood sexual abuse history.

Alcohol administration studies may also be used to examine the role of alcohol expectancies – or beliefs about the expected effects of drinking alcohol – during sexual situations. Alcohol expectancies have been operationalized in several ways. The original laboratory method was to manipulate "expectancy set": Participants expect and believe that they have consumed drinks that either contain alcohol or do not, regardless of actual drink content. Alcohol expectancies have also been operationalized using self-report questionnaires (Abbey et al., 1999; Starfelt et al., 2016). Research using these methods has routinely demonstrated that alcohol expectancies increase men's sexual aggression. For example, in a series of experiments using the "date rape decision-latency measure" (Gross et al., 2001; Marx et al., 1999), men who expected and/or received alcohol waited longer before determining that the hypothetical perpetrator in a rape scenario should cease his advances, and they perceived the hypothetical victim as more sexually aroused. Capitalizing on the interplay of both operationalization methods, some studies have assessed alcohol expectancies *and* manipulated expectancy set and/or intoxication. For example,

Norris et al. (2002) found that pre-existing alcohol expectancies predicted sexual aggression intentions in intoxicated men but only when expectancies were strong. Moreover, stronger alcohol expectancies and the receipt of alcohol predicted reduced perceptions of force and increased perceptions of female enjoyment in a sexual assault analogue, while the expectation of alcohol predicted increased perceptions of the sexually aggressive male character's typicality. Such findings demonstrate that alcohol may influence cognitive processes relevant to sexual aggression through multiple pathways. Altogether such findings demonstrate that men's beliefs regarding the power of alcohol to enhance sex, to foster aggressiveness, and to disinhibit sexual restraint can exert a pivotal proximal impact in encounters that hold potential for sexual assault. The act of drinking can activate such expectancies, thereby leading men to experience an expectancy-congruent set of cognitive perceptions and responses culminating in sexually assaultive outcomes.

4.2.3 Interventions Targeting Cognitive Mechanisms

Cognitive behavioral approaches have been used with sexual offenders since the 1970s with varying content and degrees of success (Marshall & Laws, 2003). Only one primary prevention program that involved partial focus on cognitive attributions for violence has demonstrated evidence of efficacy for primary prevention of sexual aggression (DeGue et al., 2014). However, it was not clear that cognitive changes were the mechanism underlying this effect. Finally, one intervention program targeting male undergraduates has demonstrated decreases in sexual aggression through cognitive mechanisms. *RealConsent* reduced sexually aggressive behavior over a 6-month period through cognitive changes in consent-related knowledge, date rape attitudes, and hyper-gender ideology (Salazar et al., 2019). For example, participation in *RealConsent* improved consent-related knowledge which then decreased self-reported perpetration, perhaps through changes in perceptions of consent during sexual situations. These findings are promising for establishing these cognitive factors as mechanisms of behavior change underlying sexual aggression; however, attrition concerns (only 28.9% of the sample participated in the 6-month follow-up assessment) somewhat limit these conclusions.

Despite the promise of targeting cognitive mechanisms to reduce sexual aggression and the clear role of alcohol expectancies and intoxication in sexual aggression-related cognitions, no interventions focusing on cognitive mechanisms have been tested during periods of acute intoxication. As noted by Parrott and Eckhardt (2018), the consistent, important role of alcohol myopia processes in the alcohol-aggression relationship underscores the need for such work. Alcohol expectancy challenge interventions have historically demonstrated promise for reducing college student drinking over the short term (Scott-Sheldon et al., 2012). To date, such approaches have not been tested regarding sexual aggression-related alcohol expectancies.

Additional research identifying and targeting cognitive mechanisms underlying sexual aggression that considers alcohol's roles in cognitive processes such as alcohol myopia and expectancies is warranted.

4.3 Postulated Physiological Mechanisms of Sexual Aggression

Researchers seeking to further knowledge of the etiology of sexual assault have expanded their methods to assess physiological correlates of sexual aggression. Physiological correlates are important markers of risk for sexual aggression and are novel intervention targets. Ongoing research outside of sexual aggression has posited that physiological correlates of mental health, particularly those associated with neuroendocrine stress response systems, may be used for mechanisms of change. Long-standing research examining mood and anxiety disorders have documented associations between symptoms of these disorders and increased physiological reactivity when one is at rest (e.g., resting, baseline) and responding to environmental demands (e.g., reactive; for review, Kemp et al., 2010; Tolin et al., 2020). Notably, some research has found that participants demonstrate improved physiological arousal regulation following treatment with evidence-based therapies (Nishith et al., 2003) and biofeedback (Caldwell et al., 2018; Tolin et al., 2020; Zucker et al., 2009), suggesting these physiological correlates are involved in the mechanism of change in treatment. Research investigating physiological mechanisms within sexual aggression has extended this research on general physiological reactivity via neuroendocrine processes while also examining discrete physiological processes, such as physiological sexual arousal. As these physiological mechanisms have been identified, more research has sought to expand our understanding of their role in sexual aggression and the processes through which they may influence alcohol-facilitated sexual aggression.

4.3.1 General Physiological Reactivity

Similar to those studies examining mood and anxiety disorders, physiological reactivity with the sexual aggression literature is most often operationalized via measures of two neuroendocrine systems: the sympathetic-adrenal-medullary (SAM) and hypothalamic-pituitary-adrenal (HPA) axes. The SAM involves the autonomic nervous system, which is activated during times of mobilization, equipping the body for fight-or-flight responses by increasing heart rate and oxygen flow throughout the body (Mendes, 2009). Activation of the sympathetic nervous system involves the innervation of the sweat glands and the subsequent sweating increases skin conductance. Measuring these changes in skin conductance through electrodermal

activity (EDA) is believed to measure general, in-the-moment physiological arousal (Mendes, 2009).

Like the SAM, the HPA axis functions to help the individual effectively adapt to the environment, particularly in the presence of threat (Malenka et al., 2009). After sensory information is perceived and interpreted as potentially threatening, the HPA axis is activated, resulting in increased production of cortisol, a glucocorticosteroid hormone produced in the adrenal glands (Besedovsky et al., 2008). The increased production of cortisol allows for increased availability of glucose to facilitate the fight-or-flight response (Besedovsky et al., 2008). Thus, concentrations of cortisol are used as another physiological correlate of physiological reactivity, such that increased concentrations of cortisol reflect greater physiological reactivity (Kirschbaum & Hellhammer, 1989).

Competing theories suggest that physiological arousal is a mechanism underlying sexual aggression, in that sexually aggressive men may demonstrate either pattern of general underarousal or overarousal. For example, it is theorized that low levels of physiological reactivity (e.g., hyporeactivity) may motivate antisocial behavior (for review, Fowles, 2000; Lorber, 2004), including sexual aggression, via heightened sensation seeking or lack of inhibition and concern about consequences (Wilson & Scarpa, 2011). Alternatively, sexually aggressive men may engage in coercive and violent behaviors in sexual contexts due to strong and unregulated negative affect (e.g., hyperreactivity; Peterson et al., 2014).

Among the available data that directly examined these theorized mechanisms of general physiological reactivity within sexually aggressive men, Peterson and colleagues found support for the hyporeactivity profile; sexually aggressive men have lower overall baseline cortisol than non-sexually aggressive men (Peterson et al., 2014). Specifically, they tested two competing hypo- and hyperreactivity profiles by exposing men with and without sexual aggression histories to stimuli that would induce positive affect and negative affect and measured baseline salivary cortisol concentrations and resting and reactive EDA. Within a hyporeactivity profile, sexually aggressive men would demonstrate lower levels of baseline cortisol concentration and lower EDA reactivity; according to a hyperreactivity profile, sexually aggressive men would demonstrate higher baseline cortisol concentration and higher EDA reactivity. Sexually aggressive men demonstrated lower baseline salivary cortisol concentrations, suggesting lower physiological arousal. While there were no differences in resting EDA, sexually aggressive men demonstrated decreased EDA reactivity to a sadness induction, while non-sexually aggressive men increased EDA reactivity to a sadness induction. The authors concluded that the sexually aggressive men in this sample demonstrated lower physiological reactivity than non-sexually aggressive men, which was consistent with a hyporeactivity profile (Peterson et al., 2014).

However, Spokes et al. (2014) conducted a separate study in which one hypothesis was that men who reported greater physiological arousal would display more sexually aggressive behavior, as assessed via sexual aggression analogue. Specifically, men viewed consensual and nonconsensual sexual images

and then listened to an audio recording of a date rape and indicated when they would stop all sexual advances if they were in that scenario (Spokes et al., 2014). Consistent with a hyperreactivity profile, men who demonstrated higher EDA in response to the nonconsensual sexual images and spent longer viewing the nonconsensual images indicated a significantly later stopping point in the sexual aggression analogue (Spokes et al., 2014). Higher EDA in response to the nonconsensual images was also associated with a later stopping point in the sexual aggression analogue for men with low working memory. With only two studies directly examining the association between general physiological reactivity and sexual aggression, neither of which involved alcohol administration, far more research is needed to test the role of physiological reactivity in sober and intoxicated sexual aggression.

4.3.1.1 Additional Neuroendocrine Factors

Ongoing research has also sought to examine the role of additional neuroendocrine factors, such as androgens (testosterone) and gonadotropins [e.g., follicle-stimulating hormones (FSH), luteinizing hormone (LH)] in men's sexual aggression. Testosterone is linked to aggression and dominance; higher testosterone levels have been shown to be related to dominance seeking and mating effort (Archer, 2006; Ellison, 2001; Mazur & Booth, 1998). The findings regarding the associations between elevated levels of baseline testosterone, LH, and FSH and sexual aggression are mixed, with some finding group differences in elevated levels between rapists and non-rapists (Dabbs et al., 1987, 1991, 1995; Giotakos et al., 2003), while others do not (Bain et al., 1987; Bradford & McLean, 1984). A notable limitation of many of these studies is the lack of temporal precedence; it is unclear if testosterone differences predated the perpetration of sexual aggression. Studer and colleagues found a significant association between serum testosterone levels and subsequent sexual offending (Studer et al., 2005), while Kingston and colleagues found that both FSH and LH were associated with sexual violence recidivism (2012). Changes in testosterone during interactions with women are hypothesized to act as neuroendocrine measures of sexual attraction and dominance (Ellis, 1991; Roney et al., 2007; Van der Meij et al., 2011) and potentially suggest that testosterone levels may predispose men to pay attention to or misinterpret cues of sexual interest (Perilloux, 2011); however, this has not been examined with respect to sexual aggression. Notably, none of the above research has examined neuroendocrine factors in the context of acute intoxication, and more research in this area is needed. Some of this is attributable to the logistical difficulties of assessing neuroendocrine factors. For example, consumption of alcohol degrades salivary testosterone, thus requiring testosterone to be assessed via blood draw, rather than passive drooling (Wegner, 2020, personal communication).

4.3.2 Sexual Arousal

Theoretical models of sexual aggression have identified sexual arousal as a key variable in men's sexual aggression (Hall & Hirschman, 1991; Huppin & Malamuth, 2017; Malamuth & Hald, 2016; Seto, 2019). Substantiated by emotion theory and affective neuroscience, sexual arousal may be defined as a multidimensional state involving physiological changes, the perception of these changes, subjective experience of arousal, and motivated behavior (Frijda, 2008; Geer et al., 1996). Thus, sexual arousal involves physiological changes, one's perceptions of those changes (e.g., subjective sexual arousal), as well as an emotional/motivational state (e.g., sexual arousal-related emotions; Janssen, 2011). In this section we thus review the findings on sexual arousal and sexual aggression inclusive of physiological changes, cognitive perceptions, and emotional experiences.

Researchers have developed several validated methods for measuring the various dimensions of sexual arousal. Psychophysiological research has extensively relied upon phallometric measures to measure genital arousal. Phallometric measures quantify the degree of vasodilation that results in volumetric or circumferential changes of the penis (Bancroft et al., 1966; Freund, 1965). Genital response may also be measured through thermographic camera (e.g., thermal imaging; Kukkonen et al., 2007) and laser Doppler imaging (LDI; Bossio et al., 2018). Subjective sexual arousal refers to perceptions of one's own physiological sexual arousal. Methodologies vary as to whether this is assessed via single-item question, or if participants rate specific temperature changes and erectile changes in their genitals. Other studies have assessed the affective experience of being sexually aroused by having participants rate their current emotional state through items such as feeling "turned-on" or "horny" (Davis, 2010).

Because assessment of sexual arousal necessitates presentation of stimuli, investigations of the association between sexual arousal and sexual aggression involve presentation of consensual and nonconsensual sexual material and sexual aggression analogues, such as hypothetical scenarios in which men indicate their likelihood of engaging in behavior consistent with sexual aggression. Overall, sexual arousal positively predicts the likelihood of sexual aggression. Specifically, individuals who report greater levels of sexual arousal during a hypothetical sexual scenario also reported greater intentions to perpetrate sexual aggression (Craig et al., 2020; Neilson, 2019). Some researchers argue sexually aggressive men display a sexual preference for nonconsensual sex over consensual sexual activity (Barbaree & Marshall, 1991). Two meta-analyses found that effect size of group differences on genital indices of this preference (i.e., "rape indices") was considered medium to large (Lalumière & Quinsey, 1994; Hall et al., 1993) suggesting that on average, rapists responded with more genital sexual arousal to scenarios depicting rape than did non-rapists. Ongoing research that has predominantly, but not exclusively, utilized adjudicated offenders has found that 60% of rapists show larger rape indices than approximately 90% of non-rapists (e.g., "60/90 benchmark"; Lalumière et al., 2003). It is vital to understand that rape indices are relative; that is, even if

rapists consistently have a higher rape index, it does not necessarily translate to rapists preferring rape to consensual sex (Lalumiere et al., 2003). Further, when sexual arousal is deliberately induced using pornography depicting consensual sexual activity prior to reading a hypothetical sexual scenario, individuals who viewed the pornographic material were more likely to report that they would use sexual violence to obtain sex compared to individuals who did not view pornography (Bouffard, 2002; Loewenstein et al., 1997) and compared to their own self-reports when they had not viewed pornography (Ariely & Loewenstein, 2006). Thus, while some sexually aggressive men demonstrate greater sexual arousal in response to non-consent than non-sexually aggressive men, sexual arousal itself appears the more robust predictor of sexual aggression, rather than a preference for nonconsensual sex.

A second hypothesized mechanism is that sexually aggressive men fail to demonstrate an inhibition of sexual arousal in response to violence and lack of consent, even though they may still prefer consensual sexual activity (inhibition models; Bernat et al., 1999; Lohr et al., 1997). Overall, researchers have found that sexually aggressive and non-sexually aggressive men display higher levels of erectile response to consensual sexual material in comparison to nonconsensual sexual material (Lalumière et al., 2003).When sexually coercive material is introduced into a vignette depicting sexual activity, non-sexually aggressive men's erectile response decreases; that is, there is an inhibition of the sexual response among non-sexually aggressive men when they are exposed to sexually coercive material. In contrast, sexually aggressive men do not display such an inhibition response; rather, when viewing sexually coercive material, sexually aggressive men's erectile response remains consistent, or is maintained, at similar levels as when they view sexually consensual material (Bernat et al., 1999; Lohr et al., 1997; for review, Lalumière et al., 2003). Importantly, event-level variables surrounding a sexual assault may disrupt the inhibition of sexual arousal, thus allowing sexual arousal to continue and facilitate sexual assault. That is, even men who generally display an inhibition of sexual arousal to non-consent may fail to display such inhibition in certain contexts. Exposure to pornography, instructions that arousal to rape is common, inducing anger at a female confederate, or instructions to fake arousal are associated with failure to inhibit genital or subjective sexual arousal in the context of non-consent (Barbaree et al., 1983; Briddell et al., 1978; Malamuth & Check, 1983; Quinsey & Chaplin, 1984; Quinsey et al., 1981; Yates et al., 1984).

Alcohol intoxication is posited to serve as another event-level variable that disrupts the inhibition of sexual arousal. While alcohol's physiological effects on erectile functioning are anecdotally discussed, the physiological effects of alcohol are generally small (George et al., 2006). According to AMT, sexual arousal may function as a "go cue" on which men myopically focus when intoxicated (George et al., 2009), thus increasing the likelihood that they will act in a sexually aggressive manner. Alcohol administration paradigms examining the role of sexual arousal on sexual aggression have found that alcohol indirectly facilitated acting like a sexually aggressive man in a hypothetical story or to pursue sexual activity in a virtual dating analogue via increases in subjective sexual arousal (Davis et al., 2006; Woerner

et al., 2018). A balanced-placebo alcohol administration design using phallometric measures found that the belief that one had consumed alcohol (i.e., expectancy set) was associated with increased genital arousal in response to both consensual and nonconsensual rape cues relative to men who consumed alcohol (Barbaree et al., 1983). Compared to "expect-no-alcohol" controls, men in the "expect-alcohol" condition exhibited greater arousal to rape depictions and spent more time watching violent and deviant erotica (Briddell et al., 1978; George & Marlatt, 1986). Expectations that alcohol makes women more sexually vulnerable are associated with heightened subjective sexual arousal during a hypothetical sexual assault scenario (Davis et al., 2006). Thus, alcohol may have an indirect effect on sexual aggression by facilitating sexual arousal to rape cues (Davis et al., 2006) or by impairing men's ability to focus on inhibitory cues and modify their sexual arousal (Barbaree et al., 1983), indicating that sexual arousal may serve as a key mechanism in alcohol-involved sexual aggression.

4.3.3 Interventions Targeting Physiological Mechanisms

Interventions targeting physiological mechanisms underlying sexual aggression have predominantly attempted to reduce "deviant" sexual arousal within sex offender populations. Such interventions regularly target sexual arousal and sex drive through medication and psychotherapy (Lewis et al., 2017; Turner & Briken, 2018). Medications typically involve selective serotonin reuptake inhibitors (SSRIs), anti-androgens, and gonadotropin-releasing hormone agonists (Lewis et al., 2017; Turner & Briken, 2018). Notably, while medications appear to be effective at reducing sexual thoughts and fantasies, the available data regarding the efficacy of GnRH agonists on recidivism is limited (Turner & Briken, 2018). A systematic review on pharmacological approaches for sex offenders concluded that the review "does not provide sufficient evidence for a reduction of sexual recidivism in offenders following pharmacological treatment" (Khan et al., 2015, pg. 24).

Interventions to counter-condition sexual arousal have been conducted in sex offender populations. Such interventions seek to change sexual preference for nonconsenting sexual material through aversive therapy (Bancroft, 1974), covert sensitization (Cautela, 1979), and masturbatory reconditioning (Laws & Marshall, 1991; for review; Marshall & Fernandez, 2003). However, participants in these studies span those adjudicated for child-related offenses and sexual paraphilias as well as adult sexual assault offenses. It is thus challenging to parse out the differential efficacy of counter-conditioning interventions for perpetrators of adult sexual assault, particularly as this population may still prefer consensual sexual activity relative to nonconsensual sex. Further, a review of the literature by Marshall and Fernandez (2003) found little efficacy of phallometric-based interventions to change sexual preferences, nor were these interventions effective to reduce recidivism. Notably, the authors concluded that other aspects of treatment for sexual offenders, such as

empathy training, attitude change, and anger control, may indirectly alter sexual preferences (Marshall & Fernandez, 2003).

Phallometric-based interventions to modify sexual arousal are thus not particularly efficacious, creating a gap between the literature demonstrating sexual arousal as a mechanism of sexual aggression and ongoing efforts to reduce perpetration. Further, no interventions have been implemented or evaluated in the context of alcohol intoxication, despite ongoing research suggesting intoxication is a context-specific factor that affects sexual arousal. Thus, there is a need for interventions that (1) directly target sexual arousal through novel approaches; (2) reduce sexual arousal indirectly by altering the contextual factors that facilitate or disinhibit sexual arousal; and (3) consider the role of alcohol intoxication and expectancies in their approaches.

4.4 Postulated Emotional Mechanisms of Sexual Aggression

Sexual aggression may be associated with an individual's susceptibility to, and experience of, emotions. Notably, both general negative and positive affect, along with many, specific emotions (e.g., anger, anxiety), may serve as both risk factors for sexual aggression and potential targets for intervention programs that seek to reduce perpetration. Research has examined the effects of these emotional mechanisms on perpetration, as well as the ways in which the experience of emotions may interact with alcohol consumption or emotion regulation to predict perpetration.

4.4.1 Negative and Positive Affect

Research indicates that general negative affect is associated with sexual aggression perpetration. For example, negative affect may mediate the relationship between childhood sexual abuse victimization and later sexual aggression perpetration, such that childhood sexual abuse victimization is associated with an increase in negative affect, which is associated with an increased likelihood of perpetration (Peterson et al., 2018). Other studies have examined the role of both negative and positive emotions in sexual aggression perpetration through their impact on sexual arousal. For example, sexual aggression perpetrators reported more sexual arousal when viewing erotic film clips following a negative mood induction than did nonperpetrators. Such a reaction may facilitate perpetration in circumstances where nonperpetrators demonstrate reduced sexual arousal, such as being rejected after making a sexual advance (Craig et al., 2017). In another study, inducing a sad or positive mood was associated with increased physiological sexual arousal when listening to a narrative description of a rape, suggesting that either a positive or negative deviation from a neutral mood can reduce inhibition to sexual violence (Lalumière et al., 2017). Because research examining how alcohol may modulate relationships among

general negative or positive affect, sexual arousal, and sexual aggression perpetration is lacking, more research should be conducted to examine this issue.

4.4.2 Anger

The experience of several, specific emotions also play a role in sexual aggression perpetration and may provide some insight into how negative and positive affect lead to sexually aggressive behaviors. Notably, anger has long been theorized to play a prominent role in sexual aggression, and a plethora of research corroborates this hypothesis. Perpetrators of sexual aggression often report higher levels of anger than nonperpetrators. For example, the Massachusetts Treatment Center's rapist typology cites anger as a primary or secondary motivator for three of their five types of rapists (James & Proulx, 2020; Knight, 2010). Furthermore, in an assessment of the five-factor model personality traits among sexual violence perpetrators, convicted and non-convicted sexual aggression perpetrators each reported higher levels of anger and hostility than nonperpetrators (Carvalho & Nobre, 2019). Increased reports of proximal anger are also associated with an increased risk of perpetrating sexual aggression against one's intimate partner (Elkins et al., 2013), and perpetrators of sexual violence outside of intimate relationships also report higher levels of anger toward women than nonperpetrators (DeGue & DiLillo, 2004). Furthermore, sexual assault perpetrators report higher levels of hostile masculinity than nonperpetrators, which may indicate that they distrust women and are easily angered by them (Abbey et al., 2011; Logan-Greene & Davis, 2011; Russell & King, 2020). Moreover, trait anger also prospectively predicted sexual aggression at a 3-month follow-up, such that higher levels of trait anger were associated with a greater likelihood of perpetration (Davis et al., 2015). In addition to the direct effects of anger on sexual aggression, anger may function as a context-specific factor influencing sexual arousal. Anger has been theorized and observed to serve as a contextual factor in which sexual arousal contributes to sexual aggression (Hall & Hirschmann, 1991; Marshall & Barbaree, 1990; Yates et al., 1984). Anger or rage may either increase sexual arousal to rape cues or impede the efficacy of inhibition mechanisms when confronted with non-consent cues (Lussier & Cale, 2013).

The relationship between anger and sexual aggression perpetration may be further modulated by alcohol. Specifically, among intoxicated individuals, hostility was associated with intentions to perpetrate sexual aggression in a hypothetical scenario; however, among sober individuals, there was no relationship between these two variables (Abbey et al., 2009). Likewise, alcohol expectancies may also play a role in this relationship, in that intoxicated individuals with strong expectancies that alcohol would make them more sexually coercive reported greater anger during a hypothetical sexual encounter than individuals with weaker expectations of the link between alcohol and sexual aggression. In contrast, among sober individuals, there was no relationship between expectancies and expressions of anger during the

hypothetical sexual encounter (Davis et al., 2020a). Finally, among a subgroup of men who reported high hostility toward women, intoxicated men whose partner made either an indirect or direct request to use a condom during a hypothetical, sexual scenario reported greater intentions to use coercion to obtain unprotected sex than sober men whose partners made a direct request to use a condom (Wegner et al., 2017).

4.4.3 Anxiety

Perpetrators of sexual aggression also report higher levels of trait anxiety relative to nonperpetrators (Lyn & Burton, 2005). Likewise, increased levels of trait anxiety are also directly associated with an increased risk of sexual aggression perpetration (Peterson et al., 2018). Furthermore, anxious maternal attachment was associated with an increase in sexual aggression perpetration through an increase in hostility toward women (Russell & King, 2016). One possible explanation for this is that anxious men attempt to use sex as a means of gaining respect and acceptance and use sexual aggression to obtain sex when their advances are rebuffed (Calzada et al., 2011).

Alternatively, it is also possible that substance abuse mediates the relationship between trait anxiety and sexual aggression. Specifically, anxious individuals may self-medicate via alcohol or other substances to reduce their anxiety, which would make them more susceptible to sexual aggression perpetration. Although research examining the relationship between anxiety and sexual assault perpetration in the context of alcohol use is scant, extant research does lend some support to this hypothesis. Specifically, cross-sectional research indicates that alcohol use and anxiety are each associated with increased risk of sexual aggression perpetration; however, these variables were not examined for a possible interaction (Calzada et al., 2011). As such, more research is needed to examine whether alcohol intoxication and anxiety interact to predict perpetration likelihood.

4.4.4 Sexual Excitement

The association between positive affect and sexual aggression may be explained via sexual excitement. Specifically, individuals who are experiencing sexual excitement are more likely to state that they would force their date to have sex than those who were not experiencing sexual excitement (Loewenstein et al., 1997). Similarly, within-subjects research indicates that men are more likely to perpetrate sexual aggression toward women when they are sexually excited than when they are not sexually excited (Ariely & Lowenstein, 2006). Such results may indicate that sexual

excitement leads men to consider a wider variety of behaviors as acceptable during sexual situations, up to and including many sexually aggressive behaviors.

4.4.5 Empathy

In addition to the experience of these specific emotions, empathy, or the ability to identify with another person's feelings or situation (Roberts & Stayer, 1996), may also be associated with sexual aggression, in that perpetrators of sexual violence report reduced empathy toward adults relative to nonperpetrators (Gantiva et al., 2018; Marshall et al., 1995). These results have been replicated in samples of incarcerated sexual offenders, which show that incarcerated perpetrators report lower levels of empathy than nonperpetrators do (Loinaz et al., 2021; Morrow, 2018). Accordingly, high levels of empathy may serve as a protective factor against sexual aggression in certain circumstances. Specifically, high levels of empathy moderate the relationship between several sexual aggression risk factors and sexually aggressive behavior, including peer approval of forced sex, hostility toward women, rape-supportive beliefs, sexual compulsivity, and number of sexual partners. In other words, individuals who report high levels of any of these risk factors are less likely to report sexual aggression when empathy is high rather than low (Hudson-Flege et al., 2020; Wheeler et al., 2002).

Alcohol consumption and intoxication also affect the relationship between empathy and sexual aggression perpetration. For instance, high levels of empathy may serve as a protective factor in the relationship between alcohol consumption and sexual aggression perpetration, such that individuals who report higher levels of empathy are less likely to report sexual aggression perpetration (Hudson-Flege et al., 2020). Likewise, in an experimental manipulation which examined how alcohol intoxication and hypermasculinity affected men's responses to a woman in a violent pornographic story, alcohol moderated the relationship between hypermasculinity and empathic reactions toward the female character, with hypermasculine, intoxicated men reporting less empathy than men who were not intoxicated, or than men who were intoxicated but reported low hypermasculinity (Norris et al., 1999).

In contrast to the reduced empathy felt by perpetrators of sexual aggression toward adults, some research suggests that perpetrators of childhood sexual abuse show comparable levels of empathy toward children as the general population. Specifically, perpetrating childhood sexual abuse likely requires a certain amount of empathy to enable perpetrators to groom and manipulate their victims. However, such perpetrators also use self-serving interpretations of their victim's behaviors and desires, allowing them to perpetrate abuse (Elsegood & Duff, 2010). Further research on the ways in which empathy may be used by perpetrators to manipulate and coerce their victims is needed.

4.4.6 Emotion Regulation

Considering research showing the association between certain, specific emotions and sexual aggression, individuals' ability to regulate their emotions adaptively may be a key mechanism to target to reduce sexual aggression, especially in instances in which an individual is experiencing unwanted or negative emotions. For example, sexual assault perpetrators who were exposed to acute stress showed a positive association between emotion regulation difficulties and aggression toward the woman, while perpetrators who reported low levels of perpetration or were not exposed to acute stress showed no relationship between emotion regulation and aggression toward the woman (Pickett et al., 2016). Similarly, inducing anger causes a rise in aggression among perpetrators of intimate partner violence who were instructed to use maladaptive emotion regulation strategies relative to perpetrators who were instructed to use adaptive emotion regulation strategies (Maldonado et al., 2015). Likewise, state anger interacts with state emotion regulation to predict sexually aggressive intentions, such that men with higher levels of anger reported a negative relationship between state emotion regulation and sexually aggressive intentions (Neilson et al., 2022). As such, adaptive emotion regulation skills may prevent sexually violent men from perpetrating when experiencing negative affect (Neilson et al., 2022; Pickett et al., 2016; Shorey et al., 2015).

Emotion regulation also plays a role in the relationship between the experience of sexual arousal and sexual aggression. In one study, emotion regulation moderated the relationship between sexual arousal and sexual violence perpetration, such that reduced emotion regulation ability was associated with increased intentions to perpetrate when men were sexually aroused. However, for men who have higher emotion regulation ability, there was no relationship between sexual arousal and intentions to perpetrate sexual violence (Craig et al., 2020). Other research suggests that emotion regulation difficulties may mediate the relationship between childhood sexual abuse victimization and sexual violence perpetration later in life, especially when sexually aroused. Specifically, victims of childhood sexual abuse are more likely to experience emotion regulation difficulties, which are subsequently associated with an increased risk of sexual violence perpetration (Parkhill & Pickett, 2016). This increase in perpetration may occur because genital sensation and other sexual behaviors induce negative affect in childhood sexual abuse victims (Pulverman & Meston, 2016). As a result, sexual arousal may lead to an increase in negative affect among such victims, which may overwhelm their abilities to adaptively regulate their emotions and make them more susceptible to sexual aggression perpetration (Parkhill & Pickett, 2016).

In a similar manner to its association with other risk factors of sexual violence perpetration, research suggests that emotion regulation difficulties may exacerbate

the relationship between alcohol and sexual violence because the cognitive effects of alcohol impair an individual's ability to regulate their emotions (Stappenbeck & Fromme, 2014). Additionally, emotion regulation moderates the relationship between the amount of alcohol an individual reports they typically consume prior to having sex and the severity of sexual assault perpetration, such that when alcohol consumption is high, there is a positive relationship between emotion regulation difficulties and perpetration severity. On the other hand, when alcohol consumption is low, there is no relationship between emotion regulation difficulties and perpetration severity (Kirwan et al., 2019). Further research examining the effects of acute alcohol intoxication on the association between emotion regulation and sexual aggression is warranted.

4.4.7 Interventions Targeting Emotional Mechanisms

Research suggests that emotional mechanisms may be useful targets for intervention programs seeking to reduce sexual aggression perpetration. For example, a three-session intervention program which focused on increasing empathy toward women (among other goals) showed a reduction in sexually coercive behaviors among men who participated in the intervention at a 2-month follow-up (Orchowski et al., 2018). Likewise, subsequent research suggests that the effect of empathy on intervention programs may be moderated by rape myth acceptance, such that individuals who endorsed more rape myths report reduced intentions to intervene with strangers than individuals who endorsed fewer rape myths (Leone et al., 2020). However, additional research is needed to determine the effectiveness of empathy-based intervention programs while intoxicated and to determine whether they maintain their effectiveness beyond a 2-month follow-up.

Likewise, cognitive behavioral therapy (CBT)-based intervention efforts which include anger management also appear to be viable candidates for reducing perpetration. Specifically, employment of CBT-based interventions among sex offenders leads to a reduction in recidivism among those sex offenders. In such interventions, sex offenders are taught how to identify relevant emotions and understand how these emotions may influence their risk of sexual aggression. They then learn how to notice when they are experiencing these emotions as well as skills such as mindfulness and distress tolerance that can assist them with managing these emotions as they arise (Moster et al., 2008). However, research examining how such interventions interact with alcohol consumption to affect sexual aggression perpetration are lacking in the research literature, and more research is needed to determine their effectiveness in these circumstances.

4.5 Applying the Science of Behavior Change to Sexual Aggression

Just as the above studies have demonstrated the utility of laboratory-based methods to identify the cognitive, physiological, and emotional mechanisms underlying sexual aggressive behavior, such methods can also be leveraged to test potential intervention effects on these identified targets. Moreover, when coupled with alcohol administration protocols, intervention efficacy can be tested during both sober and intoxicated states, yielding a critical advance for the field of alcohol-involved sexual aggression. In a recent study (Davis et al., 2020b), we employed laboratory-based alcohol administration and a sexual aggression analogue protocol to test the efficacy of two interventions in addressing alcohol-involved sexual aggression through the SOBC experimental medicine approach. First, through examination of extant theory and empirical research, we identified a mechanism (emotion regulation) underlying sexual aggression to serve as our intervention target. We then developed two brief, online interventions to target this specified mechanism, one based on the tenets of cognitive restructuring (Ellis, 2008) and the other based on mindfulness principles (Linehan, 2014). Male participants at increased risk of alcohol-involved sexually aggressive behavior (i.e., heavy episodic drinkers with a self-reported history of sexual aggression) were then brought into the lab, where they were randomly assigned to receive one of the two interventions or an attention control. After training in the intervention, participants were randomly assigned to consume either alcoholic or nonalcoholic beverages. Next, we assessed both intervention and intoxication effects on the target mechanism of emotion regulation skills, as well as whether changes in these skills resulted in proximal reductions to sexual aggression intentions measured during the laboratory session. Also known as a proximal change experiment (Babcock et al., 2011; Gottman et al., 2005), such an approach can demonstrate that a target such as emotion regulation is indeed a mechanism of behavior change, as well as provide initial evidence and rationale for future larger-scale clinical trials (Gottman et al., 2005). Moreover, because proximal change experiments are amenable to the use of alcohol administration, such methods enable researchers to test interventions' efficacy for targeting mechanisms of behavior change during both sober and intoxicated states – an important innovation for addressing alcohol-involved sexual aggression as well as other mechanisms underlying alcohol-involved health behaviors (Davis et al., 2020b).

This SOBC application yielded results demonstrating that emotion regulation processes are indeed a proximal mechanism underlying sexual aggression. First, individuals who received the cognitive restructuring method reported improved emotional modulation and emotional clarity relative to control, which resulted in lower sexual arousal and anger, respectively, followed by lower sexual coercion intentions during a sexual aggression analogue. Second, both interventions improved emotional acceptance, resulting in lower nonconsensual sex intentions, but only for sober men, suggesting that alcohol intoxication may attenuate intervention

improvements. Thus, both interventions positively impacted emotion regulation skills within the context of a sexual aggression paradigm, which resulted in decreased sexual aggression intentions either directly or through changes in sexual arousal and anger. Notably though, the mindfulness intervention overall resulted in mixed effects – while it directly reduced nonconsensual sexual intentions, it also increased intentions to use coercive tactics for intoxicated men with more severe sexual aggression histories. Such results suggest that cognitive restructuring focused on emotion regulation may be an efficacious intervention for reducing sexually aggressive behavior and that caution should be used when employing mindfulness interventions to prevent future alcohol-involved sexual aggression, especially when employed among individuals with a previous history of perpetrating sexual violence (Davis et al., 2020b).

As demonstrated by the above-described study, alcohol administration protocols coupled with sexual aggression analogue methods are useful approaches for identifying and targeting proximal mechanisms of behavior change underlying alcohol-involved sexual aggression. Other recent methodological innovations could also serve as important paths for advancing the field. For example, Abbey's (Abbey et al., 2018) development and validation of a sexual aggression virtual reality paradigm is not only a useful tool for identifying sexual aggression mechanisms but could also be used to test the proximal efficacy of interventions targeting these mechanisms, much like the written sexual aggression analogue in Davis et al. (2020a, b). The more interactive, visual format could potentially be especially useful for mechanisms such as misperception of sexual intent, which at least in part are based on visual, nonverbal cues (Farris et al., 2008).

Other non-laboratory-based methods could also further our understanding and reduction of alcohol-involved sexual aggression. For example, ecological momentary assessment techniques could be utilized to identify mechanisms proximal to real-world sexual aggression. These mechanisms could then be targeted through ecological momentary interventions, which have demonstrated promise for improving health behaviors and mental health outcomes in real-time, real-world contexts (Heron & Smyth, 2010; Versluis et al., 2016). Just-in-time adaptive interventions (JITAIs; Nahum-Shani et al., 2017) that involve delivering specific content to an individual precisely when needed could further refine such approaches by tailoring intervention content to whether one is planning to/consuming alcohol. This would enable interventionists to more precisely target the mechanisms underlying alcohol-involved and sober sexual aggression to the extent that they differ.

4.6 Conclusions

To date, research in the field of sexual aggression has done an admirable job of identifying key cognitive, physiological, and emotional mechanisms underlying men's sexual aggression against women. However, much of this research does not consider the ways in which alcohol-related constructs may influence the function

and importance of these mechanisms during alcohol-involved sexually aggressive behavior. Moreover, effective interventions targeting these mechanisms are rare and do not specifically address alcohol's involvement or its mechanistic impact. We contend that SOBC approaches that couple rigorous scientific methods with examination of alcohol intoxication, alcohol expectancies, and other alcohol-related factors would significantly advance the field by facilitating research discoveries ripe for translation into real-world interventions. Given the extensive harm caused by sexual violence, continued efforts to develop interventions effective at reducing sexually aggressive behavior remain a priority.

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Chapter 5
Alcohol-Related Sexual Violence Perpetration Toward Sexual and Gender Minority Populations: A Critical Review and Call to Action

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5.1 Introduction

> "Don't you see," cried some, "if we find out how they're getting in the river, we can stop the problem… By going upstream, we can eliminate the cause of the problem!" – The Parable of the River.

In the parable of the river, villagers find a baby floating down a river. After pulling the baby out, another one floats down the river. Before long, there is a steady stream of babies floating down the river, and the villagers quickly become overwhelmed pulling them out, taking them home, and caring for them. Finally, one villager suggests that in order to eliminate the cause of the problem, they must look upstream to find out how the babies are getting into the river in the first place. In many ways, this parable mirrors the problem of sexual violence (SV) against the sexual and gender minority (SGM) community. Research indicates that SGM individuals experience higher rates of SV compared to cisgender or heterosexual peers (e.g., see Edwards et al., 2015; Flores et al., 2020; James et al., 2016; Messinger, 2011; Walters et al., 2013); yet more is known about the mental health sequelae of experiencing SV among SGM individuals than how to prevent SV from occurring. A central premise of the present chapter is that in order to eliminate the problem of

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SV toward the SGM community, efforts must focus on identifying who perpetrates SV and developing etiological models to understand what places these individuals at high risk for perpetration. In essence, we need to know who is throwing SGM people in the river and why they are doing it.

Data from the National Intimate Partner and Sexual Violence Survey (Walters et al., 2013) categorized sexual victimization experiences based on the sex of the perpetrator and found that (1) among lesbian and bisexual female survivors, nearly 85% reported that their perpetrator was a male, and (2) among gay and bisexual male survivors, over 70% reported that their perpetrator was male. However, the gender identity and sexual orientation of perpetrators were not assessed; thus, it is unclear if they were also members of the SGM community. Consistent with this observation, a review of 75 studies that assessed SV victimization in lesbian, gay, and bisexual people highlighted that sex assigned at birth, gender identity, and sexual orientation of the SV perpetrator are rarely assessed (Rothman et al., 2011). This weakness in the rigor of this research limits our understanding of who is most likely to perpetrate SV toward SGM individuals.

This weakness also extends to literature on the link between alcohol and SV in SGM populations. It is well-established that proximal alcohol use is a contributing cause of myriad forms of aggression (Parrott & Eckhardt, 2018), including SV perpetration (Abbey, 2002; George & Stoner, 2000; Testa, 2002). However, data on the effect of alcohol on SV perpetration have typically been demonstrated with respect to cisgender, heterosexual men's perpetration toward (presumably cisgender heterosexual) women (e.g., Abbey, 2002; Testa, 2002). Thus, consistent with the broader SV literature (Rothman et al., 2011), the alcohol-SV literature is characterized by a significant heteronormative bias, in that aspects of the perpetrator's identity are rarely assessed. Nevertheless, it is reasonable to suggest that proximal heavy drinking is also a contributing cause of (1) cisgender heterosexual men's SV perpetration toward SGM individuals and (2) SGM individuals' SV perpetration toward other SGM individuals. For example, nearly 75% of gay and bisexual survivors of SV reported that they believed the perpetrator was consuming alcohol prior to the assault (Hequembourg et al., 2015). Also consistent with this view, research indicates that transgender-identified people's frequency of heavy drinking is associated with their SV victimization (Coulter et al., 2015), which aligns with research indicating that drinking environments can foster SV perpetration (Testa & Cleveland, 2017).

These data just scratch the surface of the role of alcohol in SV perpetration toward SGM people and highlight the major challenge that faces researchers in this area. The link between alcohol and SV is extraordinarily complex and shaped by myriad factors, most notably the temporality of effects (i.e., alcohol use that precedes and/or is subsequent to SV), the extent to which alcohol serves as a causal contributor to SV perpetration, and the interconnectedness of one's role as a perpetrator and/or victim and the relationship context. Adding to this complexity, the stigma associated with sexual and gender minority identities introduces culturally specific constructs (e.g., minority stress) that must be integrated into extant theoretical models of the alcohol-SV link.

The primary aim of this chapter is to unpack this complexity. First, we will review relevant theory on stigma and minority stress, which provides the cultural context in which the present work is situated. Second, we document the scant empirical research literature on the effects of alcohol on SV perpetration toward SGM people, with particular attention to themes that emerge in related lines of research. Third, we advance an integrative theoretical model for alcohol-related SV perpetration that invokes (1) a metatheory (I^3 Model; Finkel, 2007, 2014; Finkel & Eckhardt, 2013), to organize risk and resilience factors across the social ecology, and (2) a proximal process theory (Alcohol Myopia Theory; Steele & Josephs, 1990), to explain the mechanism by which proximal alcohol use facilitates SV perpetration toward SGM populations as a function of individual differences in those factors. This integrative model will inform our review of research and prevention implications. Here, we seek to advance recommendations to strengthen the rigor of this research in a way that facilitates the translation of research findings into intervention or prevention programming that can be implemented easily into routine individual or public health practice.

5.2 Definitions and Theoretical Framework

5.2.1 Sexual and Gender Minority

The Institute of Medicine (2011) report on health among lesbian, gay, bisexual, and transgender people recognizes that this community is comprised of a heterogeneous coalition of groups that vary in numerous ways. In particular, this report emphasized that people vary in terms of their sexual orientation, gender identity, and gender expression. The extant literature invokes multiple terminologies to refer to these constructs, and thus, it is important to first establish the well-accepted definitions put forth by the Institute of Medicine report (2011). *Sexual orientation* refers to "an enduring pattern of or disposition to experience sexual or romantic desires for, and relationships with, people of one's same sex, the opposite sex, or both sexes" (p. 27). *Gender identity* refers to "a person's basic sense of being a man or boy, a woman or girl, or another gender (e.g., transgender, bigender, or gender queer – a rejection of the traditional binary classification of gender)" (p. 25–26). *Gender expression* reflects "the manifestation of characteristics in one's personality, appearance, and behavior that are culturally defined as masculine or feminine" (p. 26). Informed by this work, the National Institutes of Health (2019) defines SGM broadly to include people who endorse a range of sexual orientations (e.g., lesbian, gay, bisexual) and gender identities (e.g., transgender, queer), same-sex or same-gender attractions or behaviors, differences in sex development, and/or nonbinary constructs of sexual orientation, gender, and/or sex.

Literature that examines constructs, such as "antigay violence," "homophobia," or "antigay prejudice," is typically focused on the attitudes or behavior of a person who conforms with society's traditional conceptions of these constructs (e.g., a

cisgender heterosexual male whose gender expression is consistent with cultural norms regarding masculinity) in relation to a person who does not conform with the social expectations related to one or more of these constructs and is consequently perceived as nontraditional or even deviant. Thus, a target may be a person assigned male at birth, who identifies as a man (cisgender) and expresses traditional masculine characteristics yet challenges societal expectations by endorsing a nonheterosexual identity (e.g., gay). Alternatively, a target may not meet societal expectations in terms of their gender identity (e.g., a person assigned male at birth who identifies as a woman) and/or gender expression (e.g., a person assigned male at birth who manifests feminine characteristics).

Thus, while it may seem parsimonious to focus on the link between alcohol and SV perpetration toward *SGM people*, such work actually reflects the study of a coalition of subgroups, who exhibit numerous differences due to their variability in sexual orientation, gender identity, and/or gender expression as well as other intersecting demographic factors (e.g., sex assigned at birth, race, ethnicity). Moreover, gender and sexual identities informed by these constructs are broad and complex and can vary across the life course. Thus, specificity in these terminologies is critical to understand differences in these subgroups. However, it is also true that all these populations share a historically marginalized social status that is the basis of stigma related to one or more of the aforementioned constructs.

In accordance with this literature, the present chapter will employ the term *sexual and gender minority (SGM)* to parsimoniously refer to individuals from these populations. As appropriate, specific subgroups will be referenced as a function of their sexual orientation, gender identity, and/or gender expression. In most cases, we will use *sexual minority* in reference to any individual who endorses a nonheterosexual orientation (e.g., gay, lesbian, bisexual) and *gender minority* in reference to any individual (regardless of their sexual orientation) who endorses a gender identity, which is incongruent with their sex assigned at birth (e.g., transgender, nonbinary).

5.2.2 Sexual Violence

The Centers for Disease Control defines SV as sexual contact where consent is not obtained or given freely (Basile et al., 2014). SV occurs on a continuum from "minor" behaviors (e.g., catcalling, sexual objectification, verbal suggestions of intent to force someone to have sex) to more extreme behaviors (e.g., attempted or completed rape) (Stout & McPhail, 1998). Behaviors on the lower end of the continuum are problematic, because they are associated with deleterious health outcomes and also have the potential to escalate into more severe aggressive behavior (Gervais et al., 2014). Some research among college student populations indicates that SGM people experience higher rates of behaviors on the lower end of the continuum, such as sexual touching or harassment, than cisgender, heterosexual college students (Cantor et al., 2019; Mellins et al., 2017). Therefore, these experiences of SV suggest that SGM people are at risk of experiencing more severe forms of SV.

It is also critical to distinguish between SV perpetration and SV victimization. Indeed, the literature has historically been "siloed" in terms of the interplay between SV perpetration and victimization and the relationship contexts that influence those associations. This limits the ability to consider simultaneously how alcohol use is *proximally and temporally related* to perpetration and/or victimization and the contexts that shape these associations (e.g., intimate vs. non-intimate relationships). The lack of rigor in this area is a key barrier to progress. Further, within intimate relationships, little is known about the prevalence and risk factors for bidirectional, compared to unilateral, SV. Among cisgender heterosexual and SGM couples who report some form of intimate partner violence, approximately half report that this violence is bidirectional (for review, see Langhinrichsen-Rohling et al., 2012; Messinger, 2018). However, there is a dearth of research on rates of bidirectional SV within intimate relationships, with few exceptions. For example, recent data suggests that among cisgender heterosexual couples, wherein at least one partner reported heavy alcohol use and prior IPV perpetration, 65% of couples reported bidirectional SV (Grom et al., 2021). Unfortunately, the rates and risk factors for bidirectional SV in couples with one or more SGM partners remain unclear.

5.2.3 Sexual and Gender Minority Stigma: A Conceptual Framework

Theorists have argued that cultural ideologies and institutions provide the basis for individuals' negative beliefs and enactment of these beliefs toward sexual and gender minorities (Herek, 2000, 2007, 2016; Kimmel, 1997). Thus, we adopt a heuristic framework and terminology, rooted in the constructs of sexual stigma and gender minority stigma, which recognize the existence and operation of stigma directed toward nonnormative sexual orientations, gender identities, experiences, and/or expressions at both societal and individual levels. Advanced by Herek (2007), *sexual stigma* is defined as "the negative regard, inferior status, and relative powerlessness that society collectively accords to any non-heterosexual behavior, identity, relationship, or community" (p. 906–907); in the same spirit, *gender minority stigma* is defined as "stigma directed at non-normative gender identities, experiences, and expressions, as well as gender minority communities" (Herek, 2016, p. 387). Sexual stigma and gender minority stigma are fundamentally rooted in systems that privilege heterosexual and cisgender individuals (Herek, 2007; Winter et al., 2016) and that sanction socially shared knowledge that nonnormative sexual and gender identities are devalued.

At the societal level, sexual and gender minority stigma are reflected in social customs and institutions (e.g., norms about gender roles, religion, laws, and language). This sociocultural context sanctions and normalizes individual-level antipathy toward SGM people. For example, homosexuality is criminalized in 75 countries and is even punishable by death in ten countries (Human Rights Campaign, 2015). There are currently 47 countries where it is illegal to change gender, and only 96

countries have processes that allow transgender people to legally change their gender. However, of these 96 countries, only 25 are free of "prohibitive requirements" that make it easier for transgender individuals to change their gender (ILGA World, 2020). In the United States, notable enactments of sexual and gender minority stigma were reflected by "Don't Ask, Don't Tell (DADT)" and so-called bathroom bills. DADT was the US military policy from 1993 to 2011 (Parco & Levy, 2013), which prohibited discrimination against SGM people while simultaneously prohibiting those who did not conceal their sexual or gender minority identity from serving. Bathroom bills proposed to restrict transgender individuals' access to multiuser restrooms, locker rooms, or other sex-segregated spaces in schools and/or public spaces. Sixteen states proposed to introduce this legislation, which would have required individuals to use the gender-assigned bathroom that is consistent with their assigned sex at birth rather than their gender identity or expression. Although one such bill was passed in North Carolina in 2016, it has since been repealed (National Conference of State Legislators, 2019). Collectively, these policies are stigmatizing, because they deny sexual and gender minority people the rights held by cisgender and heterosexual people.

A comprehensive review of how sexual and gender minority stigma manifest at the societal level is beyond the scope of this chapter (for reviews, see Herek, 2007, 2009, 2015); however, norms about gender roles – and masculine ideology specifically – merit specific attention here, given its strong association with SV perpetration (see Leone & Parrott, 2018). Masculinity ideologies represent the cultural standards for manhood within a given society, community, or social context (Connell, 2005; Thompson Jr. & Pleck, 1995). In particular, the development of heterosexual masculinity, particularly during adolescence, includes socially constructed norms, rules, and expectations that dictate how men are supposed to think, feel, and behave. Numerous theorists (e.g., Brannon, 1976; Deaux & Kite, 1987; Herek, 1986; Kimmel, 1997; Kite, 2001; Pleck, 1981) agree that these cultural standards are the basis for men's expectations of desirable attributes (e.g., dominant, tough, heterosexual) as well as undesirable attributes (e.g., submissive, weak, homosexual). These ideologies provide the sociocultural backdrop that can motivate men to differentiate between the masculine in-group and the feminine outgroup via the perpetration of all forms of aggressive behavior (for a review, see Leone & Parrott, 2018), including the denigration and perpetration of SV toward SGM people.

5.2.3.1 Sexual and Gender Minority Stigma: Effects on SGM People

These societal-level manifestations of sexual and gender minority stigma affect SGM people at the individual level in three primary ways (for a review, see Herek, 2007). First, *enacted stigma* refers to sexual and gender minorities' direct experience of stigma, usually via direct physical, psychological, and/or sexual

victimization related to their sexual orientation or gender identity. These direct victimization experiences cause psychological distress and require them to adapt psychologically to that stress, often in maladaptive ways. Second, even in the absence of direct stigma-based victimization, SGM people can be affected by societal-level manifestations of sexual and gender minority stigma, such as when they witness other SGM people's experiences of enacted stigma. Here, *felt stigma* refers to the relatively constant expectation that one will be discriminated against or victimized and the consequent heightened psychological vigilance and stress required to monitor for such threats. Third, *internalized stigma* (also referred to as internalized homophobia [Weinberg, 1972], internalized heterosexism [Szymanski & Chung, 2003], and internalized homonegativity [Mayfield, 2001]) refers to a sexual or gender minority person's acceptance of sexual or gender minority stigma into their self-concept.

Herek's stigma-based framework provides a parsimonious explanation of the interplay between societal- and individual-level stigma; however, the manner in which these forces impact physical and mental health is most frequently conceptualized within minority stress theory (Meyer, 2003, 2013). This framework posits that SGM populations experience chronic stress related to their stigmatized identities, which in turn is associated with myriad negative health disparities (for a review, see Dürrbaum & Sattler, 2020; Feinstein & Dyar, 2017; Newcomb & Mustanski, 2010), including alcohol use (Goldbach et al., 2014), violence (Edwards et al., 2015), and their nexus (Shorey et al., 2019). Considered together, the psychological distress experienced in response to enacted and felt stigma may be termed "externalized sexual and gender minority stress," whereas the psychological distress associated with internalized stigma may be termed "internalized sexual and gender minority stress."

An extension of minority stress theory (Hatzenbuehler, 2009) posits that minority stress leads to negative health outcomes via interrelated affective, cognitive, and interpersonal mechanisms. SV perpetration has been explained via these mechanisms in cisgender heterosexual men (e.g., detached sexual behavior, sexual dominance, sexual promiscuity; see Malamuth & Hald, 2016); however, these mechanisms also reflect vulnerabilities that are unique to SGM people, such as internalized shame (Newcomb & Mustanski, 2010), rejection sensitivity (Pachankis, 2007), and concealment (Pachankis, 2007). Put simply, external and internal SGM stressors compromise affective and cognitive regulation as well as interpersonal effectiveness. As such, SGM individuals are more likely to engage in maladaptive coping, such as problematic alcohol use and interpersonal violence. Indeed, it is well-documented that sexual and gender minority stress (both external and internal) are positively associated with heightened rates of alcohol use and violence perpetration and victimization in SGM people (Balsam & Szymanski, 2005; Brubaker et al., 2009; Edwards et al., 2015; Lewis et al., 2012; Stephenson & Finneran, 2017).

5.2.3.2 Sexual and Gender Minority Stigma: Effects on Cisgender and Heterosexual People

Extant literature typically considers the effect of sexual and gender minority stigma on SGM people. However, these social forces also impact cisgender and heterosexual people via the same mechanisms (for a review, see Herek, 2007). Because sexual orientation is concealable, heterosexual people can be labeled as any nonheterosexual identity. In the same vein, because gender minority people commonly conceal the fact that their gender identity is not congruent with their sex assigned at birth, cisgender people are similarly vulnerable to being labeled as non-cisgender. Because cisgender and heterosexual people are vulnerable to *enacted stigma*, they also experience *felt stigma,* which can have a particularly strong impact on cisgender, heterosexual men. It is widely theorized that the masculine identity is fragile and elusive (Eisler & Skidmore, 1987; Kaufman, 1997; Pleck, 1981) and thus is in perpetual need of public validation (Kimmel, 1996). For cisgender, heterosexual men, failure to adhere to male gender norms may result in actual or perceived negative consequences (Martin & Ruble, 2010), including being perceived as gay (Bosson & Vandello, 2011). As a result, felt stigma can motivate cisgender and heterosexual people to employ self-presentation strategies that demonstrate publicly their conformity to normative sexual and gender identities. An extreme manifestation of this process is the perpetration of violence, including SV, toward SGM people. For men in particular, these exaggerated masculine displays are a powerful way to demonstrate one's heterosexual masculinity (i.e., a lack of femininity) to other men (Kimmel, 1997; Tomsen, 2002). In fact, Franklin (2000) identified this process, which she termed "peer dynamics," as the most salient motivation for bias-motivated aggressive behavior toward sexual minorities, accounting for three times more variance than other putative mechanisms.

Internalized sexual stigma is manifested in heterosexual people as *sexual prejudice*, which reflects heterosexuals' negative attitudes toward homosexual behaviors, sexual minority identities, and communities of sexual minority individuals (Herek, 2000, 2007). Similarly, *internalized gender minority stigma* is manifested in cisgender people as *transgender prejudice*, which reflects "negative attitudes toward those outside the traditional gender binary of male and female, either in behavior, appearance, or both" (Huffaker & Kwon, 2016, p. 200). Notably, many of the correlates of sexual prejudice are also correlated with transgender prejudice, including authoritarianism, religious fundamentalism, and hostile sexism (Nagoshi et al., 2008). Not surprisingly, there is also a strong correlation between sexual prejudice and transgender prejudice (Hill & Willoughby, 2005; Nagoshi et al., 2008).

Individual-level effects of sexual and gender minority stigma on cisgender and heterosexual people are particularly relevant to the study of violence toward SGM individuals. For instance, it is well-established that sexual prejudice and felt stigma are key risk factors for heterosexual men's perpetration of physical aggression toward sexual minorities (for a review, see Parrott & Leone, 2017). However, as noted previously, SV toward SGM individuals is often perpetrated by cisgender, heterosexual men. While this may appear counterintuitive, the putative mechanisms

that motivate these acts are readily conceptualized through the collective lens of enacted, felt, and internalized stigma.

5.2.3.3 Summary

Invoking a stigma-based framework is a critical prerequisite to understanding the etiology of alcohol-facilitated SV toward SGM people. Indeed, alcohol-facilitated SV toward SGM individuals can be perpetrated by people of various sexual and/or gender identities who endorse individual risk factors rooted in sexual and gender minority stigma. Moreover, intersecting identities within and between perpetrators and victims can magnify the stigma felt by SGM individuals as well as increase the likelihood that certain perpetrators target SGM people with multiple marginalized identities. This framework parsimoniously describes how sexual and gender minority stigma affects all people and, in turn, suggests how that impact can influence SV perpetration toward SGM individuals. Thus, this framework provides the foundation for our proposed integrative model and its implications for future research and proposed prevention efforts.

5.3 Alcohol-Related SV Perpetration Toward SGM Populations

Decades of treating nonnormative sexualities and gender identities as markers of mental illness and criminality have resulted in an extremely narrow body of literature focused on SV perpetration toward SGM people (McKay et al., 2019; Young & Meyer, 2005). In light of this, it is not surprising that empirical studies on the association between alcohol and SV perpetration toward SGM people are almost nonexistent. Among the few available studies (e.g., Davis et al., 2016; Hequembourg et al., 2015; Peitzmeier et al., 2015), data suggest (1) alcohol-related contexts are one of the most likely settings for SV victimization; (2) SV survivors often report alcohol use by the perpetrator prior to the assault, and (3) there is a positive association between problematic alcohol use and likelihood of perpetrating physical or SV toward an intimate partner. However, it should be noted that the methodological rigor of these studies suffers from weakness that characterize this field in general. As reviewed later, these weaknesses include research designs and measurement approaches that do not accurately capture the proximal and temporal occurrences of alcohol use and SV perpetration.

While these findings bear similarities to the substantive evidence base on (presumably cisgender) men's perpetration of SV toward (presumably cisgender) women, they fall woefully short in informing a research agenda to prevent alcohol-facilitated SV toward SGM people. What can we learn in the absence of rigorous research in this area? In our review of the literature on SV in SGM populations, two

notable themes emerged. First, there is a severe paucity of information on who is perpetrating acts of SV toward SGM people. Extant research either specifically samples same-sex couples and focuses on SV within an intimate relationship or asks SGM people to report on SV victimization experiences using measures that do not capture the identities of their perpetrators. In both instances, the use of alcohol by the perpetrator is rarely assessed. Second, there is some more research (though still not an abundance) that examines the link between alcohol use and negative health outcomes in SGM people. While these studies may assess the association between an SGM person's alcohol use and SV victimization, they do not assess the effect of alcohol on SV perpetration toward SGM people.

This is unequivocally not the case in research using samples of (presumably) heterosexual participants. In this work, it is well-established from a range of rigorous research methodologies that proximal alcohol use is a contributing cause of SV perpetration (Abbey, 2002; George & Stoner, 2000; Testa, 2002). Although we are unaware of any theoretical or empirical reason to think that alcohol would not also be a contributing cause of SV perpetration toward SGM people, the empirical research base to date does not allow for this determination. Indeed, as a result of the aforementioned issues, the question of the role of alcohol in SV perpetration is almost impossible to answer based on the available data.

Why is this the case? To begin, the SV epidemic is framed predominately around the heteronormative investigation of violence perpetrated by men and toward women. Evidentially, this makes sense. Women are significantly more likely to experience SV during their lives than men, and the majority of sexually violent acts against women are perpetrated by men (Tharp et al., 2013). However, SGM people experience SV victimization at rates comparable to, if not greater than, cisgender heterosexual women (e.g., see Edwards et al., 2015; Flores et al., 2020; James et al., 2016; Messinger, 2011; Walters et al., 2013). Thus, why is it that research does not focus squarely on this disparity? While the answer to this question is likely due to multiple factors, it is clear that limited sources of funding have played a key role. A study that reviewed records from the NIH RePORTER found that between 1989 and 2011, only 0.1% of NIH-funded studies included a non-HIV/AIDS focus specifically on the health of LGBT populations and, among those very few studies, 3.3% focused on violence and 12.9% focused on alcohol use (Coulter et al., 2014). Consistent with these data, extraordinary efforts were necessary during this time period to provide seed funding and bolster competitive NIH grant applications on SGM health (e.g., see Kimmel et al., 2020; Parrott, 2020).

Put simply, our research enterprise marginalized an already marginalized population. While changes in these practices have been observed in recent years, continued structural changes will be required (e.g., see Abbey & Helmers, 2020). Even with such progress, researchers will ultimately bear the burden of applying the best possible science to understand the role of alcohol in SV perpetration toward SGM individuals. To this end, we propose an integrative theoretical model that serves as one step toward reversing this injustice.

5.4 An Integrative Model

The preceding review has established that the field lacks a comprehensive understanding of the link between alcohol use and SV perpetration toward SGM people. Thus, efforts to develop effective, culturally informed prevention and intervention efforts for alcohol-related SV are limited. To guide research and prevention efforts, we expand upon an integrative theoretical model originally designed to guide research on intimate partner violence in sexual minorities (Shorey et al., 2019). This model invokes (1) a "metatheory" (I^3 Model), to organize risk and resilience factors at the individual and dyadic level, and (2) a proximal process theory (alcohol myopia theory), to explain the mechanism by which proximal alcohol use facilitates SV as a function of individual differences in those factors (Parrott & Eckhardt, 2018).

5.4.1 The I^3 Model

The I^3 Model ("I-Cubed") is a multifactorial metatheory largely used to predict aggressive behavior, typically within intimate relationships (Finkel, 2007, 2014; Finkel & Eckhardt, 2013). The I^3 Model suggests that we can predict whether a given social interaction will result in aggression if we can discern the strength of *I*nstigation, degree of *I*mpellance, and presence of *I*nhibitory factors. Research supports the use of the I^3 Model to predict alcohol-related interpersonal violence generally (Parrott & Eckhardt, 2018) and SV specifically (Grom et al., 2021). However, this model has not been applied to alcohol-related SV (for an exception, see Ngo et al., 2018).

Based on the I^3 Model, the likelihood of SV perpetration can be determined by weighing the relative strength of three factors: instigators, impellors, and inhibitors. *Instigating factors* produce the initial momentum toward an aggressive action. In SGM people, enacted, felt, and/or internalized stigma can result in acute minority stress, which can provide this initial momentum. Similarly, in cisgender heterosexual men, the threat to one's masculinity imposed by enacted or felt stigma – which is often experienced in the form of negative affect or anger (for a review, see Parrott, 2008) – can provide that initial momentum.

Once instigation occurs, the relative balance of impelling and inhibiting factors determines the strength of an aggressive response. *Impelling factors* are dispositional or situational factors that psychologically prepare an individual to experience a strong urge to aggress when encountering instigation in a particular context. In SGM people, chronic minority stress (whether external or internal) is likely to make them more sensitive to the aforementioned instigating triggers. Similarly, in cisgender, heterosexual men, masculinity and sexual prejudice are enduring factors that likely make them more receptive to instigating triggers (e.g., threats to one's masculinity related to felt stigma). Thus, instigating and impelling factors interact to determine the likelihood that the person will perpetrate SV. *Inhibitory factors* increase an

individual's capacity to override the effects of instigating and impelling forces. Thus, inhibitors, which reflect individual- and community-level factors that promote resilience (for a review, see Meyer, 2015), set the threshold beyond which instigator- and impellor-driven urges would result in SV perpetration. Finally, researchers commonly expand the I^3 Model to include disimpellors and disinhibitors (e.g., Finkel, 2014; Sprunger et al., 2015). Compared to impellors, *disimpellors* are factors that reduce the salience of instigators or otherwise interfere with the strengthening of an urge to engage in aggression (Finkel, 2014). Meanwhile, compared to inhibitors, *disinhibitors* reduce the threshold beyond which instigator- and impellor-driven urges would result in aggression, because they reduce a person's ability to override the weight of an impelling force (Finkel, 2014). To this end, evidence strongly suggests that alcohol does not unilaterally impel acts of aggression via direct pharmacologic manipulation; rather, alcohol intoxication functions as a disinhibitor, because it produces key neuropsychological changes that alter executive functioning and impede self-regulatory capacities (Giancola et al., 2010). Put another way, alcohol facilitates SV by taking one's foot off the brake pedal (i.e., disinhibition) rather than by stepping on the gas pedal (i.e., impellance).

In summary, the I^3 Model suggests that we can enhance predictions of whether a given social exchange will result in SV perpetration, if we can discern the strength and patterning of instigation, (dis)impellance, and (dis)inhibition factors. Thus, this model is ideal for understanding whether proximal alcohol use (a disinhibitor) alters the threshold at which the effects of instigating (e.g., acute sexual and gender minority stress, state anger) and impelling forces (e.g., chronic sexual and gender minority stress, masculinity, sexual prejudice) contribute to SV perpetration.

5.4.2 Alcohol Myopia Theory

The proximal effect of alcohol on aggression is most frequently interpreted from the etiologic standpoint of alcohol myopia theory (AMT; Steele & Josephs, 1990). AMT purports that the pharmacological properties of alcohol narrow attentional focus, restrict the cues individuals perceive, and reduce individuals' capacity to process meaning from information they do perceive. One model within AMT, the attention-allocation model, posits that alcohol impairs attentional capacity, which then restricts the inebriate's ability to perceive and process instigatory and inhibitory cues. As a result, intoxicated individuals allocate their attention such that they perceive and process only the most proximal, salient cues of a situation (e.g., a verbal insult) to the exclusion of less salient and often more distal, inhibitory cues (e.g., legal consequences of aggression). AMT has garnered substantial empirical support as a model for understanding *how* alcohol facilitates aggression (for reviews, see Giancola et al., 2010; Parrott & Eckhardt, 2018).

Thus, it follows from AMT, and the attention-allocation model specifically, that proximal alcohol use should potentiate SV perpetration by narrowing attention onto salient, instigatory cues (e.g., desire for sex, felt stigma) and away from inhibitory cues (e.g., lack of explicit consent). This hypothesis is supported by numerous reviews of laboratory experiments involving presumably cisgender, heterosexual men (e.g., Abbey & Wegner, 2015; Abbey et al., 2014; Crane et al., 2016; Davis et al., 2014; George & Stoner, 2000), which collectively demonstrate that acute alcohol intoxication increases laboratory-based SV perpetration toward women.

5.4.3 *Integrative Summary*

A key advantage of the I^3 Model is its theoretical inclusiveness, which allows researchers to incorporate relevant theories to examine how hypotheses related to SV risk can be translated into process-oriented mediation models. Alcohol myopia theory fleshes out the inhibitory process dimension of the I^3 Model. This novel integration is depicted in Fig. 5.1. Alcohol myopia theory also emphasizes the importance of cue salience and, more specifically, indicates that alcohol is most likely to facilitate SV to the extent that SV-promoting cues (i.e., instigators and impellors) are more salient to the inebriate than SV-inhibiting cues (i.e., disimpellors, inhibitors). Put another way, determining the likelihood of alcohol-facilitated SV is based on the premise that *cue salience* is the critical predictor of attentional focus; however, individuals certainly differ in what they perceive to be salient as well as in their

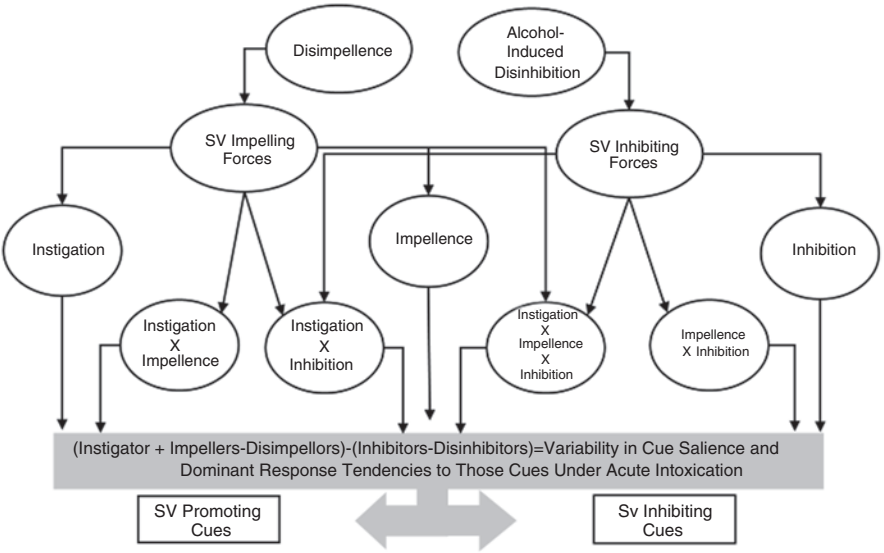

Fig. 5.1 Integrative theoretical model of alcohol-related SV perpetration

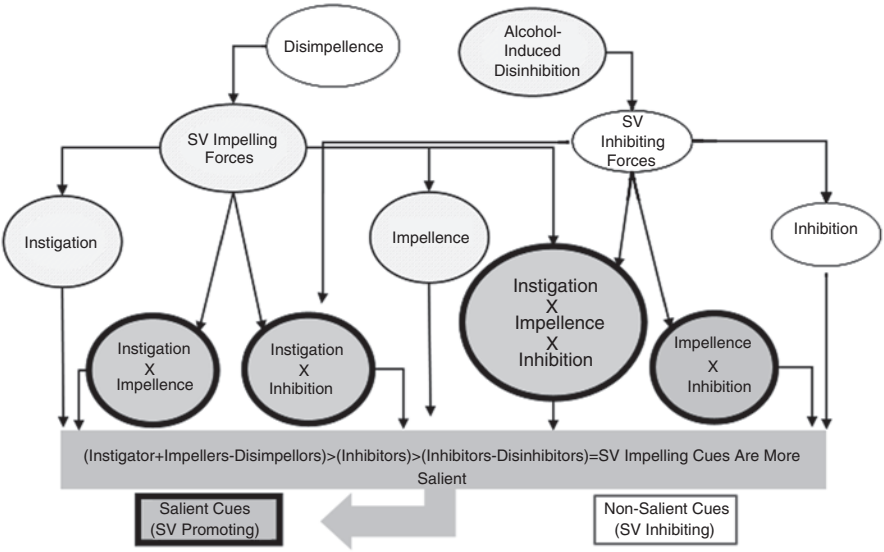

Fig. 5.2 The perfect storm. (Note: Stronger effects are indicated by (1) bolder, relative to lighter, outlines and (2) shaded, relative to light, circles)

dominant response to a given salient cue. These individual differences are captured by the I^3 component of the integrative model, and Fig. 5.2 depicts the "perfect storm," wherein instigation, impellance, and disinhibition are strong and disimpellance and inhibition are weak – thereby heightening the salience of SV promoting, relative to SV inhibiting, cues. Thus, the nexus of the integrative model lies in the premise that alcohol intoxication serves as a contributing cause of SV perpetration as a function of I^3-informed variability in perceived cue salience and response tendencies to those salient cues.

5.5 Implications for Research and Prevention: A Call to Action

The alcohol-SV link is a serious and complex public health and societal problem with broad impacts in many domains. Despite clear evidence that alcohol use is a proximal risk factor for SV perpetration in cisgender, heterosexual populations (Abbey, 2002; George & Stoner, 2000; Testa, 2002), researchers have been less successful at establishing etiological models that characterize the process-based mechanisms of those effects. Similarly, proximal mechanisms for SV perpetration toward SGM individuals are also poorly understood (Blondeel et al., 2018), and alcohol-based mechanisms have not been evaluated to date. Thus, resulting interventions target theoretically based, rather than evidence-based, mechanisms of action. This

problem is not unique to this field. A critical impediment to translational research is that behavioral scientists conducting efficacy research rarely invest significant resources to demonstrate that interventions affect relevant psychosocial mediators (Glasgow et al., 2003; Salazar et al., 2019). Importantly, even when such mechanisms have been tested directly or indirectly, it has been extremely difficult for single, stand-alone research projects to comprehensively address the interconnected nature of alcohol use and violence in sufficiently powered samples of the most at-risk and vulnerable subpopulations. This gap is particularly evident for SV perpetrated toward SGM populations, because factors related to sexual and gender minority stigma (e.g., minority stress, sexual prejudice, adherence to gender roles) surely influence these putative mechanisms. Because SGM people experience heightened rates of SV victimization relative to heterosexual and cisgender people (Edwards et al., 2015; Flores et al., 2020; James et al., 2016; Messinger, 2011; Walters et al., 2013), understanding these complexities is critical to the development of interventions for this particularly vulnerable population.

The proposed integrative model has high potential to address these gaps and thus advance the field. It provides an organizational structure for predicting risk for alcohol-facilitated SV perpetration that is not clearly defined within stigma-based frameworks (e.g., Herek, 2007) or minority stress theory (e.g., Hatzenbuehler, 2009; Meyer, 2003). Thus, it can organize the study of intersecting identities by disentangling acute and chronic minority stressors related to those identities. In turn, researchers will be better positioned to examine interactive effects of those stressors and proximal alcohol use on SV perpetration. To this end, invoking alcohol myopia theory brings a necessary focus to the proximal effects of alcohol and how it may alter the threshold at which the effects of instigating (e.g., acute sexual and gender minority stress, state anger) and impelling forces (e.g., chronic sexual and gender minority stress, masculinity, sexual prejudice) contribute to SV perpetration. Importantly, the extent to which alcohol alters one's threshold for SV perpetration lies in the extent to which instigating and impelling forces collectively elicit cues that are *highly salient* and for which *sexual behavior is the dominant response tendency*. This focus highlights the need for rigorous designs that allow for the assessment of proximal and temporal effects. As the evidence base develops, this integrative model can also be utilized to inform best practices for prevention.

5.5.1 Implications for Research

Recent reviews of alcohol use (Gilbert et al., 2018; Hughes et al., 2020) and interpersonal violence (Blondeel et al., 2018; Yerke & DeFeo, 2016) in SGM populations have identified critical weaknesses in the rigor of this literature, which include the following: (1) few studies that distinguish between sex assigned at birth, sexual orientation, and gender identity; (2) inadequate sample sizes; (3) poor operational definitions, and thus weak measurement, of alcohol use and SV; and (4) dependence on cross-sectional study designs that cannot test temporal relations between risk

factors and alcohol use or SV perpetration and victimization. Given these weaknesses, we propose the following recommendations.

5.5.1.1 Eliminate Heteronormative Sampling Biases

Research on the alcohol-SV link suffers from a heteronormative sampling bias. That is, sampling methods assume participants identify as cisgender and heterosexual or exclude SGM people for parsimony. Relatedly, it is also rare for research on SV perpetrators to assess sex assigned at birth, gender identity, gender expression, and sexual orientation (Rothman et al., 2011). This weakness not only prevents researchers from ascertaining who is perpetrating SV toward SGM people, but it in turn prevents researchers from understanding the varied etiological mechanisms that underlie SV toward SGM people. Collectively, these approaches are directly responsible for the marginalization of SGM people in this research literature. At the core of this problem is that, relative to heterosexual and cisgender individuals, SGM people face unique health risks due to their experience of a unique set of stressors. When these identities are not assessed or considered, *these unique stressors are also not considered*.

As research begins to address these weaknesses, the proposed integrative model will allow for the inclusion of factors that are associated with SV risk in perpetrators who vary across these dimensions. For example, although the effects of felt stigma manifest differently in SGM, relative to cisgender heterosexual people, they can be conceptualized as instigators in both SGM perpetrators (e.g., externalized sexual minority stress) and cisgender heterosexual male perpetrators (e.g., threatened masculinity).

5.5.1.2 Increase Methodological Rigor

To have high impact and best inform development of prevention approaches, studies must utilize research designs and measurement approaches that can accurately and precisely capture the proximal and temporal occurrences of alcohol use and SV. As previously noted, there are few studies that focus on perpetrators of SV toward SGM people, and we could not identify any studies that examined perpetrator alcohol use as a *proximal* antecedent to SV. The lack of data, and thus understanding, of this association, in many ways, mirrors the literature in cisgender, heterosexual populations from 40 to 50 years ago (Carpenter & Armenti, 1972; Wilson, 1977). At that time, Carpenter and Armenti (1972) noted that scholars often assumed that alcohol caused SV despite the confoundingly small amount of empirical data to support that assumption. They concluded that this lack of research "indicates how little modern society knows of the relationships of three of its more significant aspects – alcohol, sexual behavior, and aggression" (p. 509). Since then, much has been learned about the effect of alcohol on sexual behavior generally, and SV perpetration specifically, in cisgender, heterosexual populations. The same conclusion

cannot be made with respect to SGM victims. Thus, there is a critical need for studies that employ a range of research designs, which will allow for the convergence of evidence that speaks to the proximal effect of alcohol on SV toward SGM people.

Based on work with cisgender and heterosexual populations, such work will likely begin with the use of qualitative and cross-sectional designs. Indeed, these designs are typically easier to employ, allow for more rapid data collection, and require fewer resources relative to longitudinal or laboratory-based designs. While informative, we must be mindful that these designs do not allow for the modeling of temporal associations between variables. This need is best met via the use of laboratory-based experimental designs, longitudinal panel designs, and intensive longitudinal designs (e.g., experiential sampling through daily diaries or ecological momentary assessments). Among these, only experimental and intensive longitudinal designs are able to assess the *proximal and temporal effects* between variables. To this end, studies of cisgender, heterosexual individuals that examine alcohol use as proximal antecedent to SV violence perpetration have successfully employed experimental (e.g., Abbey & Helmers, 2020) and intensive longitudinal designs (e.g., Shorey et al., 2014; Testa et al., 2019). As a result, there is considerable cross-method convergence to demonstrate that alcohol use is a contributing cause of SV perpetration among cisgender, heterosexual men (e.g., George & Stoner, 2000). A clear and attainable goal for research focused on alcohol-facilitated SV perpetration toward SGM individuals is to employ designs and methods that are of comparably high methodological rigor. In doing so, we will better understand the alcohol-SV perpetration link and, in turn, be better equipped to address questions that continue to challenge the alcohol-violence field in general, namely, the identification of the most influential instigating and inhibiting factors and associated process-based mechanisms for alcohol-facilitated violence (Leonard & Quigley, 2017; Parrott & Eckhardt, 2018). As these complexities are better understood, interventions can be directed at these fundamental determinants.

It is well-established that SV can occur within the context of intimate relationships (Bagwell-Gray et al., 2015). However, when we focus specifically on mechanisms for alcohol-facilitated SV perpetration within intimate relationships, the literature is sparse (for exceptions, see Gallagher et al., 2010; Lisco et al., 2012). Thus, etiological models of alcohol-facilitated sexual intimate partner violence (IPV) remain relatively underdeveloped for all populations, and SGM populations in particular.

To this end, there are compelling reasons for understanding dyadic factors that may contribute to alcohol-facilitated IPV (Eckhardt et al., 2019). In research on nonsexual forms of IPV with cisgender, heterosexual populations, it is increasingly common to take a dyadic approach by using the Actor-Partner Interdependence Model (APIM) analytic framework (Kenny & Cook, 1999; Kenny et al., 2006). Relative to an analysis of only one partner's characteristics, this approach more accurately models IPV perpetration and victimization risk by considering the interpersonal nature of relationship; specifically, it provides the unique ability to examine potential effects of both partners' characteristics (i.e., instigating, impelling, and inhibiting factors) on IPV perpetration and victimization while accounting for the

other partner's characteristics and perpetration. For instance, research with cisgender, heterosexual couples suggests that both actor and partner alcohol and substance use is associated with S-IPV perpetration (e.g., Low et al., 2016) and nonsexual IPV perpetration (e.g., Leone et al., 2016). Thus, whereas research has often focused on the role of alcohol use as a disinhibitor of perpetrator IPV, an APIM framework provides the opportunity to examine how the interpersonal dynamics of a *partner's alcohol use* may also relate to Actor S-IPV perpetration.

However, only one study to date has examined risk factors for cisgender, heterosexual people's sexual IPV perpetration within the dyadic context (Grom et al., 2021). No study has used this analytic approach to study SGM people's sexual IPV perpetration or to model the proximal effect of alcohol on sexual IPV perpetration. Collectively, this work suggests that conclusions about the proximal effect of alcohol on sexual IPV perpetration toward SGM people will be limited if the interpersonal nature of IPV is not considered. Applying an APIM framework to the study of alcohol-related sexual IPV is consistent with the Institute of Medicine's (2011) prioritization of a social-ecological perspective in the study of LGBT health.

In summary, we can draw several important conclusions from the extant literature. First, there is little data on the link between alcohol use and SV perpetration toward SGM people. This need must be met with the use of multiple and rigorous methodological designs. There must also be a particular focus on designs that can identify the proximal and temporal association between alcohol and SV perpetration. Second, as the use of these methods begin to clarify the proximal effect of alcohol on SV perpetration, we need to understand in whom, and in what situations, these effects are mostly likely to be observed. This latter question must consider the perpetrator-victim relationship, inclusive of the relationship context. Until these goals are met, the field will remain significantly limited in its ability to develop prevention approaches.

5.5.1.3 Design Research to Assess Differences Within the SGM Population

As has been emphasized in this chapter, few studies on SV perpetration toward SGM individuals assess, let alone distinguish between, the perpetrator's sex assigned at birth, sexual orientation, and gender identity. Importantly, for studies that include a focus on sexual and/or gender minority perpetrators, it will also be critical to assess these constructs. Specifically, as research questions dictate, sampling approaches should be designed to capture and assess the broad diversity of identities among the SGM population or target a specific subgroup(s). When specific subgroups are the focus of the research, the precise assessment of these identity constructs in sufficiently powered samples will allow researchers to examine group differences in relevant outcomes of interest.

5.5.1.4 Incorporate an Intersectional Approach

Intersectionality theory posits that multiple forms of oppression converge to create social conditions, leading to discrimination over subpopulations (Crenshaw, 1989, 1990). The multiple oppressions experienced by SGM populations include stigma and discrimination related not only to their sexual orientation and to their gender identity but also to their race/ethnicity and class. Although the literature indicates that these interlocking oppressions result in extreme disparities in rates of mental health, violence, and heavy alcohol use (Arayasirikul et al., 2018; Bazargan & Galvan, 2012; Bockting et al., 2013; Carmody et al., 2020; Institute of Medicine, 2011; Parent et al., 2019), this body of research has focused mainly on victimization and the subsequent negative health consequences. An examination of how these interlocking oppressions result in SV perpetration is lacking.

A major tenet of the intersectional approach is an assumption that an individual's experience and their health are not simply the sum of their parts. For example, what it means to be a lesbian and the associated health implications may be different for Black lesbians relative to White lesbians. It is not appropriate simply to examine differences in any one health issue by race and add those to differences found by sexual orientation. Research is greatly needed that can more specifically (1) document inequalities in SV perpetration, specifically alcohol-facilitated SV perpetration, at these varying intersectional positions, and (2) study the potential individual- and group-level causes that may drive these observed inequalities. For example, it will be important to understand the specific and unique stressors that act as instigators for SV perpetration among Black, gay men, as we cannot assume that they would be the same for White, gay men. Similarly, identifying the dispositional or situational factors that act as impelling factors that position Latino transmen to perpetrate is likely different for Asian transmen. Furthermore, if alcohol acts as a disinhibitor for SV perpetration among White, transwomen, does it similarly reduce the threshold for SV perpetration among Black, transwomen? Incorporating intersectionality into health research among racially diverse heteronormative, cisgender populations has a host of methodological challenges (see Bauer, 2014); however, within the context of research with racially and economically diverse SGM individuals, the complexities and challenges are even greater. With the call made to better understand in whom, and in what situations, the proximal effects of alcohol on SV perpetration are mostly likely to be observed, an intersectional approach will improve the validity and specificity of the findings. Understanding racially, ethnically, and economically diverse SGMs in the context of multiple oppressions and within our proposed integrated model is a necessary step for furthering our understanding of alcohol-facilitated SV perpetration. In doing so, the field will be better positioned to develop and implement more precise interventions that address the social conditions unique and specific to SGM of color and of lower socioeconomic status.

5.5.1.5 Assess SV Across Relationship Type

The study of SV in SGM populations must account for the range of perpetrator-victim relationships along the spectrum of stranger-casual-intimate relationships. While attention to such relationships is a relative weakness in the rigor of research on SV (Anderson et al., 2020), it is particularly relevant for SGM people. Analysis of data from the National Crime Victimization Survey found that, whereas the rates of violence for non-SGM people were comparable across the continuum of relationship types (i.e., close relationships to strangers), the rate of violence was significantly higher among perpetrators who knew the SGM victim well relative those who did not know the SGM victim. Thus, SGM people may be at most risk for SV from people who they know well.

Research in this area is currently limited due to measures that historically either assess SV from a heteronormative framework or fail to assess the perpetrator-victim relationship (for an exception, see Dyar et al., 2019). For example, the Sexual Strategies Scale (Strang et al., 2013) only assesses male-to-female SV perpetration and does not consider relationship content. Similarly, the Sexual Experiences Survey (Koss et al., 2007) includes a range of tactics (e.g., verbal pressure, physical force) but does not include specific tactics that may be specific within the SGM community (e.g., threatening to expose a victim's identity to others). These measures could be modified with feedback from the SGM community to be more inclusive, as well as account for relationship type.

5.5.2 Implications for Prevention

Individuals within the SGM community experience higher rates of SV victimization compared to their cisgender heterosexual peers (e.g., see Edwards et al., 2015; Flores et al., 2020; James et al., 2016; Messinger, 2011; Walters et al., 2013). However, there remains a dearth of research on SV perpetration generally, and alcohol-facilitated SV perpetration specifically, within the SGM community and especially outside of intimate relationships. Extant evidence suggests men are the most common perpetrators of SV toward lesbian and bisexual women and gay men (Martin et al., 2020; Walters et al., 2013). In contrast, SV perpetration among women, nonbinary, and gender non-conforming individuals within the SGM community is not well understood. Toward this end, to make the biggest impact on reducing rates of alcohol-facilitated SV perpetration, efforts are especially needed that target men, *regardless of sexual identity*. Moreover, the field needs more evidence on the risk factors for alcohol-facilitated SV perpetration among SGM communities.

In the absence of such empirical evidence, our review of implications for prevention are drawn from the integrative model proposed above. Because comprehensive programming efforts are needed, we organized these recommendations within a social ecological framework and thus discuss proposed prevention approaches at the

individual, relationship, community, and societal levels. Until empirical evidence can support this integrative model, theory-based recommendations should be implemented with input from the SGM community through formative work, community advisory boards, and inclusion of members of the SGM community as research staff. In addition, interventions should undergo ongoing evaluation and be modified accordingly when new empirical evidence is disseminated.

5.5.2.1 Individual- and Relationship-Level Efforts

Despite over three decades of developing, evaluating, and implementing individual-level SV prevention programs, rates of SV remain consistent (Koss et al., 2007; Muehlenhard et al., 2017). To our knowledge, only two rigorously evaluated individual-level programs have reduced rates of SV perpetration: *Safe Dates* (Foshee et al., 1998, 2000, 2004, 2005) and *RealConsent* (Salazar et al., 2014). However, neither of these programs is tailored to SGM populations. Moreover, because these programs do not specifically target alcohol-related SV, it remains unclear if they reduce alcohol-related SV perpetration.

Efforts to reduce alcohol use among SGM individuals are a necessary first step toward mitigating alcohol-facilitated SV perpetration. Indeed, if SGM people are consuming alcohol in smaller quantities or not at all, alcohol is less likely to be a contributing factor in SV perpetration. These person-centered efforts are particularly needed, because research indicates higher rates of alcohol use in SGM, relative to cisgender heterosexual, populations (Coulter et al., 2015). Unfortunately, there is a lack of evidence- and theory-based alcohol prevention and treatment programs available for this population (Glynn & van den Berg, 2017), and more research is needed to inform these programs (see Talley et al., 2016). Ultimately, integrating evidence-based alcohol prevention content into SV programming is likely to be the most effective at reducing alcohol-related SV perpetration.

Even if treatment for an alcohol use disorder was deemed a first-line intervention in SGM people, it would likely not be sufficient to prevent SV perpetration. The reality is that many patients do not achieve sustained abstinence, and the long-term effects of extant interventions are unknown. Moreover, as has been established, perpetrators of SV toward SGM are often cisgender, heterosexual men. Thus, prevention efforts that target groups at high risk for SV perpetration (e.g., cisgender heterosexual and sexual minority men) toward SGM populations are needed. As reviewed, given the theorized impellors for SV perpetration in cisgender, heterosexual men (e.g., masculinity, sexual prejudice) and members of the SGM community (e.g., masculinity, chronic external and internal minority stress), tailored prevention efforts may be most fruitful. There are also several robust factors for SV perpetration related to, or intertwined with, gender and sexual norms (DeGue et al., 2014; Casey & Lindhorst, 2009; Heise, 1998) that can be targeted in programs for individuals within and outside of the SGM community. For example, some gender-specific programs aim to restructure traditional male norms (Katz et al., 2011; Katz, 2018; Wong et al., 2020) and could be modified to target sexual minority men who

may equate masculinity with sexual behavior (e.g., Halkitis, 2001). Further, gender and sexual norm risk factors are likely exacerbated when individuals are consuming alcohol (e.g., Leone & Parrott, 2015), which may help to reduce alcohol-related SV. Targeting social norms may be an effective cross-cutting strategy, because in addition to their potential to change traditional male norms (e.g., Berkowitz et al., 2020), this approach is recommended by NIAAA due to its high effectiveness, low cost, and high reach (NIAAA, 2019).

In addition to *decreasing SV impellor*s, it would also be prudent for prevention efforts to *strengthen disimpellors* that can mitigate the development of the urge to aggress. As noted in our integrative model, strengthening disimpellors should mitigate the development of aggressive urges. In the relative absence of internal and external cues associated with aggressive urges, SV perpetrated fueled by alcohol myopia is less likely. For example, a recent study showed that higher levels of psychological flexibility were negatively associated with SV in the content of heterosexual intimate partner relationships (Grom et al., 2021). These data suggest that, even in the context of impelling factors (e.g., heightened minority stress), strengthening disimpellance may help to mitigate risk for alcohol-facilitated SV perpetration. In the same spirit, individual-based interventions based on our integrative model suggest that interventions that *bolster inhibition* (e.g., increased emotion regulation) and *reduce disinhibition* (e.g., alcohol reduction strategies) have high potential to reduce alcohol-facilitated SV violence.

In line with best practices for intervention (Nation et al., 2003), efforts need to be appropriately timed. Prevention efforts should ideally begin in adolescence, before one enters into high-risk time periods for SV (e.g., college). The Sexuality Information and Education Council of the United States (SIECUS) and healthcare providers have recognized sexual and gender identity as a crucial component of comprehensive sex education (SIECUS, 2004; Breuner et al., 2016). Providing sex education on sexual orientation and gender identity can foster affirmation for one's own sexual and gender identity and foster respect for others' sexual and gender identity. Despite a call for sex education inclusive of sexual and gender identity, only a handful of evidence-based sex education programs delivered in schools include content on sexual and gender identity. Creating a culture of respect around sexual and gender identity can contribute to greater acceptance and normalization of SGM individuals. Such efforts should reduce sexual and gender minority stigma and, in turn, reduce stigma-based violence toward SGM individuals.

Moreover, in recent years, there has been a call for comprehensive sexual education that extends to other areas of development, including but not limited to interpersonal relationships, sexual consent, and alcohol and substance use (Breuner et al., 2016). Sexual education is critical to healthy development, and a key part of development includes learning about healthy dating and sexual relationships as well as sexual consent (SIECUS, 2004; Breuner et al., 2016). To prepare adolescents for college entry, where alcohol and substance use are both highly prevalent (Hingson et al., 2016; White & Hingson, 2013), it is important to discuss alcohol use and substance use in sexual education. This may be especially important among SGM people, who are more likely to use alcohol and substances in sexual situations (Lawn et al., 2019; Lorenz, 2021) and are at risk of problematic alcohol and

substance use in adolescence and adulthood (Talley et al., 2016). Therefore, there is a need for more inclusive sexual education that includes program content on sexual and gender identity, healthy sexual and dating relationships, and sexual consent as well as addresses risk behaviors, such as alcohol use and substance use.

It is important to recognize that while perpetrators are ultimately responsible for SV, there are few evidence-based programs that have demonstrated reductions in SV perpetration. Scholars have recently called for comprehensive and integrated programming that is focused on (1) targeting men's social norms to reduce perpetration, (2) SV risk reduction, and (3) bystander training (Orchowski et al., 2020). We echo these calls and highlight the need for these programming efforts to both include integrated alcohol content that specifically targets SGM populations. For example, SV risk reduction programs have demonstrated reductions in victimization up to 24 months and are inclusive of SGM populations (Senn et al., 2015; Senn et al., 2017); however, these programs do not yet integrate alcohol use content, which likely limits their effectiveness to reduce alcohol-related SV perpetration. Similarly, a recent large cluster randomized controlled trial found that an evidence-based bystander training program, *Green Dot*, was less effective at reducing violence for sexual minority, compared to sexual majority youth (Coker et al., 2020). Thus, tailored content specific to the SGM community is likely needed and should also include specific alcohol-related content. One program, +*Change* (Gilmore et al., 2022), has integrated alcohol use, SV perpetration, SV risk reduction, and bystander training and is tailored based on gender and sexual orientation. Initial work has shown +*Change* to be an acceptable and feasible approach with promising preliminary findings in reductions in alcohol use and SV-related constructs (Gilmore et al., 2022). However, more research is needed to determine its efficacy. Nonetheless, it suggests that tailoring content to SGM is feasible and promising for already evidence-based programs to provide tailored content to this population using a comprehensive and integrated approach.

A variety of evidence-based programs exist that prevent or reduce the burden of HIV transmission among transgender women and men who have sex with men (Matacotta et al., 2020). These programs may provide an opportunity to maximize prevention via the integration of content relevant to SV and alcohol use. Such an approach would provide more integrated programming for these populations rather than developing new programs on alcohol use and violence prevention. Programs have successfully used an integrated approach to reduce sexual risk behaviors, SV, and alcohol use (e.g., Testa et al., 2020). However, few specifically address health behaviors among lesbian and bisexual women and transgender men. Therefore, targeted SV and alcohol programs would need to be developed for these groups.

5.5.2.2 Societal- and Community-Level Efforts

Efforts are also needed that target the outer levels of the social ecology. The 2020 Human Rights Campaign Foundation report on violence toward gender minority individuals calls for efforts to increase inclusivity and humanization of SGM among cisgender, heterosexual individuals to reduce anti-SGM violence (Human Rights

Campaign Foundation, 2020). Recommendations for prevention include eliminating stigma against SGMs, increasing cisgender people's awareness of gender identity and nonbinary inclusion, and supporting and elevating the voices of SGM individuals (Human Rights Campaign Foundation, 2020). These recommendations are consistent with the previously reviewed heuristic framework of sexual and gender minority stigma (Herek, 2007). As such, they have high potential for reducing alcohol-facilitated SV perpetration by weakening key stigma-based mechanisms (i.e., enacted, felt, and internalized stigma), highlighted within the proposed integrative model, and should be part of a comprehensive approach for SV prevention.

A social marketing campaign is a promising strategy to achieve these goals. For instance, by promoting positive social norms and raising awareness of sexual and gender identity, social marketing campaigns reduce sexual and gender minority stigma at the societal level which, ultimately, functions to prevent SV perpetration toward SGM people. Thus, social marketing campaigns are needed to target cisgender and heterosexual individuals to increase their awareness and knowledge of nonbinary gender identities, nonheterosexual sexual identity, normalize conversations about pronouns, differentiate between gender and sexual identity, and emphasize that gender and sexual identity is an identity rather than an individual choice. Through a social marketing campaign or other community-level prevention approach that diffuses messages of acceptance of SGM to the greater community, we can create a culture of anti-violence.

Laws and policies at the community and societal level may also help to reduce alcohol-related SV perpetration toward the SGM community. Indeed, scholars have identified six key policies that may help reduce SV perpetration, including the following: drinking environment (e.g., rules about over service), marketing, alcohol pricing, sale time, alcohol outlet density, and college policies. It is unclear whether changes in these policies may impact SV perpetration within SGM communities or if culturally specific alcohol-related policy changes are needed. In addition to alcohol-related policies, policy changes specific to SGM rights have had impacts on SGM populations. For example, analyses of the National Epidemiologic Survey on Alcohol and Related Conditions examined the effect of bans on same sex marriage that occurred in several states between wave 1 (2001–2002) and wave 2 (2004–2005; Hatzenbuehler et al., 2010). These data revealed a 41.9% increase in alcohol use among sexual minority individuals in states where same sex marriage was banned. In related work, evidence suggests that charges of discrimination related to one's sexual orientation or gender identity to the Equal Employment Opportunity Commission reflected more severe harassment and violence when those charges were filed from US states without nondiscrimination laws relative to states with nondiscrimination laws (Baumle et al., 2020). Collectively, these data show how embedding sexual and gender minority stigma within laws and policy (e.g., via banning same-sex marriage or failure to adopt nondiscrimination laws) can influence individual-level behavior. Given these data, it would be expected that corresponding increases in alcohol-facilitated SV toward SGM populations would also be observed in these analyses. Likewise, it also follows that laws and policies that eliminate sexual and gender minority stigma and support SGM communities would result in

a reduction in alcohol-related SV perpetration to SGM individuals; however, to our knowledge, no empirical data has been reported that addresses this question.

5.6 Conclusions

The preceding review has demonstrated that the link between alcohol and SV toward SGM individuals is extraordinarily complex; yet, the complexity of the problem has not been met with the necessary rigor of research to bring clarity to its etiology. The dire need for this work is undeniable and grounded in empirical data, which indicate that (1) rates of SV victimization are as high, if not higher, among SGM populations relative to their cisgender, heterosexual peers and (2) proximal alcohol use is a contributing cause of SV perpetration toward cisgender, heterosexual women. However, the field is characterized by such little data on the role of alcohol in SV perpetration toward SGM populations. As a result, we do not know who is throwing SGM people into the river, why they are doing it, or how alcohol use plays a role. Until such an evidence base exists, we are in many ways powerless to prevent it.

Thus, we call for collaborative, interdisciplinary research to bring the best possible science to this area. The proposed integrative model, which we situate within a heuristic framework of sexual and gender minority stigma, provides a parsimonious way to unpack this complexity and guide that work. Importantly, our model calls attention to the need for rigorous designs that allow for the assessment of proximal and temporal effects of alcohol on SV perpetration. It also provides theoretically based targets for intervention at multiple levels of the social ecology. With these intended effects, we must be reminded that the entanglement of SV and alcohol use is as much (if not more) a social problem as it is an individual problem – regardless of the perpetrator and victim's identities. Thus, our pursuit of etiological research and prevention approaches for alcohol-facilitated SV perpetration must address sexual and gender minority stigma as well as its effects throughout the social ecology. In doing so, we will have a greater and more sustained impact on individual-level behavioral change

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Chapter 6
Alcohol and Men's Sexual Assault Perpetration Against Women: How Is Our Understanding Hampered by Limitations in Existing Experimental Analogues?

Antonia Abbey

6.1 Introduction

Two broad domains of research methods have predominantly been used to address questions about alcohol's role in sexual aggression: experiments and surveys. These paradigms have complementary strengths and weaknesses. Experiments allow researchers to randomly assign individuals to drink alcoholic or nonalcoholic beverages under standardized conditions, thereby allowing causal conclusions about alcohol's effects on behavior in these settings. Alcohol administration is unethical and infeasible under many circumstances; thus, this paradigm cannot be used to address all research questions or with all drinkers. Although surveys cannot establish causal relationships, they allow researchers to ask questions about situations that cannot be manipulated or observed in a laboratory. Ideally, researchers address the same basic hypotheses using experimental and survey designs. Similar findings from diverse methods enhance confidence in the stability and utility of the findings (Shadish et al., 2002).

The premise of this chapter is that existing measures of alcohol's role in sexual aggression need to be expanded for the field to move forward in understanding the etiology of sexual violence, as well as to develop evidence-based policy, prevention, and treatment initiatives. We have learned a great deal from existing research; however, the scope of current measures potentially limits the generalizability of research findings. Although there is a need for additional well-validated measures in both survey and experimental research, this chapter focuses on experimental designs (see Abbey et al., 2022, for a discussion of alcohol measurement in surveys).

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The heart of this chapter is a discussion of sexual aggression experimental analogues: What are the essential elements of sexual aggression that need to be included in analogues? What analogues have been used in past research and what are their strengths and limitations? Is the same analogue likely to be equally effective at identifying perpetrators with different motives, backgrounds, and situational preferences? How can virtual reality and confederate paradigms advance knowledge? What issues need to be considered in future analogue development? Before discussing these critical issues, some important background material is provided regarding my assumptions and definitions, alcohol administration research procedures, the etiology of men's sexual aggression against women, and theories about alcohol's role in sexual aggression.

6.1.1 Assumptions and Definitions

Men's violence against women is a serious health and human rights issue throughout the world that is often motivated by the desire to control women's sexuality (World Health Organization, 2013). Thus, most sexual assault etiologic research has focused on men's violence against women, usually a woman they know at least casually, and often well. Because societal norms that condone violence against women are based on long historical traditions associated with masculinity and patriarchy (Brownmiller, 1975; De Coster & Heimer, 2021; Hunnicutt, 2009; Russell, 1982), it is important to be gender-specific when developing theoretical models and experimental paradigms to understand men's violence against women. This emphasis is not intended to ignore women's sexual aggression, men's sexual victimization, or sexual victimization of gender nonconforming individuals. Instead, the goal is to encourage the development and use of etiologic models, experimental paradigms, and measures that are appropriate for the population and research questions of interest. The terms "sexual assault," "sexual aggression," and "sexual violence" are used interchangeably in this chapter. Also, the terms "analogue" and "proxy" are used interchangeably when describing experimental paradigms.

6.1.2 Brief Review of Alcohol Administration Research Procedures

Alcohol administration studies have strong internal validity, because participants are randomly assigned to drink conditions and strict standardized protocols are followed. Consequently, any behavioral differences found between participants in different drink conditions can be attributed to the acute effects of alcohol. Standard double masked alcohol administration procedures require two experimenters, one who is aware of participants' drink condition, pours their drinks, and administers

breath tests and one who is unaware of participants' drink condition and administers all other aspects of the study (Abbey et al., 2009; Norris et al., 1999; Pihl et al., 2003; Rohsenow & Marlatt, 1981). Participants who consume alcohol are given a dose of alcohol combined with mixer intended to produce the desired blood alcohol level based on sex and body weight. Targeted breath alcohol levels (BrACs) have ranged from .04 to .10 in past research, which for an average weight man constitutes two to five standard drinks (Carey & Hustad, 2005; Dry et al., 2012).

Early alcohol administration research studies often used a 2 (expect to drink alcohol: no or yes) × 2 (actually drink alcohol: no or yes) design; however, the anti-placebo condition (expect no alcohol but consume alcohol) often fails at BrACs above .04 or .05, because participants experience physiological changes that make them suspicious (Hull & Bond, 1986; Martin & Sayette, 1993). Many researchers want to induce a BrAC of approximately .08, because it is the legal drunk driving limit in the United States and is associated with moderate impairment of cognitive functions (Cromer, et al., 2010; Peterson et al., 1990; Schweizer & Vogel-Sprott, 2008). A common current design involves randomly assigning participants to one of three drink conditions: sober (no alcohol and know it), placebo (told given alcohol but given a nonalcoholic beverage), and intoxicated (alcohol and know it). Elaborate procedures are used to make placebos credible, such as having the nonalcoholic mixer poured from a seemingly newly opened tonic bottle and adding a squirt of alcohol to the top of the drink from what appears to be a lime container (Giancola et al., 2009; Rohsenow & Marlatt, 1981; Sayette et al., 1992). This small squirt of alcohol enhances the deception by providing the smell and taste of alcohol, without providing enough alcohol to affect participants' BAC (Sayette et al. 1992). Participants in alcohol administration studies are required to consume their drinks fairly quickly and begin the study tasks within 15–30 min of when they started to drink (Abbey et al., 2009; Davis et al., 2020; Giancola et al., 2009). The goal is for participants to complete the primary study tasks while their alcohol level is still rising because of the different pharmacological and psychological states associated with the ascending and descending limbs (Giancola & Zeichner, 1997; Pihl et al., 2003 Schweizer et al., 2006).

Although this chapter focuses primarily on methodical issues rather than empirical findings, it is noteworthy that most general aggression and sexual aggression alcohol administration studies do not find placebo effects. Instead, placebo participants usually provide responses that are similar to those of sober participants and significantly different from those of intoxicated participants (for reviews see Abbey et al., 2014, 2022; Exum, 2006; Ito et al., 1996). Thus, many current studies only include two drink conditions (sober vs. intoxicated; Davis et al., 2020; Neilson et al., 2022; Wegner et al., 2017; Woerner et al., 2018).

Participants in alcohol administration studies must meet a variety of criteria to protect their health and safety, In the United States, participants must be age 21 or older (the legal drinking age), must have previously consumed the amount of alcohol that they will consume in the study, cannot have any serious past or current drinking problems, and cannot have health conditions or take medications that contraindicate alcohol consumption (National Institute on Alcohol Abuse and

Alcoholism, 2004). It is important to keep these criteria in mind when considering the external validity of the findings from alcohol administration research.

6.1.3 Brief Review of the Etiology of Sexual Aggression

I am not aware of any etiologic research that provides a definitive answer as to what must be included in a sexual aggression proxy for verisimilitude. To establish construct validity, researchers need to demonstrate that their measure assesses the underlying theoretical construct of interest (Campbell & Fiske, 1959; Cronbach & Meehl, 1955; Flake et al., 2017; Shadish et al., 2002). Defining sexual aggression and alcohol-involved sexual aggression requires a good understanding of the etiology of sexual aggression. Thus, in this section, I provide a brief review of the relevant etiologic literature. I encourage readers to consider this etiologic research when evaluating the scope of existing sexual aggression proxies.

Early theoretical models focused on incarcerated perpetrators, often attempting to distinguish them from other types of violent criminals and highlighting their pathologies (Brown & Forth, 1997; Longo & Groth, 1983; Prentky & Knight, 1991; Seto & Barbaree, 1995). When high rates of self-reported sexual aggression began to be reported in surveys of male college students and male community residents (Abbey et al., 2001, 2011; Anderson et al., 2021; Koss et al., 1987; Senn et al., 2000; Thompson et al., 2013), researchers began to develop alternative theoretical models. Most researchers have focused on person-level factors, rather than societal or situational factors (Tharp et al., 2013). The confluence model is probably the most widely used theoretical model currently in use, largely because it organizes many established person-level factors risk factors into two proximal pathways that are hypothesized to have independent and synergistic effects (Malamuth et al., 1991, 1995; Malamuth & Hald, 2016). The hostile masculinity path combines suspicion and distrust of women with adversarial views about relationships with women that support the use of force (e.g., women say "no" when they mean "yes"). The impersonal sexual orientation path focuses on a preference for sex with many partners without emotional closeness and treating sex as a conquest. Distal factors, such as personality characteristics, childhood victimization, and adolescent delinquency, are hypothesized to contribute to sexual aggression indirectly through their effects on hostile masculinity and impersonal sexual orientation. Alcohol problems and heavy drinking have been conceptualized as predictors of hostile masculinity and impersonal sex, which in turn predict sexual aggression (Abbey et al., 2006a, b, 2011; Parkhill & Abbey, 2008).

Although the original and expanded versions of the confluence model have been supported in numerous studies, this model explains only a moderate amount of variance in the frequency of past perpetration (Abbey et al., 2006a, b, 2011; Malamuth, 2003; Malamuth et al., 1991, 1995; Nguyen & Parkhill, 2014; Parkhill & Abbey, 2008; Wheeler et al., 2002). One likely explanation for the moderate amount of explained variance is that the confluence model does not include "in the moment"

situational factors, cognitions, and affective states, such as intoxication, friends' behavior, feelings of entitlement, sexual arousal, and anger, all of which have been associated with an increased likelihood of engaging in sexual aggression (Abbey et al., 2014; Davis et al., 2018; Parrott et al., 2012).

6.1.4 Theoretical Explanations for Alcohol's Role in Sexual Aggression

Theoretical explanations for the acute effects of alcohol in sexual assault incidents focus on two mechanisms: psychological expectancies and pharmacologically induced cognitive impairments (Abbey, 1991, 2002, 2017). Societal messages linking alcohol and sexual disinhibition are ubiquitous in books, movies, commercials, song lyrics, and other popular media (Morgenstern et al., 2015; Nicholls, 2012; Rhoades & Jernigan, 2013). These messages linking alcohol and uninhibited casual sex create nonconscious mental associations that prime and reinforce the connection between sex and alcohol (Bargh & Ferguson, 2000; George & Stoner, 2000; Testa & Cleveland, 2017). Alcohol impairs executive cognitive functioning, including working memory, planning, the ability to integrate multiple sources of information, impulse control, and the capacity to shift one's perspective when new information becomes available (Abroms et al., 2003; Giancola et al., 2010; Miller & Fillmore, 2014; Peterson et al., 1990; Roberts et al., 2014; Steele & Josephs, 1990). Small but measurable amounts of cognitive deterioration have been found at blood alcohol concentrations (BAC) as low as .03, with sizable impairment for most people at BACs of .08 and above (Breitmeier et al., 2007; Carey & Hustad, 2005; Dry et al., 2012). Intoxicated individuals myopically focus their attention on the most immediate and salient cues in a situation, they miss or ignore more distal or subtle cues, and they have a difficult time stopping a desired behavior, even with new information suggesting potential negative consequences of continuing. Steele and Joseph's (1990) original alcohol myopia model focused on high conflict situations; however, cognitive researchers have found alcohol-induced impairments across a wide range of standardized measures of executive cognitive functioning and impulse control (Abroms et al., 2003; Miller & Fillmore, 2014; Peterson et al., 1990; Pihl et al., 2003; Roberts et al., 2014; Schweizer & Vogel-Sprott, 2008).

When applying these mechanisms to sexual aggression, it is important to recall that the vast majority of sexual assaults occur between people who know each other, usually in the context of a casual or serious romantic relationship or in situations, where such relationships are often initiated (Abbey et al., 2001; Breiding et al., 2014; Kilpatrick et al., 2007). In these situations when consensual sexual activity is a plausible outcome, there are two stages during which alcohol consumption can increase the likelihood that sexual aggression occurs (Abbey, 1991, 2002, 2017). The first stage involves the man's assessment of the woman's sexual interest. There

is a long history of research demonstrating that men tend to overestimate women's sexual interest, believing that women are more interested in having sex with them than they actually are (Abbey, 1982; Abbey et al., 2000; Edmondson & Conger, 1995; Haselton, 2003). Men looking for a potential romantic or sexual partner and men who are with a current romantic or sexual partner are likely to be watching for cues that indicate the woman's sexual interest. Expectancy confirmation theory (Snyder & Stukas, 1999) suggests that once individuals have formed a hypothesis, they tend to focus on cues that confirm it and ignore cues that disconfirm it. Although overperception of sexual interest occurs without alcohol consumption (Abbey, 1982; Howell et al., 2012; Koukounas et al., 2015), this biased information search is likely to be even stronger among intoxicated men with impaired executive functioning (Farris, Treat, & Viken, 2010). Thus, an intoxicated man who has decided that a woman is sexually interested in him is expected to hold on to this belief and keep trying, despite disconfirming responses.

The second point in Abbey's model occurs when the man persists in sexual activities that the woman refuses. Traditional gender roles and sexual scripts normalize some attempts to use verbal persuasion to change the woman's mind, blurring the line between seduction and coercion (DeGue & DiLillo, 2004; Vannier & O'Sullivan, 2011). Sexual assault perpetrators often endorse rape supportive cognitions, such as, women say "no" when they mean "yes," women who are sexual teases deserve what they get, and once aroused, men have the right to a sexual release (Ryan, 2011; Wegner et al., 2015). Again, this process can occur without alcohol; however, it is likely to be exacerbated by alcohol among men prone to sexual aggression through the myopic cognitive processing deficits described above. Cues that usually inhibit aggression, such as empathy for the victim and concern for future consequences, are likely to be more distal and therefore less salient than feelings of anger, frustration, sexual arousal, provocation, and entitlement, especially among men who are predisposed to sexual aggression.

6.2 Experimental Analogues

6.2.1 What Are the Attributes of a Good Experimental Analogue?

Experiments require researchers to operationalize complex constructs such as "sexual aggression" in a way that can be assessed within the confines of a laboratory paradigm. Methodologists typically view the strongest experiments as those that put participants in a situation that requires them to act in a way that clearly demonstrates – or does not – the behavior of interest (Wilson et al., 2010). Researchers are looking for an unambiguous behavioral reaction that participants make quickly in response to compelling situational demands. For

example, Milgram's (1974) classic study operationalized obedience to authority as participants' compliance with the experimenter's demand that they deliver shock to another person in the context of a learning study. The Trier Social Stress Test operationalizes stress as making a speech and doing mental arithmetic in front of unfriendly judges (Henze et al., 2017; Kirschbaum et al., 1993). Williams' cyberball paradigm operationalizes social exclusion as being left out of a video game of catch (Williams & Jarvis, 2006). One common criticism of these types of experimental paradigms is that the situations are too unrealistic for the findings to apply to behavior that occurs in natural settings (Highhouse, 2009; Wilson et al., 2010). Experimentalists counter that experimental realism is more important than mundane realism. An experiment is high in mundane realism if it presents participants with a situation that is similar to what they experience in their everyday lives (Wilson et al., 2010). An experiment is high in experimental realism if participants think, feel, and behave as they would in a natural setting that triggered comparable thoughts and feelings. The expectation is that if someone (for example) usually tries to retaliate when another person hurts them, then they will also retaliate if they are hurt by another person in a lab analogue, even if the form of retaliation available to them is unlike their options in day-to-day life. According to Berkowitz and Donnerstein (1982), "who gives electric shocks in real life" (p. 253) is irrelevant in the judgment as to whether electric shock is a good analogue for aggression. Instead, what matters is if participants are giving electric shock in response to feeling the type of anger they feel in real life.

6.2.2 What Can Be Learned From General Aggression Behavioral Proxies?

As described in the next sections, there are a limited number of alcohol and sexual aggression experimental studies. In contrast, there is a larger, more established literature on alcohol and general aggression. In the 1960s, Taylor (1967) began conducting alcohol administration studies using a simulated shock paradigm to examine alcohol's effects on aggression. During the intervening decades, a large literature has built up demonstrating this aggression analogue's construct validity and replicating major findings (see Chermack & Giancola, 1997; Exum, 2006; Giancola & Parrott, 2008; Ito et al., 1996; Kuypers et al., 2018 for reviews). General conclusions based on multiple reviews of this literature are that alcohol has a causal role in aggression, such that individuals who are intoxicated are more likely to administer strong shocks (or noise blasts) as compared to individuals who are sober or those who believed they consumed alcohol but did not (placebo condition). These effects are more consistently found for men than for women, when participants feel provoked by the other person's previous actions, and when participants have high levels of characteristics associated with aggressive behavior, such as high trait anger

(Exum, 2006; Giancola et al., 2009; Kuypers et al., 2018). There are reasonable concerns regarding the situations to which these findings likely generalize; nonetheless, they provide a strong corpus upon which to develop policy, as well as prevention and treatment programs. I encourage sexual assault researchers to build on the theoretical and empirical developments made by aggression researchers over the past 60 years.

6.2.3 What Types of Sexual Aggression Behavioral Proxies Have Been Developed?

Although alcohol consumption is involved in at least half of all sexual assaults (Abbey, 2011; Lorenz & Ullman, 2016; Testa, 2002), there are very few alcohol administration studies that examine sexual aggression (for reviews see Abbey et al., 2014, 2022; Abbey & Wegner, 2015; Davis et al., 2014). I am not aware of any alcohol administration studies that use a fully behavioral analogue to assess sexual aggression proclivity. Unlike the general aggression literature described in the previous section, there is no consensus regarding what is required in a behavioral analogue for sexual aggression. As discussed in more detail in later sections, vignettes are most commonly used in alcohol administration research to assess men's likelihood of being sexually aggressive.

Some sexual aggression researchers have used an imposition of sexual media paradigm in experiments that do not involve alcohol administration (Angelone et al., 2022; Hall & Hirschman, 1994; Hall et al., 2006; Parrott et al., 2012). Early versions of this analogue were designed to assess male participants' personal interest in sexual stimuli by unobtrusively measuring how long they viewed sexual as compared to nonsexual material (Briddell & Wilson, 1976; George & Marlatt, 1986). This paradigm was later adapted to assess sexual aggression by providing male participants with the opportunity to show sexually explicit material to a female confederate whom they were told disliked this type of material (Dermen, 1990; Hall & Hirschman, 1994; Hall et al., 2006). To ensure consistency across sessions in these studies, confederates are often not allowed to talk to participants or show an emotional reaction. In recent years, an actual confederate is rarely used, with participants believing that they are interacting with a woman via computer (Diel et al., 2012; Maass et al., 2003). Other researchers have included other men to examine peer influence on participants' decisions (Angelone et al., 2005; Davis et al., 2014; Parrott et al., 2012).

I am aware of only one behavioral proxy that allowed participants to touch another person. Pryor (1987) hypothesized that men who are predisposed to sexually harass women only do so when they believe they can get away with it in that situation without negative consequences. Male participants were given the task of showing a female confederate how to hit a golf ball or how to play poker. As hypothesized, men with a low self-reported propensity to sexually harass women did not

touch the confederate in a sexual way when teaching her how to swing a golf club or teaching her how to play poker. In contrast, men with a high self-reported propensity to sexually harass women were more likely to touch the confederate in a sexual way when showing her how to swing a golf club than when teaching her how to play poker. The movements involved with swinging a golf club provide a cover for touching the woman that is not credible when playing poker. Despite this study's intriguing findings, I do not condone the development of a proxy that allows participants to sexually touch another person. I will return to other ideas about how confederates can be safely and ethically involved in sexual aggression experimental research later in this chapter.

6.2.4 What Are the Essential Elements of Sexual Aggression That Need to Be Included in a Behavioral Analogue?

The development of a behavioral analogue requires researchers to define the essence of the construct of interest so they can operationalize it. What is the essence of sexual aggression? How important are anger and sexual arousal as impelling cues? In the sexual imposition paradigm described above, participants can make someone view something sexual that the other person does not want to view. Does forcing someone to view sexual material assess the essence of sexual aggression? Is it motivated by the same distal factors and triggered by the same proximal factors as forcing one's own sexual touch on another person? Although both acts involve establishing one's dominance over another person and ignoring that person's wishes regarding something sexual, they differ in several important ways that are likely to affect participants' responses. Men who are sexually aggressive want to have sex with someone who is unwilling or unable to consent, and they are willing to use verbal tactics or physical force to obtain what they want. Sexual arousal, feelings of entitlement, and anger are hypothesized to be impelling factors in these situations (Abbey et al., 2003a, b; Davis, 2010; Norris et al., 2002; Spokes et al., 2014). In behavioral analogues, unwanted sexual stimuli are shared without any physical contact; participants typically are not in the same physical location as the confederate and do not interact with her. In contrast, sexual aggression requires close physical contact and usually occurs with someone the perpetrator knows. Are the sensations associated with physical touch part of what stimulates some perpetrators to continue? If so, how can these sensations be ethically simulated in experimental analogues?

The confederate maintains a neutral demeanor in most sexual imposition studies. In contrast, most victims express discomfort through verbal and nonverbal responses, including begging the perpetrator to stop, crying, and struggling to get away (Ullman, 2007). Does that matter? Is the visceral fear conveyed by some victims what stimulates some perpetrators to continue? And does that same expression of fear cause other potential perpetrators to experience empathy and stop? In one

sexual imposition study, the confederate expressed varying levels of interest or disinterest in the sexual material (Lopez et al., 2007). Men with low scores on a measure of hostility toward women felt less positive and experienced more embarrassment when the confederate communicated discomfort rather than interest. In contrast, men who scored high on a measure of hostility toward women were unresponsive to confederates' signs of embarrassment and reported being in a good mood throughout the task. These findings suggest that differences in how men respond to victims' emotional cues in sexual aggression analogues may be associated with risk factors that can be addressed in intervention research with at risk men.

6.3 Sexual Aggression Proxies Used in Alcohol Administration Research

This section describes the types of sexual aggression proxies that have been used in alcohol administration studies. With one exception, alcohol administration studies that have assessed sexual aggression proclivity have used a vignette methodology, in which participants are asked to read, listen to, or watch a sexual assault situation involving two hypothetical characters (for reviews see Abbey & Helmers, 2020; Abbey et al., 2022; Abbey & Wegner, 2015; Davis et al., 2014). In the one exception, participants interact with a female agent (avatar with programmed responses) on a computer screen (Woerner et al., 2018). Thus, in all these analogues, participants know that their actions are not affecting another human being, although the researchers' goal was to create high experimental realism by immersing participants in the story so deeply that they responded as they would in real life.

Most of these analogues also have high mundane realism because they depict situations that are based on survivors' and perpetrators' descriptions of sexual assault incidents (Abbey et al., 2009; Davis, 2010; Davis et al., 2016; Marx et al., 1997; Noel et al., 2009; Woerner et al., 2018). This focus on authenticity distinguishes these proxies from the classic behavioral proxies described above, in which the experimenter contrives a situation in the lab which would be highly unlikely to occur in real life. Construct validity was established for many of these analogues by demonstrating a significant relationship between participants' self-report of past sexual aggression with their responses to the analogue (Abbey et al., 2009, 2018; Bernat et al., 1998; Marx et al., 1999). Some researchers have also established convergent validity by demonstrating a significant relationship between participants' responses to the analogue and common risk factors for sexual aggression (Abbey et al., 2009, 2018; Bernat et al., 1998; Marx et al., 1999; Noel et al., 2009; Norris et al., 1999, 2001).

Given this chapter's focus on methodology, I will not attempt a substantive review of these studies beyond stating that "alcohol consumption matters" (see Abbey et al., 2014, 2022; Crane et al., 2016 for substantive reviews). It is difficult

to draw firm conclusions from these studies, because researchers have used many different designs and a wide range of BrAC levels (as described in the "Brief Review of Alcohol Administration Procedures" section). Additionally, based on their hypotheses, some researchers have focused on examining the main effects of alcohol condition; others have focused on interactions between alcohol consumption and individual difference variables (e.g., hostility toward women, sexual alcohol expectancies); and others have primarily focused on mediators of the relationship between alcohol consumption and sexual aggression proclivity (e.g., sexual arousal, anger).

6.3.1 Features of Analogues

In a recent review paper, Abbey and Helmers (2020) catalogued the key elements included in sexual aggression analogues used in alcohol administration studies. Using PsycInfo, Web of Science, and Google Scholar, we found 17 articles that assessed participants' likelihood of being sexually aggressive in that situation. Some of the studies used the same analogue, leaving 12 unique analogues. Eliminated studies examined precursors of sexual assault, bystanders' intentions, the victim's interest in having sex, and the male character's likelihood of forcing sex (but not the participant's likelihood). Abbey and Helmers focused on the characteristics of the sexual aggression proxies, rather than these studies' substantive findings, because we were concerned that limitations in the scope of available experimental analogues might also limit the types of perpetrators and types of sexual assaults to which the substantive research findings can be applied. This chapter summarizes some of the findings from Abbey and Helmer's article and provides additional context by placing these findings within a larger discussion of etiology, construct validity, and the development of experimental analogues.

6.3.1.1 Mode of Presentation

All 12 of these analogues presented participants with a potential or completed sexual assault scenario with a male (potential) perpetrator and a female (potential) victim. Seven of the analogues used a written scenario (Davis, 2010; Davis et al., 2006, 2016; Norris & Kerr, 1993; Norris et al., 1999, 2002; Wegner et al., 2017), and three used a videorecorded scenario (Abbey et al., 2009; Johnson et al., 2000; Noel et al., 2009). All ten of these analogues assessed sexual aggression proclivity by asking participants to self-report their willingness to act like the man in the scenario using one or more Likert-type scales. The other two analogues required some type of behavioral response. One research team developed an audiotape, in which a man gradually used more extreme verbal threats and then physical force to obtain sex from a date who clearly indicated her lack of consent verbally and physically.

Male participants were instructed to stop the tape at the point when the man should stop making sexual advances toward the woman (Marx et al., 1997; Gross et al., 2001). The other analogue used a two-dimensional dating simulation, in which male participants chose what they wanted to do with their virtual date within a range of provided options. These options included watching TV, talking, drinking, sexual activities that she accepted, and sexual activities she refused (Woerner et al., 2018). It is noteworthy that most of this research has been conducted by just a few research teams.

6.3.1.2 Storyline

Although all the scenarios depicted a planned or spontaneous date between a man and a woman who did not know each other well, Abbey and Helmers (2020) identified three major themes that were based on the researchers' goals. One-third of the scenarios described a prototypic violent pornographic sexual scene with the man physically forcing sex on an initially reluctant woman, who often ended up enjoying it (Davis et al., 2006; Norris & Kerr, 1993; Norris et al., 1999, 2002). The authors of these studies wanted to evaluate the effects of exposure to violent pornography on men's acceptance of common rape myths and self-reported likelihood of using force to obtain sex. This focus allowed the authors to address important hypotheses about intoxicated perpetrators' motives and perceptions; however, most sexual assaults do not fit this narrative. Although intoxicated perpetrators are more likely than sober perpetrators to use physical force, the level of force depicted in these scenarios is more extreme than what is typically reported in surveys (Abbey et al., 2003a, b; Busch-Armendariz et al., 2010; Lyndon et al., 2007; Ullman & Brecklin, 2000). Most perpetrators primarily use verbal tactics, even when intoxicated (Abbey et al., 2001; Parkhill et al., 2009). Perpetrators who rely primarily on verbal coercion or the victim's intoxication to obtain sex may not easily project themselves into scenarios that use extreme physical force. This is an empirical question that should be addressed in future research.

One-third of the scenarios described a situation in which the female character was willing to engage in consensual sex with the male character if they used a condom; however, she did not want to have sex without a condom (Abbey et al., 2009; Davis, 2010; Neilson et al., 2017; Wegner et al., 2017). In three of the four scenarios, the man and woman had previously had sex with or without a condom. The authors of these studies were interested in men's willingness to use sexually aggressive tactics to avoid condom use. These researchers expected that men who would use verbal and/or physical force to have unprotected sex with an otherwise willing partner would also be willing to force sex on women who were unwilling to have sex with them under any circumstances. One of these studies confirmed that self-reported past perpetration assessed in an earlier session was significantly associated with participants' ratings of how justified they would be in using verbal and physical force to obtain unprotected sex

in that situation (Abbey et al., 2009). Condoms are less likely to be used in sexual assaults that involve alcohol as compared to sober assaults (Davis et al., 2008). Nonetheless, this type of scenario represents a specific type of sexual aggression, and it is not known how well these findings generalize to the full range of perpetrators and sexual assault situations. Again, this is an empirical question that should be addressed in future research.

One-third of the scenarios described a male and female character in a casual dating situation. Sexual assaults in which the perpetrator, the victim, or both have consumed alcohol are more likely than sexual assaults in which neither the perpetrator or victim consumed alcohol to occur when the perpetrator and victim are in a casual dating relationship or have interacted spontaneously after meeting at a party or bar (Abbey et al., 2001, 2003a, b; Ullman et al., 1999). Of the three types of scenarios used in these studies, this casual sex scenario most closely corresponds to the types of sexual assaults described by victims and perpetrators (see Abbey et al., 2022 for a review). This scenario also most closely represents the types of sexual assaults that receive media attention, in which the victim's alcohol consumption is often used to discount the veracity of her report and the perpetrator's alcohol consumption is often used to justify his actions (Egen et al., 2020; Siefkes-Andrew & Alexopoulos, 2019). Nonetheless, many alcohol-involved sexual assaults occur in the context of long-term relationships, and there are some differences (as well as some similarities) in the risk factors for sexual aggression in these different types of relationships (Eckhardt et al., 2015; Pegram et al., 2018b; Wegner et al., 2014). Thus, the extent to which findings from casual sex scenarios generalize to sexual aggression in long-term relationships is unknown and warrants research attention.

6.3.1.3 Location, Consensual Sex, and Tactics

All the scenarios reviewed by Abbey and Helmers (2020) depicted the characters in the woman's or the man's apartment, although in most of the scenarios they had started the evening at another location (e.g., movie, restaurant, party, bar). Almost 60% of the scenarios described some consensual sexual activity before the female character began to refuse other types of sexual activity. Approximately 60% of the scenarios depicted the man's use of physically forceful tactics, including pushing the woman down, holding her down, using his body weight to keep her from escaping, and forcing her legs apart. As noted above, the level of physical force depicted in many of these scenarios is more extreme than what typically occurs. Research is needed to determine if the types of tactics used by perpetrators in sexual aggression scenario proxies affect participants' self-reported willingness to act like the male perpetrator if they were in a similar situation. These types of studies may shed light on which types of men are willing to use physical force to achieve unwanted sex and which are not.

6.3.1.4 Alcohol Consumption

The 12 scenarios reviewed by Abbey and Helmers (2020) depict alcohol consumption by the male and female character in eight unique ways, including being randomly assigned to read about drinking or nondrinking characters (independent of participants' drink condition), being asked to imagine the male and female character at the same level of impairment that participants were experiencing, being told the male and female character had one drink, being told the male and female character had three or four drinks, being told the woman (only) had one drink, not being given any information about alcohol consumption, and having the option (in the simulation) of giving the male character and (separately) the female character as many drinks as they chose. None of the scenarios depicted a severely impaired male character. Only one of the scenarios (Davis, 2010) depicted an impaired female character (described when they first meet that night as more drunk than other people at the party, she sways when walking toward male character, and reports having a couple beers and shots before getting another beer). It is noteworthy that her impairment is only described when they first meet, not later in the interaction when the man is persistently trying to have sexual intercourse without a condom, although the woman said no and pushes him away.

I am not aware of any empirical research that could guide decisions about how to depict alcohol consumption in scenarios used in alcohol administration research. To my knowledge, none of the studies that used these scenarios included manipulation checks to assess participants' recall of how much alcohol each character consumed. If participants do use the reported number of drinks mentioned in the scenario for guidance, then they are likely to have quite different expectancies about how alcohol is affecting the behavior of characters who had zero or one drink as compared to those who had three or four drinks, although many perpetrators consume much larger quantities and may not perceive three or four drinks as having much impact (Hingson et al., 2017). It is difficult when sober to put oneself in the same affective and cognitive state experienced when intoxicated (White, 2003). Thus, it seems appropriate to have participants consume the same number of alcoholic drinks as the character with whom they identified in the story, unless researchers have hypotheses that require comparing different levels of imagined impairment. In contrast, other people's level of intoxication must be evaluated by external cues, such as observing how many drinks they consumed, statements they make about feeling drunk, excessive laughing and animation (on the ascending limb of intoxication), slurred speech, stumbling, and falling asleep (on the descending limb of intoxication). As compared to nonperpetrators and verbal coercers, perpetrators who target intoxicated women have more extreme scores on personality traits related to psychopathy, antisocial behavior, hostility toward women, and drinking problems (Abbey & Jacques-Tiura, 2011; Pegram et al., 2018a; Zinzow & Thompson, 2015). Thus, it is important to determine if current proxies provide these perpetrators with the cues that motivate them to engage in

sexual aggression. Men's perceptions of a woman's willingness to have sex and their willingness to force sex on her may be affected by her intoxication level at multiple points in their interaction (Abbey, 2017). Thus, research is needed that systematically varies the victim's degree of impairment depicted early in the interaction and at the time the male character has sex with her in order to evaluate if there are reliable differences between men who force sex on women who are sober, who are intoxicated but appear able to make decisions, and women who are too impaired to know what is happening.

As I suggest throughout this chapter, some men may be more likely to perpetrate under some or all of the circumstances depicted in existing experimental analogues, and some men may be less likely to perpetrate under these circumstances. Having a better understanding of which characteristics of the incident have an impact on which "types" of men (based on personality, attitudes, or past experiences; relationship to the victim; or tactics used to obtain sex) will allow for more nuanced theory development and targeted prevention and treatment programs.

6.4 Strengths and Limitations Associated with Different Analogues

As stated earlier in this chapter, methodologists typically view the strongest experiments as those that create situations that cause people to behave as they would in a natural setting that induced similar thoughts and feeling (Wilson et al., 2010). Ideally, participants are required to respond quickly, before they can reflect on the fact that they are in an experiment and consider what the experimenter expects of them or the social desirability of their response (Kihlstrom, 2021; McInroy & Beer, 2022). "Immersion" is a term that is frequently used to signify that participants are so caught up in the study that they feel part of it. This term is most identified with virtual reality environments (Cummings & Bailenson, 2016); however, it is relevant to other paradigms. Most of us have become so deeply involved in a book or a movie that we forget about our current lives and feel a part of that world. A well-designed proxy should create the same deep immersion.

6.4.1 Comparison of Video, Audio, and Written Scenarios

When contrasting different presentation modes, videos initially seem more realistic and immersive than written scenarios, with audio falling in between (see Abbey & Wegner, 2015 for a more detailed review of these issues). Videos do not rely on participants' reading skills; thus, they are more likely to be fully understood. Additionally, videos provide participants with most of the visual, nonverbal, and verbal cues that are present in live interactions.

Despite these advantages, videos can quickly seem outdated as clothing, hairstyles, music, and other elements embedded within the video change (Podsakoff et al., 2013). Furthermore, a party or apartment scene provides information regarding participants' age, ethnicity, social class, lifestyle, and values that may be irrelevant to the authors' hypotheses; nonetheless, they allow participants to implicitly make judgments about how similar they are to the characters in the video. When participants can distance themselves from the characters, they are less likely to fully immerse themselves in the situation. I did create one video for an alcohol administration study in which we taped each scene twice, once with a Black woman and Black man and once with a White woman and White man in order to provide viewing options that corresponded to the major ethnic groups in the community, where the study was conducted (Abbey et al., 2006a, b, 2009). Funding from the National Institute on Alcohol Abuse and Alcoholism paid a production team and professional actors who had the expertise needed to standardize the videos. It would be technically challenging and expensive to consistently create multiple videos that included characters who represented a wide range of ethnicities, as well as other important aspects of diversity.

In contrast, a well written vignette allows participants to imagine a desirable sex partner and a compelling, sexually arousing situation. When a written narrative states that "you" walked into a large, noisy party, participants can imagine whatever type of party and music they enjoy. When the woman is described as sexy, participants can imagine the type of woman they find sexually appealing. Developing good written vignettes is tim-consuming, and multiple pilot tests may be required to confirm that they are perceived as realistic, that they convey what is intended (e.g., particularly cues that are embedded as independent variables), and that there is a sufficient range in responses on the outcome measures (e.g., no floor or ceiling effects). With these caveats, as compared to reshooting scenes in a video, it is relatively easy and inexpensive to make changes to written vignettes to address alternative hypotheses or to ensure that the findings generalize to different types of situations.

6.4.2 Comparison of Scenarios and Behavioral Proxies

Sexual assault scenarios have greater mundane realism than most behavioral proxies, because they describe actual sexual assault situations. However, written, audio, and video proxies all require participants to respond to a hypothetical situation that involves other people. As noted above, participants typically report that the situation was interesting and realistic. Participants also frequently report relatively high levels of sexual arousal, anger, and entitlement in the studies described above, suggesting that they felt caught up in the experiences of the male character and had the thoughts and feelings associated with sexual aggression in real life. However, at some level, participants always know that it is "just" a story. In contrast, participants who interact with a confederate, in person or through a computer, believe that she is

another study participant like themselves. Thus, when they show her a videoclip of a violent rape scene or send her a sexually harassing message, they believe that they are harming another person.

Most scenario studies assess sexual aggression by asking participants to answer questions about how likely they would be to act like the male character in a similar situation. Answering written questions removes participants from the situation, thereby providing the opportunity to pause and reflect. This type of reflection is uncommon in "the heat of the moment" when someone wants to have sex despite another person's refusals. When given time to reflect, participants may not want to acknowledge to themselves or to the researchers that they would be willing to use verbal or physical force to obtain what they want.

6.5 Future Directions in Analogue Development

6.5.1 Virtual Reality Experimental Proxies

Virtual reality paradigms provide another possible option for sexual aggression analogues. Virtual reality environments combine many of the strengths of sexual assault scenario proxies with those of behavioral proxies that use confederates. Participants in virtual reality environments respond to a situation that is designed to reflect "real life" experience as they do in proxies that use written, audio, and video sexual assault scenarios. Participants also make behavioral choices about how to treat a standardized woman agent (preprogrammed to respond in specific ways), as they do in proxies that use confederates.

One strength of a virtual reality experimental analogue is the strong sense of presence it engenders, so participants feel that they are a part of the environment rather than a viewer of it (Diemer et al., 2015; Gillath et al., 2008; Slater, 2018). Although participants know that the virtual environment is computer generated, they tend to act as they would with humans and experience the same physiological responses (Slater et al., 2006; von der Putten et al., 2010). Participants' actions in a virtual reality simulation produce immediate feedback, thereby increasing their involvement (McCall & Blascovich, 2009; Pan & Hamilton, 2018).

A unique strength of a virtual reality proxy, which is not a component of standard scenario or behavioral proxies, is participants' active involvement in developing the storyline and determining how the interaction ends. Participants are provided with choices at multiple points about how they want to interact with their partner, and these choices determine what happens next (Fox, Arena, & Bailenson, 2009). Participants have the opportunity to learn from their choices and make different decisions regarding how to treat the woman based on her response. This is similar to the process that occurs in an actual sexual assault situation. There is more than one possible ending based on how the potential perpetrator responds to the woman's refusals.

Virtual reality proxies can also address some of the problems mentioned earlier that occur when a video shows people and situations that participants perceive as different from them. To avoid having participants distance themselves from the situation, they can be presented with multiple female agents of different ethnicities before the simulation begins and asked which woman they want to date. It is also possible to have some variability in the characteristics of the setting, if focus groups suggest that different segments of the population have very different expectations for what happens (for example) on a date or at a party.

An important drawback to virtual reality analogues is the cost. Developing a virtual reality proxy requires expensive software and extensive programming skills, although the cost of this technology has been steadily decreasing and more institutions are teaching requisite programming skills. Some of the advantages of virtual reality proxies could be achieved with lower-tech solutions that still provide participants with some choices. Participants could read (or view) one "scene" from an interaction and be prompted to make a decision about what they would do. For example, participants could read a scene in which they are kissing a woman who appears to be enjoying it as much as they are, but when they try to undo her pants, she pulls back and says she doesn't want to do that. Participants could then be given several options and asked which they would they do (e.g., Would they apologize and stop trying to do more than kiss? Would they go back to just kissing her but try again in a while? Would they offer her a drink or two and then try again? Would they be mad at her and threaten to leave?). Based on participants' choice, they would then read another scene and make another choice. This type of proxy would still require programming skills, but it would be much less complicated and expensive to develop. Some scenario proxies stop participants at one or more points, so they can report what they are thinking and feeling (e.g., Norris et al., 2013 assessing women's judgments of partner risk). To my knowledge, none of these studies asks participants what they would do next; instead, the storyline is predetermined with only one outcome. By providing participants with more options, there is an opportunity to examine different trajectories that men follow when trying to obtain sex from an unwilling woman.

With colleagues, I have developed and pilot tested one virtual reality dating simulation, first in a construct validity study (Abbey et al., 2018) and then in an alcohol administration study (Woerner et al., 2018; this is the two-dimensional virtual dating simulation described in an earlier section). The simulation begins with headshots of four women with different hair and skin coloring so that participants can select a woman to whom they are sexually attracted and would want to date. Participants see the room and the female agent from the first-person perspective, which encourages them to feel a part of the simulation (Bailenson et al., 2005; Dahlquist et al., 2010; Hoffman et al., 2003). Throughout the simulation, participants choose what they want to do. The choices include nonsexual activities (e.g., talk about shared interests), sexual activities to which the female agent positively responds (e.g., kissing), and sexual activities that she refuses (e.g., vaginal sex). Her refusals become progressively stronger if he continues to try to engage in the refused level of sexual activity. Sexual aggression is operationalized as the number of

refusals that participants receive. Ending the date is always an option available to participants.

One challenge was determining how graphic to make the sexual scenes. We wanted to enhance participants' sexual arousal and desire for sex, but for ethical reasons, we did not want to allow participants to see themselves forcing sex on a woman. Our decision was to keep all of the man's clothes on him and most of the woman's clothes on her (her shirt comes off if participants choose to touch her breasts after a certain level of interaction). Each date was programmed to end after 10 minutes (if he has not already ended it) or with the fifth refusal, at which point she is cringing at the end of the couch begging him to stop.

We assessed construct validity by correlating the total number of refusals that participants received in the simulation with their responses to a survey they completed approximately one month prior to the lab session (Abbey et al., 2018). The more refusals that participants received, the higher their level of past sexual aggression, narcissism, sexual dominance, lifetime number of one-time only sex partners, friends' approval and pressure for coerced/forced sex, and partners' alcohol consumption in sexual situations. The number of refusals was also significantly correlated with other actions selected in the simulation, including the number of times participants gave the woman alcohol to drink. Participants' post-simulation reports of sexual arousal, anger, and hostile attributions (e.g., belief that the woman was leading them on) were also significantly correlated in expected ways with the number of sexual refusals they received during the simulation.

Participants were encouraged to talk out loud throughout the simulation, saying whatever they would usually say to a woman in that situation. In the alcohol administration study (Woerner et al., 2018), we coded and summed the number of hostile verbal comments that participants directed toward the woman. There were a surprisingly large number of derogatory comments, demonstrating both how seriously participants took the simulation and their hostility toward women who thwart their sexual goals.

6.5.2 Confederate Proxies That Examine Early Stages of Potential Sexual Assaults

The sexual aggression analogues described thus far were intended by their authors to assess participants' responses at the point that sexual aggression occurs. For obvious ethical reasons, these paradigms cannot include a confederate in the role of potential victim unless the behavioral outcome is very different from sexual assault. As previously noted, most sexual assaults occur between a man and a woman who are in a situation in which consensual sex is a possibility. There is much to learn from studies that evaluate how alcohol consumption affects potential perpetrators' initial perceptions of the woman and how those early perceptions influence the likelihood that they later perceive sexual aggression as an appropriate response.

Abbey et al. (2005) provide an example of this type of experimental analogue. Based on theory and research described above, we hypothesized that intoxicated men (consumed alcohol and knew it) would be more likely to focus on a female confederate's signs of potential interest and miss or ignore her signs of disinterest as compared to sober men (did not consume alcohol and knew it) and men in a placebo condition (did not consume alcohol but thought they did). Based on research suggesting that some perpetrators engage in selective attention processes that reduce their accuracy in decoding women's negative cues (McDonel & McFall, 1991; Muehlenhard & Falcon, 1990; Ward et al., 1997), we also hypothesized that perpetrators would be more likely than nonperpetrators to focus on a female confederate's signs of potential interest and miss or ignore her signs of disinterest. Planned exploratory analyses compared the responses of men who reported past perpetration using verbally coercive tactics and men who reported past perpetration using rape tactics, which include force, threats of force, or the victim's impairment.

Participants were single men who were interested in dating women and met the criteria for alcohol administration research (NIAAA, 2004). The survey that assessed past sexual aggression was administered approximately 1 month before the lab session. Only the first author of the study knew participants' perpetration status, and she did not run any of the sessions. Participants were recruited for a study focused on the effects of food, alcohol, and the topic of conversation on social interactions and participants believed they were interacting with another paid volunteer. During the 20-min "get acquainted conversation," the confederate provided four positive cues and four negative cues at approximately 2-min intervals. None of the cues was sexual. Positive cues included extending her arms toward the participant while expressing interest in one of his hobbies and complimenting him on an aspect of his personality that he had previously mentioned. Negative cues included saying that she wasn't interested in his major and breaking eye contact and looking around the room. The interactions were videotaped and coders rated confederates' cue delivery as extremely accurate.

We took a number of precautions to protect confederates' safety. Participants never learned confederates' names (all the confederates used a pseudonym and adopted a scripted persona), and confederates did not know participants' last names. Confederates always left the lab before participants did, so there was no opportunity to interact. Participants were carefully debriefed about how the confederate was playing a role during their interaction. Confederates were not informed about the study's focus on past perpetration and were unaware of it being assessed in the study. Given the study's goals, we felt it was important for confederates to be unaware of this aspect of the study. Nonetheless, we carefully considered the ethics of withholding that information. Rates of self-reported perpetration in populations of young single men are typically in the range of 30–40% and sometimes higher (Abbey et al., 2001, 2011, 2021; Anderson et al., 2021; Koss et al., 1987; Senn et al., 2000; Thompson et al., 2013). Thus, even if we had not selected participants based on prior perpetration status, a sizable proportion of participants would likely have perpetrated sexual aggression in the past. Consequently, as part of the confederates' training, we provided information about sexual assault prevalence and told them

that their professional role in the study required them not to interact outside the lab with any participant. This study was conducted in a large urban area, which reduced the likelihood that they would run into each other in the future.

There were three sources of outcome measures. Participants reported their sexual interest in the woman and the woman's sexual interest in them. Confederates rated participants' sexual attraction to them. Trained coders indicated their degree of certainty that participants noticed the positive and negative cues, their perception of participants' responsiveness to both positive and negative cues, and how encouraged participants appeared to be after receiving the positive and negative cues.

In partial support of hypotheses about alcohol's effects on higher order cognitive processing, as compared to sober and placebo participants, intoxicated participants perceived themselves and the female confederate as acting more sexually during the interaction, and they recalled relatively more of the confederates' positive cues. Participants who reported previously committing rape or verbal coercion were more sexually attracted to the confederate than were nonperpetrators, and the female confederate also thought both groups of perpetrators were more sexually attracted to her than nonperpetrators. Coders were more certain that men who had previously used verbal coercion noticed and reacted to negative cues as compared to men who had previously used rape tactics, and rated men who had previously used rape tactics as more encouraged after negative cues than men who had previously used verbal coercion tactics (nonperpetrators scores tended to fall in between). Thus, men who had previously used rape tactics did not seem to pay attention to the confederate's specific cues; instead, they seemed encouraged, regardless of how she behaved. In contrast, men who had previously engaged in verbal coercion seemed to notice and react to the differences in her behavior. Perhaps men who use verbal coercion are comfortable using their social skills to verbally manipulate women into having sex against their wishes, whereas men who use rape tactics feel entitled to have their needs fulfilled, regardless of what the woman wants.

I have described this study in detail for two reasons. First, it illustrates how alcohol administration studies can address important questions about sexual assault with confederates who interact with participants in what I believe is a safe and ethical manner. Second, the findings regarding the similarities and differences between men who have previously committed acts of rape as compared to verbal coercion reinforce the core message in this chapter: As a field, we don't know enough about variability in responses to sexual aggression proxies and need to determine if proxies differ in their ability to identify perpetrators with different constellations of risk factors or who use different types of tactics to obtain nonconsensual sex.

6.6 Conclusions and Directions for Future Research

Theory and methodology must work together synergistically. The first step in designing a good experimental analogue is to develop a clear operational definition of the construct, specifying the scope (e.g., does sexual aggression include

noncontact acts such as sexual harassment or only acts that involve physical contact with the victim?) and its essential elements (e.g., does the participant need to see the victim's response?). I encourage researchers to carefully consider what might be missing in existing experimental paradigms and how to best fill those gaps. It is possible that all the existing paradigms are equally effective in identifying the types of individuals and the types of circumstances under which alcohol-involved sexual assault occurs. Although this seems unlikely, it is an empirical question, and we need empirical research to determine how much overlap there is in participants' responses to different analogues. In earlier sections of this chapter, I have highlighted the potential importance of (1) physical proximity, touch, and seeing victims' responses to the unwanted touch; (2) tactics that match those that participants would be likely to use in real-life situations; (3) the type of relationship that exists between the perpetrator and victim; and (4) signs of victims' alcohol intoxication. Furthermore, past alcohol administration research has found that the link between men's alcohol consumption and sexual aggression proclivity is mediated by their sexual arousal, perceptions that the woman wants to have sex, feelings of entitlement to sex in that moment, and anger if refused (Abbey et al., 2005; Davis et al., 2012a, b; Norris et al., 2002). Thus, a good experimental proxy is expected to increase these cognitive and affective states.

To my knowledge, few researchers have used more than one sexual aggression paradigm with the same participants; thus, we do not know how similarly people respond to different analogues. Although moderate effect sizes are accepted as evidence of good construct validity (Anderson & Bushman, 1997; Cohen, 1988), they also leave a lot of unexplained variance that may be due to important, unmeasured aspects of perpetration. A complete assessment of construct validity requires assessment of the persons, settings, manipulated independent variables, and outcomes to which the findings apply (Shadish et al., 2002). No single proxy is likely to motivate all potential perpetrators to respond in a sexually aggressive manner, given their heterogeneous motives, background characteristics, and situational triggers (Knight & Sims-Knight, 2003; Malamuth, 2003; Seto & Barbaree, 1995; Tharp et al., 2013).

A study conducted by Hoyt and Yeater (2011) illustrates how individual differences in response to different types of sexual aggression scenarios could be systematically examined. They posited that men who are motivated to commit sexual assault for different reasons may be sexually aggressive in different types of situations. Male participants completed surveys that included measures of several risk factors for sexual assault perpetration and then provided responses to 10 written sexual assault vignettes that systematically varied characteristics of the assault incident. Men with a tendency to miss or ignore women's refusals were most likely to give a sexually aggressive response to scenarios in which previous sexual contact had occurred and they were in an isolated setting. Men who strongly endorsed rape myths were most likely to give a sexually aggressive response in situations that involved alcohol consumption. Although there are concerns about carryover effects and demand characteristics when participants read 10 vignettes in succession, Hoyt and Yeater's basic premise that the circumstances, which

encourage sexual aggression, are not the same for all perpetrators is novel and warrants more research.

More attention to the impairment cues embedded in sexual aggression analogues is needed to understand what types of men are most likely to be sexually aggressive when intoxicated, what types of men are most likely to be sexually aggressive toward an intoxicated woman, and what types of men are most likely to be sexually aggressive toward a woman who is so impaired that she has passed out. A few surveys that have addressed this issue (Abbey & Jacques-Tiura, 2011; Pegram et al., 2018a; Zinzow & Thompson, 2015), but overall, there is still very little known about the extent to which perpetrators who use alcohol are similar to or different from other perpetrators. Alcohol administration studies that address this gap in our knowledge are essential for developing more targeted prevention and treatment interventions.

Methodological research can seem less essential for finding solutions to sexual aggression than etiologic and intervention research. Yet, without good measures, the findings from etiologic and intervention research are potentially limited in applicability. I want to encourage more researchers to conduct alcohol administration studies and contribute to our understanding of alcohol's role in sexual aggression.

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Chapter 7
Understanding and Addressing Alcohol and Sexual Violence: We Have Made Progress but Still Have Miles to Go

Dean G. Kilpatrick and Christine K. Hahn

7.1 Introduction

The Nebraska Symposium on Motivation has a distinguished history of shining light on vexing societal problems using the lens and tools of psychological science to determine what we know, do not know, need to know, and the implications thereof for research, practice, and policy. The topic of the 2021 Nebraska Symposium, *Alcohol and Sexual Violence*, could not be more timely or important, given the confluence of these two intertwined public health, criminal justice, and public policy problems. Each of these problems taken alone is a major challenge. In combination, excessive alcohol use and sexual violence (SV) are even more challenging and devastating. Both problems can occur early in life and throughout the lifespan, but risks for excessive drinking, SV perpetration, and SV victimization are substantially elevated among teenagers and young adults, making it essential to better understand how they interact over time among these high-risk age cohorts. There has never been a greater need for better research to improve understanding of the nature, scope, and consequences of these intertwined problems and how to apply this knowledge to prevention, practice, policy, and future research.

Unlike SV, which can never be morally or legally justified, use of alcohol and other intoxicants is more of a mixed bag. On the one hand, many experts argue that any alcohol consumption is harmful and should be totally prohibited, particularly among those under 21 years of age (e.g., Quigley et al., 2019). There is widespread agreement that high levels of consistent alcohol use are harmful and associated with disease, injury, and death (WHO, 2018). Interventions aimed at reducing alcohol misuse have observed benefits, such as decreased injury, lowering blood pressure,

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and improving psychosocial stressors (for a review, see Charlet & Heinz, 2017). However, there is disagreement among experts about whether moderate alcohol use has any beneficial effects on health. Some research indicates that low-to-moderate alcohol use may be associated with lower risk for coronary heart disease and stress (for a review, see Grønbæk, 2009). However, the authors of a recent article that included comprehensive analyses of international data from multiple sources concluded that "the level of alcohol consumption that minimized harm across health outcomes was zero" (Griswold et al., 2018, p. 1015), and this assessment based on these findings was echoed by Burton and Sheron (2018), who concluded that "no level of alcohol consumption improves health" (p. 987).

On the other hand, Slingerland (2021) in his provocative book, *Drunk*: *How We Sipped, Danced, and Stumbled Our Way to Civilization*, notes that consumption of alcohol and other intoxicants has been a part of virtually every culture since prehistoric times. He disagrees with conventional scholarly wisdom that takes a negative view of any alcohol consumption or intoxication because of a singular focus on potential negative health consequences. Instead, he makes the case that there are many *positive* consequences of alcohol consumption, which include increases in creativity and cognitive flexibility, ability to socialize and cooperate with other people, and ability to manage stress and anxiety. He argues that there is great value to occasional intoxication, particularly if it occurs in group versus solitary settings and if it occurs in the context of cultural norms and settings that discourage excessive consumption and extreme drunkenness. He makes the provocative case that the use of alcohol and other intoxicants is not an evolutionary mistake and that efforts to ban consumption are likely to be as ineffective as past prohibition efforts have generally proven to be.

However, he also acknowledges many negative consequences of excessive intoxication, which include increased risk of physical aggression as well as SV perpetration and victimization. His conclusions are that of the following: (1) we cannot successfully mitigate negative consequences of alcohol without understanding and appreciating positive effects; (2) harm reduction approaches are more likely to be successful than prohibition; (3) cultural norms and control mechanisms play a key role in maximizing positive effects of consumption and minimizing negative consequences; and (4) current cultural norms and control mechanisms among some high-risk groups (e.g. teenagers and young adults) encourage, rather than discourage, high-risk drinking practices that result in excessive drunkenness with all its negative consequences.

Not properly addressing the problem of SV has dire consequences for victims, perpetrators, higher education institutions, the US military, and society at large. Alcohol and other drug-related SV are not the only type of SV, but a substantial proportion of the most serious types of SV cases involve the use of alcohol and/or other drugs by perpetrators, victims, or both parties (Basile et al., 2021; Black et al., 2011; Kilpatrick et al., 2007; Krebs et al., 2009). SV victims have increased risk of post-traumatic stress disorder (PTSD) and related disorders, such as depression, suicidal behaviors, as well as alcohol and other substance use problems/disorders (Dworkin et al., 2017; Gilmore et al., 2017; Rhew et al., 2017; Zinzow et al., 2011).

SV victims have increased risk for numerous health risk behaviors and physical health problems that contribute to increased morbidity and mortality (Stein & Barrett-Connor, 2000; Santaularia et al., 2014). SV victimization history also increases the risk of subsequent SV victimization (Cougle et al., 2013; Jaffe et al., 2019), which further increases the risk of the aforementioned mental and behavioral health problems (Blanco et al., 2022; Ullman, 2016; Walsh et al., 2012). Less obvious and more difficult to quantify, SV victimization and its consequences can also have a negative impact on ability to develop full educational, economic, and personal relationship potential and to live happy, productive lives that are free from fear.

SV perpetrators also can experience negative consequences for their acts. Being accused of committing SV is stigmatizing and can produce reputational harm. Being the subject of Title IX investigations, civil litigation, or criminal justice proceedings is highly stressful, and obtaining legal representation can be expensive. If they are convicted of a crime, they are subject to incarceration or other criminal penalties. For some SV perpetrators, recognizing that what they did constitutes SV and the devastating consequences that SV has for victims might evoke authentic feelings of guilt, shame, or regret and produce moral injury (i.e., an injury to someone's moral conscience that results from their perception that they have committed an act that violates their moral code).

The negative impact of alcohol-related SV extends beyond its consequences for individual SV victims and perpetrators. Higher educational institutions that do not address SV properly face bad publicity, civil lawsuits, possibility of sanctions due to Title IX or Clery Act violations, and reputational harm due to a public perception that their institution does not provide a safe environment for students or respond appropriately when an accusation of SV victimization is made. Many parents and members of the public are also appalled at the level of student drunkenness that is ignored, tolerated, or condoned by many higher education institutions. High-profile cases of alcohol-related SV, in which the incident is portrayed as drunken sex between two students, only amplify concerns about the institution.

Similar issues and problems have been documented with respect to the impact of SV on the US military in a landmark report from the *Independent Review Commission on Sexual Assault in the Military* (IRC, 2021). After a rapid but very comprehensive study, the IRC made several key observations, including that there is broken trust between senior leadership and service members due to the way that SV cases are mishandled. The IRC concluded that there are substantial differences at the unit or base levels in unit climate, number of recent sexual assault and SV cases, and how the SV cases were addressed, if they were reported (Mathews et al., 2018). The IRC also cited data from a large RAND study of sexual assault and sexual harassment in the military, indicating that history of a recent sexual assault or sexual harassment doubled the risk of subsequent separation from military service within the following 18 months (Morral et al., 2021). The money and time required to recruit and train replacements are so substantial that the IRC concluded that loss of competent, well-trained service members due to SV-related attrition is sufficiently serious to pose a threat to the nation's military readiness.

From the perspective of society at large, our nation has unacceptably high levels of SV; has many misconceptions about the prevalence, scope, and nature of SV; is much more concerned about the possibility of false allegations than about treating accusers at least as well as the accused; has laws and a criminal justice system that make SV survivors reluctant to report; has an extremely low percentage of SV cases that are reported to police; and has an abysmally low percentage of cases that result in convictions in criminal court (Kilpatrick & Hahn, 2019). These things are true for all types of SV, but the situation is even worse for cases, involving alcohol and/or other drug use. Given these facts as well as all the devastating consequences of SV, we regretfully must conclude that our nation is willing to tolerate current high rates of SV but not willing to allocate sufficient resources to address our SV problem.

As the chapters in this volume highlight so well, we have learned a lot about alcohol and other drug-related SV, as well as how to apply what we have learned to promising prevention approaches. We have developed useful conceptual models, research methodologies, and research assessment tools to study this complex problem. We have tested these models and applied these tools to many populations, including higher education students, members of the general population, and members of the military. Much of this research has focused on risk and protective factors for SV victimization and perpetration at the individual level. There also has been increased focus on situational variables (e.g., hookups), cultural variables (e.g., norms that encourage binge drinking, drunkenness, and disrespect of women, sexual minorities, or other minority groups), and regulatory variables (e.g., enforcement of underage drinking laws and controlling access to alcohol at social events) that would be expected to influence the alcohol part of alcohol-related SV. Good work has also been done with individual-level risk and protective factors for SV victimization and perpetration among sexual minority groups as well as other groups typically excluded from research studies. However, the list of what we still do not know and the critically important research that still needs to be done is extensive, and each chapter identified numerous areas in which more research is needed.

In the remainder of this chapter, we will review each of the presentations and chapters. These reviews will highlight what we view to be some of the most important contributions made and points raised in each paper. Next, we will engage in a broader discussion of these and other key concepts, research findings, gaps in research, as well as new ideas and suggestions that may prove useful in addressing our drunkenness, SV perpetration, and SV victimization problems. We will conclude with a "modest proposal" for rightsizing the SV research portfolio to properly address the magnitude of the problem.

This is the Nebraska Symposium on Motivation, so we would be remiss if we did not call attention to the role of motivation and methods for motivating behavior change as we consider this topic. The famous 1920s gangster and motivational expert, Al Capone, reportedly once said "You get more with a kind word and a gun than you do with a kind word alone." Capone was better known

for his use of violence and threats of violence as motivational tools than for using kind words, but he was on to something in his grasp of motivational tools. If we want to motivate people to change maladaptive behaviors and cultural norms, we must punish bad behavior and reward good behavior. This requires sticks as well as carrots. We must highlight negative consequences of maladaptive behaviors and cultural norms, but we must also identify positive outcomes of changing these behaviors and norms. In other words, we must use all the motivational tools at our disposal to maximize negative consequences of condoning or engaging in maladaptive behavior as well as highlight positive consequences of making prosocial changes.

7.2 Key Contributions and Concepts of the Chapters

Making real headway on understanding and preventing the grave public health problem of SV requires bringing together researchers from various fields and integrating results from a broad range of research using different methodologies. The experts contributing to the 2021 Nebraska Symposium emphasized complementary parts of the SV-alcohol link spanning cross-sectional, longitudinal, experimental, and intervention research. Each chapter was excellent and contained numerous important concepts, findings, and recommendations. The following summary provides our take on the some of the key points in each chapter, but we encourage readers to examine each chapter carefully, because we cannot do justice to their contributions in this brief review.

7.2.1 Experimental Analog Research

Survey research can provide important data on the scope and nature of alcohol use in SV cases, but experiments are the best method for testing alcohol's temporal and proximal effects on SV perpetration and victimization. Intoxication at a particular moment may have different associations with SV perpetration than patterns of alcohol misuse over a longer time. However, to conduct sound experiments on SV aggression, we need to operationalize sexual aggression accurately based on etiological research. Abbey's chapter (Chap. 6, this volume) raises several interesting questions that illustrate the complexities of understanding underlying mechanisms of alcohol-involved sexual aggression (e.g., anger, sexual arousal, feelings of entitlement, sensation of touch, emotional and behavior response of another person), and she points out that the proximal and distal factors that motivate sexual aggression may differ across individuals and contexts.

Abbey's theoretical model on SV perpetration incorporated in-the-moment factors that may influence an individual's likelihood to perpetrate SV. She reviewed alcohol's theoretical impact on increasing psychological expectancies for sex and

pharmacological cognitive impairments that ultimately increase risk for male SV perpetration against women. Her etiological theoretical model specifies that alcohol may impact two stages that occur during interactions between men and women who know each other. First, when a male perpetrator assesses the sexual interest of a woman, his misperception about the degree of her interest may occur because he selectively focuses on cues that are perceived to confirm a woman's sexual interest while ignoring other cues that are not consistent with consent. Next, he may persist in nonconsensual sexual activity because of the influence of factors, such as gender roles and sexual scripts. Alcohol intoxication may make it more likely that these stages occur, especially for certain men (e.g., those high in hostility towards women), in certain types of situations (e.g., in the context of an encounter that begins with consensual sexual activity).

Only 12 unique SV analogs have been tested in previous alcohol administration research studies with college students that focused on SV perpetrated by men against women. The small number of studies and existing proxies in comparison to the rampant prevalence of SV is alarming. The studies use written, video, or audio vignettes, which have ecological validity. However, the use of SV vignette scenarios also has inherent limitations (e.g., participant awareness that a real person is not being harmed), and each of these modalities also have their own pros and cons (e.g., relying on reading, imagination, becoming outdated), with written scenarios generally being the most ecologically valid. Within these small number of studies, there is variability in the way SV proclivity was measured, the degree of physical violence used by the perpetrator, previous relationship between the man and woman, and the way alcohol impairment level of the victim/perpetrator is explained/depicted to participants. Most studies use scenarios that do not necessarily reflect aspects of SV commonly reported among college students (e.g., high use of physical violence, negotiation of condom use, occurring in an apartment after leaving a party, history of casually dating). These alcohol administration studies are also limited by being conducted with men aged 21 years and older, without serious drinking problems.

Abbey applied her etiological model in innovative experimental alcohol administrative research, including using a confederate proxy and most recently a virtual reality paradigm. Virtual reality paradigms have the unique ability to be ecologically valid, because of the ability for participants to receive immediate feedback from the environment and shape the trajectory of the interaction by making different behavioral choices. The use of virtual reality paradigms in alcohol administration studies have a promising potential to identify proximal risk factors for SV at various alcohol intoxication levels of both potential perpetrators and victims, and how risk for SV perpetration may vary based on contextual factors. Like written, audio, or video analogs, there are still decision points that researchers constructing virtual reality paradigms need to make, such as the level of violence that could potentially be depicted by avatars, the number and types of behavioral choices points participants can make, and the length of time the scenario can continue. We echo Abbey's call for more researchers to conduct alcohol administration studies on SV aggression using written sexual assault scenarios, confederate, and virtual reality proxies.

In summary, the field is still identifying the etiological factors of SV aggression and exploring how to operationalize SV aggression. Experimental researchers must grapple with conducting sound experiments when we have an insufficient understanding of how to operationalize proclivity for sexual aggression, construct validity in our measures, the potential typologies of SV perpetrators, and differences in SV based on the level of intoxication among victims/perpetrators. The amount of experimental research that has been conducted is scant in comparison to the different types of alcohol-involved SV scenarios that need to be researched (e.g., use of verbal coercion, physical force, and/or incapacitation; varying relationship to the victim; level of intoxication of victim/perpetrator). Survey and experimental researchers need to collaborate to create research agendas that can inform valid analog measures of SV perpetration, which would ultimately inform potential etiological targets of SV prevention programming.

7.2.2 Science of Behavior Change

Davis and colleagues (Chap. 4, this volume) argued that an experimental medicine approach is needed to identify mechanisms of alcohol-involved SV that can be targeted in intervention efforts. They encouraged intervention researchers to understand not simply if interventions work but to test underlying mechanisms that may explain effectiveness. Further, they argued that researchers need to consider how underlying mechanisms of alcohol-involved SV may be impacted differently by interventions, depending on the contexts and background variables of participants receiving the interventions. In our view, this is extremely sound advice.

The authors provided a thorough review of theoretical cognitive (e.g., misperception of woman's sexual intent, rape myths, sexual entitlement, alcohol expectancies), physiological (e.g., hyper/hypo physiological reactivity, testosterone levels, sexual arousal), and emotional (e.g., anger, empathy, emotion regulation) mechanisms of alcohol-involved SV. Individual difference factors (e.g., hostile masculinity) and alcohol intoxication (according to alcohol myopia theory via narrowing attention on salient cues and away from inhibiting cues) may impact men's proneness to these mechanisms. Few intervention studies have tested these mechanisms, with no studies testing the cognitive and physiological mechanisms under acute intoxication, and a lack of intervention studies integrating a focus on alcohol consumption. The review highlights the progress the field has made in *identifying* mechanisms of SV perpetrated by men against women. However, little progress has been made on *testing* those mechanisms in intervention studies.

Davis and colleagues have taken an important step in closing this gap by applying the Science of Behavior Change (SOBC) model to test emotion regulation and mindfulness as treatment targets for SV perpetration in an alcohol administration study. The use of laboratory-based methods and alcohol administration studies provide an opportunity to test mechanisms that can be targeted in interventions at different levels of alcohol intoxication. This innovative research and complex results remind us that mechanisms of SV

perpetration can function differently under the context of alcohol intoxication and among individuals with varying risk factors for SV aggression. Results support that cognitive restructuring may be a promising intervention target and the potential harm of using mindfulness with men who may be particularly motivated to enact sexual aggression. If your current emotional state is anger and a strong desire to have sex with someone whether they are interested or not, getting in better touch with your here-and-now feelings through mindfulness may not be a great idea! Cognitive restructuring had indirect effects on SV aggression via sexual arousal and anger. Although a society built on patriarchy underlies SV, it is important to consider that SV can also be motivated by in-the-moment sexual desires. Thus, identifying intervention targets to decrease sexual arousal to nonconsensual sexual experiences and manage sexual arousal in nonconsensual sexual situations is important for prevention.

Mechanisms of SV perpetration may vary across individuals, intoxication levels, and contexts; thus, our interventions will likely need to be tailored for individuals with certain risk factors and vary depending on patterns of alcohol use and drinking contexts. We hope researchers will pursue creative research in line with Davis and colleagues' recommendations to identify and target mechanisms of behavior change related to alcohol-involved SV (e.g., testing intervention effects in alcohol administration studies coupled with sexual aggression analogs, virtual reality paradigms, just-in-time interventions).

7.2.3 Sexual and Gender Minority (SGM) Populations

Parrott and colleagues (Chap. 5, this volume) reviewed serious gaps in research on alcohol-involved SV that have historically plagued the field and limited our ability to prevent SV. Their parable of the river pointed out nicely that more is known about the mental health outcomes of SV than the mechanisms that cause SV. They made the extremely important point that researchers and funding agencies must commit to creating a meaningful balance between efforts focused on SV perpetration compared to SV victimization, although we would add that this should not be a zero-sum game and that considerably more of both types of research is needed. Further, they argued convincingly that our understanding of the complexity of SV is limited by traditionally researching SV victimization and SV perpetration separately.

Although these research gaps have begun to be filled for cisgender and heterosexual individuals, research among SGM people lags even farther behind. There is an urgent need to focus research on proximal and temporal mechanisms of alcohol-facilitated SV perpetration against SGM individuals and understand SV at the dyadic level. Perhaps one of the most noteworthy failures of the field, as they noted, is heteronormative bias of researching violence perpetrated by men against women. Heteronormative bias is evident in SV and alcohol research, from epidemiological studies to laboratory research. Very few studies have assessed the gender identity and sexual orientation of victims/perpetrators, included SGM individuals in samples, or used experimental analogs that include SGM individuals as victims,

perpetrators, or bystanders. In addition, even fewer studies have considered the potential etiological impact of sexual and gender minority stress in alcohol-facilitated SV against SGM people. Parrott and colleagues had a difficult task of writing about alcohol-involved SV among SGM people, because prior research has barely focused on this area, despite SGM people being at greater risk of experiencing SV compared to cisgender and heterosexual individuals.

The authors provided an excellent review of the sexual and gender stigma levels (i.e., enacted, felt, and internalized stigma) and the impact that stigma-related stressors (e.g., gender minority stress, negative affect experienced by cisgender men when not adhering to stereotypical gender norms) have on SV perpetrated by and against cisgender, heterosexual, and SGM people. Cisgender, heterosexual, and SGM individuals who perpetrate SV may do so in part to conform to normative sexual and gender identities. Normalizing and providing privilege to cisgender and heterosexual identities increases the likelihood of SV perpetration, across victim/perpetrator sexual and gender identities. Although the impact is likely more severe for SGM people, the harmful effects of having to uphold traditional normative sexual and gender identities in our culture reaches all people and should be a focus of prevention efforts.

The I^3 Model is a comprehensive theoretical framework to guide empirical testing of the distal, proximal, and temporal impacts of alcohol on SV (Parrott & Eckhardt, 2018). The authors expanded on the I^3 Model to understand alcohol and SV perpetration against SGM populations with an emphasis on gender minority stigma. There are several strengths to this framework, including the ability to focus on the following: proximal (instigating) and distal risk (impellors) and protective (inhibitors) factors of SV; the interaction of risk and protective factors; and predicting risk for SV perpetration in a specific context based on the degree of presence and interaction of instigator, impelling, and inhibitory factors at various ecological levels. The model is theoretically inclusive, which the authors illustrated by reviewing how alcohol myopia theory and sexual and gender minority stress models inform the type and strength of instigator, (dis)impelling, and (dis)inhibitory factors. We encourage researchers to follow in Parrott's and colleagues' footsteps by using theoretical frameworks to guide hypothesis testing of potential targets for intervening on SV perpetration and more specifically to use the I^3 Model to test causes of alcohol-involved SV perpetration by and against SGM people.

The authors conclude by proposing meaningful, specific recommendations that should minimize historical marginalization of SGM populations in SV research and prevention efforts. We have summarized their call to action but encourage researchers to reference their full recommendations. An extremely important step that all researchers should take is reducing heteronormative sampling by assessing for victims and perpetrators sex assigned at birth, gender identity, gender expression, and sexual orientation in all studies. Assessments of experiences of SV perpetration and victimization need to include tactics that are specific to SGM populations. Further, researchers should include assessment of stressors (e.g., gender minority stress) unique to SGM populations. Qualitative, cross-sectional, longitudinal, and laboratory-based research designs are needed to understand and test the proximal

and temporal effects of alcohol on SV perpetrated against SGM people. This research should include a focus on alcohol-involved SV across different types of relationships, including intimate partner relationships, and test proximal/temporal effects of alcohol within the dyadic context. Because there are so many subgroups of identities within SGM populations, researchers should use an intersectional approach to examine prevalence and causes of SV perpetration across different intersections of identities that society has marginalized. For instance, large-scale epidemiological studies are needed to examine group differences in prevalence and outcomes of alcohol-facilitated SV across areas of SGM identities (e.g., sexual orientation, gender identity, race, SES).

The authors proposed several recommendations for prevention efforts of alcohol-involved SV against SGM people at every social ecological level. Individual-level interventions should focus on reducing alcohol misuse, particularly among the primary perpetrators of SV (men) and disproportionally victimized (SGM people); promoting healthy and inclusive gender and sexual norms and alcohol norms; and enhancing factors that are protective against SV (e.g., emotion regulation, alcohol reduction strategies). We strongly endorse the LGBTQ inclusivity sex education policies that includes a focus on sexual and gender identity as well as other key areas (e.g., consent, alcohol use) at an early age. At the societal and community level, social marketing campaigns can address social norms related to sexual and gender identity. Laws and policies that decrease heavy alcohol use and sexual and gender minority stigma are needed. Individual-level interventions have promise to stop perpetrators from throwing people in the river and reduce risk that potential victims are targeted by perpetrators. Societal- and community-level interventions can help us create a new land with new norms and new values in which we no longer tolerate throwing people in the river. To create culturally inclusive and tailored prevention programs across these social ecological levels, the SGM community needs to be included in development and dissemination efforts.

7.2.4 Person, Place, Drink

Although understanding pharmacological effects of alcohol and individual risk factors on SV proclivity is essential, we also need to understand the environment that alcohol-involved SV exists in. Alcohol misuse and history of SV perpetration have been associated in longitudinal research (Abbey et al., 1998; Stander et al., 2018; Zinzow & Thompson, 2015). However, as reviewed in Testa's chapter (Chap. 2, this volume), when individual factors associated with perpetration are controlled for, results from longitudinal research about the association between alcohol misuse and SV perpetration have been mixed (Gidycz et al., 2007; Kingree & Thompson, 2015; Testa & Cleveland, 2017; Thompson et al., 2010). Thus, third variables, including personality traits and attendance at alcohol-drinking venues, may explain both SV perpetration and alcohol misuse.

Testa greatly extended knowledge of the context of alcohol-involved SV with her research on hookups. The distinction she made between simply drinking alcohol as a risk factor for SV victimization and drinking alcohol in a context where there is a potential perpetrator and a victim is a key, central tenet of research conducted on the intersection of alcohol and SV. Testa's research points to hookups as being a high-risk context for SV, particularly for men with certain risk factors (e.g., sociosexuality). Perpetrators use intoxication, and perhaps hookups, as a method to commit SV. The ways hookups facilitate SV may differ, depending on the relationship between the perpetration and victim. Further, the frequency of attendance at drinking venues and the level of intoxication may be important factors for understanding the risk of SV perpetration. Her research calls for additional research focused on identifying the point before or during hookups that perpetrators use intoxication as a method to commit SV. Further, it would be beneficial to further understand the motivation of perpetrators to attend drinking venues and engage in hookups. An extension of research on the role of hookups in SV to community samples is also needed.

Testa's prospective research on number of hookups mediating the association between heavy drinking and SV victimization supports the utility of prevention efforts that focus on sexual consent, sexual risk taking, and cultural norms related to alcohol use, sex, and violence. However, as she points out, it seems very unlikely for either a potential victim or someone at high risk for perpetrating SV to stop an assault from occurring in a situation where there is isolation, intoxication, and sexual behavior that may or may not be consensual already occurring. It also seems unlikely to get emerging adults to stop having sex while drinking alcohol, a point that Slingerland made quite well in his recent book (2021). This is the battle that prevention programming has faced for several decades. In addition to providing individual-level interventions, prevention of SV needs to focus on society-level changes that can facilitate healthy norms related to sexual behavior and level of intoxication within drinking venues and decrease the opportunity for young people to reach high levels of intoxication.

7.2.5 Prevention in Military Populations

Orchowski's chapter (Chap. 3, this volume) draws badly needed attention to the consistently high rates of SV among military populations and the unique considerations of SV within military institutions. The military environment amplifies societal issues that give rise to SV, including hegemonic masculinity, power differentials, and objectification. Orchowski reviewed data suggesting that the military also has unique cultural aspects that contribute to high rates of SV, such as an emphasis on completing missions, attempting to resolve issues starting at the bottom of the chain of command, and competing demands of military leadership to dismiss allegations of SV. Traditional gender norms, alcohol misuse, and SV have unfortunately been reported by military personnel throughout history. These points were documented

quite well in the Independent Review Commission on Sexual Violence in the Military (2021).

Orchowski's chapter noted that many characteristics of military SV mirror civilian SV, such as alcohol being commonly involved, perpetrators being known male peers, and the event occurring indoors on military installations. Like civilian survivors, military SV is associated with a myriad of mental health and physical outcomes (e.g., PTSD, depression). However, in comparison to civilians, survivors of military SV report higher rates of lifetime traumatic experiences, may experience institutional betrayal form the military following SV, and need to navigate decisions about reporting SV when the perpetrator may be a peer and/or a person that their unit depends on. Given the large number of men in the military, the prevalence of SV results in a substantial subset of male military SV survivors. Military SV perpetrated against men often includes experiences of bullying and hazing. Harmful cultural norms are not only manifested in occurrence of military SV but also the barriers that survivors face to reporting incidents of SV, with only about a quarter of assaults being formally reported and most survivors not receiving psychological and medical services following assault. Military leadership has a vital opportunity to decrease military SV by promoting and supporting SV disclosures and related help-seeking.

Alcohol and SV prevention efforts need to be truly integrated, such that the bidirectional relationship between alcohol misuse and SV and overlapping mechanisms (e.g., social norms) is addressed concurrently, rather than approaching these issues sequentially. Since perpetrators of alcohol-involved SV may also perpetrate non-alcohol-involved SV and most people who engage in heavy drinking do not perpetrate SV, alcohol misuse in prevention programming needs to be considered as one risk factor among many other interacting risk factors for SV perpetration. To facilitate universal prevention of SV perpetration and address prevention from multiple social ecological levels, programs that can be tailored to address people of all genders, prevention of perpetration, risk reduction for victimization, and promoting bystander intervention will likely have a larger impact, than focusing on these avenues of prevention in isolation. Integrated interventions addressing these different angles of SV prevention/risk reduction are needed, because alcohol misuse increases the risk for perpetration/victimization and may impede ability to effectively intervene as a bystander. Taking a harm reduction approach by teaching protective behavioral strategies (i.e., behaviors that can reduce risk for alcohol intoxication, negative alcohol-related consequences, and SV; Martens et al., 2005; Moore & Waterman, 1999), providing personalized normative feedback (i.e., interventions that provide an individual with data on actual drinking behavior of a particular group in comparison to their perceptions of the group's behavior; Chan et al., 2007), and engaging participants in motivational interviewing (i.e., evidence-based therapeutic technique to increase readiness to change behavior; Hettema et al., 2005) have been promising intervention tactics among college students and will likely translate well to military personnel. It is concerning that so few prevention and risk-reduction programs have tested for changes in rates of SV perpetration/victimization. To have evidence-based prevention programs, future research must pursue

Orchowski's recommendations to test integrated programs with assessment of behavioral outcomes of SV perpetration/victimization, as well as theoretical mechanisms of behavior change.

7.3 Additional Research Findings, Gaps, and Ideas

In the subsequent section, we review additional research that complements the topics covered by the experts in their chapters. We focus on contextual factors and cultural norms that give rise to alcohol misuse and SV. Consensual alcohol consumption and sexual activity have been known to co-occur in many cultures, including on college campuses, in other civilian settings, and among individuals in the military. Examining larger culture factors that facilitate co-occurring alcohol use and sexual behavior may provide insights into prevention of alcohol-involved SV. We conclude with a focus on sexual double standards and argue that this topic deserves more attention in alcohol-related SV research.

7.3.1 Heavy Alcohol Use and Sexual Violence

When considering alcohol use in the context of SV perpetration or victimization, it seems reasonable to focus most of our attention on heavy use capable of producing sufficient cortical impairment to reduce impulse control and judgment, increase aggression, or increase vulnerability to attack by predators. There are four indicators of such problematic use that are of potential interest, three of which are defined by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and that are typically measured in national prevalence studies. *Binge drinking* is defined as "a pattern of drinking that brings BAC levels to 0.08 g/dL or higher. This typically occurs after a woman consumes 4 or more drinks or a man consumes 5 or more drinks in about 2 hours." *Heavy drinking* is defined as "for men, consuming more than 4 drinks on any day or more than 15 drinks a week, and for women, consuming more than 3 drinks on any day or more than 7 drinks per week." *High-intensity drinking* is defined as "consumption of 2 or more times the gender-specific thresholds for binge drinking." The fourth indicator of problematic use is *alcohol-related blackouts* (ARB), which is rarely measured in major national studies of alcohol and drug use. ARB will be defined and discussed subsequently due to the extremely key role it can play in SV cases.

National data from NIAAA confirm that large numbers of US teenagers and young adults have problematic drinking patterns. In 2019, 11.1% of people between the ages of 12 and 20 year, or approximately 4.2 million, reported binge drinking within the past month. A total of 2.2% of this age cohort, or 825,000 people, had heavy alcohol use within the past month. Among young adults between the ages of 18 and 22, 29.6% reported binge drinking in the past month and 7% reported heavy

alcohol use within the past month. Prevalence of both past month binge drinking and heavy alcohol use among members of this cohort who were college students was higher than among those who were not college students (33.0% vs. 27.7%, respectively, for binge drinking, 8.2% vs. 6.2%, respectively, for heavy alcohol use).

Ultimately perpetrators are 100% responsible for causing SV. However, it is important to determine if alcohol intoxication plays a role in causing certain types of people to make the decision to perpetrate SV. In a recent study, Ramsoomar et al. (2021) examined associations between different levels of alcohol use (i.e., none, moderate, and harmful alcohol use), intimate partner violence, and SV against a non-intimate partner in the past year among 8104 men pooled from five data sets stemming from studies on violence against women and girls' prevention programs in Africa. A large proportion of the men reported they had perpetrated physical IPV (29%) and non-intimate partner SV (26%). Analyses using data from all studies of the prevention programs found a significant association between harmful alcohol use and IPV and SV perpetration compared to no alcohol use. The association between moderate alcohol use and perpetration varied across studies. This study highlights the importance of considering level of alcohol misuse when attempting to determine associations with SV perpetration. Further, it supports the importance of addressing alcohol use in prevention programming for SV, continued research to understanding the temporal relationship between levels of alcohol use and SV, and the interacting role of alcohol with other variables known to influence SV perpetration (e.g., impulsivity, sexual arousal; Davis et al., 2006; Tharp et al., 2013).

7.3.1.1 The Key Role of Alcohol-Related Blackouts in Alcohol-Related Sexual Assault Cases

Alcohol-related blackouts (ARBs) are an underappreciated, under researched phenomenon that is likely involved in many SV incidents, in which victims or perpetrators have consumed large amounts of alcohol (Kilpatrick & Hahn, 2019). Briefly described, ARBs are defined by NIAAA as "gaps in a person's memory for events that occurred while they were intoxicated," and they result from a pharmacological effect of high blood alcohol concentration (BAC) levels on the ability of the brain to consolidate short-term memories into long-term memory, resulting in an inability to recall memories at a future time (Goodwin, 1995; Hingson et al., 2016). The most common type of ARB is a partial blackout (i.e., missing or fragmentary gaps in memory for what happened during periods of heavy drinking), but individuals can also have en bloc, or total blackouts, in which they have no memory for anything that happened during the heavy drinking episode. During a blackout period, the person who is intoxicated is ambulatory, not passed out, and may be able to converse or interact with others. They may be able to remember things for a few minutes, but these things are not encoded into long-term memory. One well-respected group of alcohol researchers has operationalized measurement of ARBs as "forgetting where you were or what you did while drinking" (Hingson et al., 2016).

Memory loss is not helpful in SV cases. When someone makes an allegation of SV, an unrealistic expectation exists that they will have a detailed, accurate memory of everything that happened, so the problems they are likely to experience are apparent when they make an accusation but have a less than perfect memory due to an ARB. Less obvious is the problem in evaluating the credibility of someone accused of SV perpetration who may vigorously deny accusations, because they do not remember what they did due to a partial or total ARB (Kilpatrick & Hahn, 2019). Some predators may seek their target knowing full well that a highly intoxicated victim may experience ARB-related memory problems that make them less likely to report the case to authorities.

A critical issue concerning ARBs is whether a BAC level high enough to produce a total or partial ARB is sufficient to produce behavioral indicators of severe intoxication that signal observable impairment and potential inability to consent. If so, those making sexual advances should be on notice that the person they are dealing with may not be able to consent due to impairment and should act accordingly. If not, they can argue that they had no way of knowing that the person was incapable of consenting due to impairment.

Although not everyone with a high BAC level has ARBs, ARBs never occur unless BAC levels are relatively high. Total ARBs do not typically occur unless BAC levels are 0.16 or higher (e.g., Goodwin, 1995), but partial ARBs have been reported at BAC levels as low as 0.06. The University of Notre Dame's website provides a useful description of behavioral and cognitive effects of alcohol consumption at several BAC levels. At 0.06–0.099, there is a slight impairment of balance, speech, vision, reaction time, and hearing. There is euphoria, reduced judgment, reduced self-control, impaired reasoning, and impaired memory. At 0.10–0.129, there is significant impairment of motor coordination and loss of good judgment. Speech may be slurred, and peripheral vision, reaction time, and hearing will be impaired. At 0.13–0.159, there is gross motor impairment and lack of physical control. There is blurred vision and major loss of balance. In short, there are easily observable cognitive and behavioral changes that occur well below a BAC level of 0.16, irrespective of whether an individual has a partial or total ARB or not.

ARBs typically occur when there is a rapid rise in blood alcohol concentrations, which often occurs from binge drinking episodes that are facilitated by "pregaming" and "drinking games" (Anda et al., 2006; Goodwin, 1995; LaBrie et al., 2011; Ray et al., 2014; Wahl et al., 2013). Sex differences in the pharmacological effects and metabolism of alcohol may explain why women are more likely to experience ARBs than men even though they report consuming less alcohol (Sugarman et al., 2009; White et al., 2002).

Based on a recent review (Wetherill & Fromme, 2016), more than half of adolescents and young adults who drink alcohol experience ARBs, and ARBs often reoccur among adolescents and young adults (Barnett et al., 2014; Wetherill & Fromme, 2009; Marino & Fromme, 2016). ARBs are also a potent risk factor and marker for other alcohol-related problems (Mundt et al., 2011; Read et al., 2013; White et al., 2002). History of ARBs is also linked to alcohol-involved SV victimization particularly among college women with a past history of SV victimization

(Valenstein-Mah et al., 2015; Wilhite et al., 2018). Women who reported recent ARBs are also more likely than men with ARB histories to report unwanted, unsafe, and regretted sex (Haas et al., 2016). Research has been mixed about whether ARBs predict risk of SV perpetration, with one longitudinal study among college students finding that ARBs predicted SV victimization, but not SV perpetration (Wilhite et al., 2018).

There are several reasons that greater efforts need to be placed on understanding the role of ARBs in both alcohol-involved SV and problematic alcohol use more generally: (1) women are more likely to experience ARBs after consuming fewer standard drinks than men, creating vulnerability for SV victimization in common social drinking settings that often involve pregaming and drinking games; (2) ARBs are a marker for heavy drinking and a host of alcohol-related harms, including missing class or work, getting behind in school or work, arguing with friends, seeing a doctor due to an alcohol overdose, and doing something while drinking that they later regretted (Hingson et al., 2016); and (3) adolescents and young adults are motivated to drink to get drunk (Boekeloo et al., 2011; Patrick & Schulenberg, 2013), and an unintended but a likely consequence outcome of this desire is a BAC level high enough to increase vulnerability to both ARBs and SV victimization.

A challenge to understanding the intersection between ARBs and SV victimization and perpetration is that human research participant guidelines for laboratory research limit administration of very high doses of alcohol needed to achieve BAC levels of 0.16 and higher that are associated with increased risk of experiencing total ARBs. However, as we have described, partial ARBs can occur at lower BAC levels than 0.16, so it is feasible, important, and ethically possible to do laboratory research that examines the impact of administration of different alcohol doses on subsequent memory using some of the SV experimental paradigms described in several of the chapters in this volume. By doing a next day follow-up after these experimental sessions, it would be possible to assess for memory of relevant events happening during the experiment as an analog for potential partial ARBs. Also, history of ARBs could be assessed for all participants and used to test for ARB mediator or moderator effects. Additionally, research using techniques such as ecological momentary assessment data collection techniques and field studies are urgently needed.

7.3.1.2 Alcohol Use, Sex, and Hookup Culture

Among a nationally representative sample of sexually active adults who drank alcohol in the past year, 59% reported having sex after drinking (Eaton et al., 2015). Alcohol use is particularly common in the context of hookup behavior or sexual activity between non-romantic partners (Bogle, 2008). Despite sexual minority youth being two times more likely to report having sex while intoxicated (Herrick et al., 2011), research on hookups and alcohol has typically used samples of heterosexual college students. Over half of college students reported a hookup by the end of their first year of college, and more than half of the hookups involved alcohol and/or heavy alcohol use (Fielder & Carey, 2010; Thorpe et al., 2019). Most

hookups occurred in the context of attendance at bars/parties, and higher intoxication level is associated with greater likelihood to have a hookup (Fielder & Carey, 2010; LaBrie et al., 2014; Wilhite & Fromme, 2019). Although hookups among college students tended to involve friends or acquaintances compared to strangers and did not involve penetration, alcohol use was particularly common during hookups with partners who only met recently and hookups that involved sexual penetration (LaBrie et al., 2014; Thorpe et al., 2020). Hookups may be a normative part of emerging adult sexuality (Thorpe et al., 2020). For instance, up to 70% of sexually active adolescents and emerging adults reported sex with an uncommitted partner (Grello et al., 2003; Manning et al., 2006). Further, most college women reported at least one positive outcome following a hookup (Shepardson et al., 2016). However, hookups while engaging in heavy drinking may increase the risk for negative outcomes, including unwanted sexual experiences that result in discontent/regret (LaBrie et al., 2014), lack of condom use (Simons et al., 2018), and SV (Lewis et al., 2011).

7.3.1.3 Norms and Expectations for Drinking and Sex

Among emerging adults, sexual activity with both committed and noncommitted partners while drinking is normative (Garcia et al., 2012; Orchowski et al., 2020). College students drink alcohol with peers to have sex and justify engaging in sexual behaviors (Lindgren et al., 2009; Ven & Beck, 2009), including SV such as having sex with incapacitated committed partners (Jozkowski et al., 2017; Orchowski et al., 2021). Qualitative research suggests that men who attend drinking venues such as parties and bars believe that men and women in these venues have the intention to hookup and experience pressure to hookup themselves (Orchowski et al., 2020). The association between drinking and sex is greater among college students with stronger sex-related alcohol expectancies, such as expecting that alcohol use will make having sex more enjoyable, decrease negative emotions during sex, and increase likelihood of engaging in sexual behaviors (Patrick et al., 2014). Yet, young people who engage in hookups while drinking report less sexual satisfaction compared to hookups that don't involve alcohol (Herbenick et al., 2019) and less safety/comfort and agreement/wantedness during the encounters (Jozkowski & Wiersma, 2014), demonstrating a discrepancy between the motives for having sex with casual partners and the outcomes when alcohol is involved.

7.3.1.4 Scripts for Sexual Consent While Drinking

There is far less research on consent in the context of alcohol use compared to alcohol-involved SV (Jozkowski & Wiersma, 2014; Orchowski et al., 2020). This is a very complex topic, because sexual consent is defined as sexual activity that is

freely given through nonverbal and verbal communication (Hickman & Muehlenhard, 1999), and it is not clear at what level of intoxication people can still freely provide consent (Jozkowski & Wiersma, 2014; Muehlenhard et al., 2016; Orchowski et al., 2020). Consensual sexual behavior while drinking should not be conflated with alcohol-involved SV. Although both exist within the same patriarchal system and are influenced by stereotypical gender norms, the experiences are distinct, and mislabeling SV as a type of miscommunication that occurs during consensual sexual behavior or regretful drunk sex is a tactic that perpetrators use to rationalize SV. However, it is important to recognize that emerging adults have sexual experiences that they view as consensual when they are intoxicated. For instance, in a naturalistic study, over 90% of participants who had an average BAC level of .08 reported they could consent to sexual activity and would do so if they met a partner, they wanted to have sex with (Drouin et al., 2018). Understanding how people view consent in the context of alcohol use may provide us with useful information regarding prevention of SV.

Many male and female college students view behaviors that occur before sexual activities have even begun, such a leaving a bar to go to a private setting or consuming alcohol together, as indications of sexual consent (Beres, 2007; Jozkowski & Peterson, 2013; Jozkowski & Willis, 2020; Orchowski et al., 2020). Men tend to be more likely than women to view mutual drinking behaviors as indication of consent (Jozkowski et al., 2017). Based on qualitative research with college students, sexual consent is rarely verbally communicated, often viewed as implied, and there is no clear understanding of how to identify nonconsensual behavior (Macneela et al., 2014; Wignall et al., 2020). Women reported using more verbal behaviors to indicate and interpret consent, while men use and interpret nonverbal behaviors to indicate consent (Jozkowski et al., 2014). Other nonverbal consent strategies are commonly used among emerging adults, although they are often not effective at ensuring consent. Belief in and use of nonverbal consent strategies was associated with both SV perpetration and ambiguous consent or having sex with someone when it was unclear if consent was obtained among college students (Walsh et al., 2016).

7.3.1.5 Sexual Standards

Many SV cases involve predators with antisocial personality characteristics who seek out vulnerable individuals to exploit. However, other SV cases can result from the perpetrator failing to acknowledge or respect behavioral indicators of nonconsent, including lack of communication of consent or inability to consent due to impairment, or indications that persisting in sexual activity would constitute SV. This may be particularly true in SV cases with excessive alcohol consumption by one or both parties that do not involve substantial force or threat of force. There has been insufficient consideration in SV research of the sexual aspect of SV, which includes sexual standards and how lack of congruence of one's own sexual standards with those of a potential sexual partner may contribute to people's risk of

continuing to persist in sexual activity with someone after failing to recognize the other person(s) lack of sexual interest or intent and miscommunications or misunderstandings about sexual interest or intent.

Briefly described, sexual standards are personal attitudes and cultural norms about what sexual behaviors are appropriate for whom under what circumstances. Ira Reiss noted that the traditional sexual standards in the USA in the early 1960s assumed that everyone was heterosexual and that the primary contexts in which sexual standards applied were before and outside of heterosexual marriage (Reiss, 1960, 1964, 2001). He measured sexual standards by determining which types of sexual behaviors before marriage were viewed as permissible for men versus for women under four conditions of affection between partners. Conditions of affection were if in love, engaged, having strong affection for the partner, and not having strong feelings of affection for the partner. Disapproval of premarital sexual activity under all affection conditions reflected an abstinence before marriage standard. If respondents thought the same sexual standard should apply to both men and women, they were classified as having an abstinence, permissiveness with affection, or permissiveness without affection standard. If they held different sexual standards for men than for women, they were classified as having a double standard. The typical double standard was a belief that it was permissible for men with little or no affection for their partner to have sex with women but that women should not have sex with men unless they had strong affection for their partner.

Reiss (2001) was critical of this traditional sexual double standard because of its nonegalitarian nature that was demeaning to women. He was also critical of the abstinence standard because it was unrealistic and contributed to a climate that made comprehensive sex education difficult to implement. He also noted that this standard could be used by a man who holds it to justify having sex with a woman that he has no affection for on the grounds that this is an acceptable behavior for men, irrespective of whether she has a permissiveness with affection standard. Conversely, if casual acquaintances in a hookup situation both have a permissiveness without affection standard and believe that sexual activity is permissible in situations, in which no affection exists between partners if there is mutual sexual attraction, there is greater likelihood that a sexual advance made by one party may be consented to by the other. Few people have given much thought to their own sexual standards or how to have a thoughtful conversation with a potential sex partner about the partner's sexual standards, much less about the partner's current interest in engaging in mutually consensual sexual activity. Moreover, such conversations are likely more difficult to have under conditions of excessive drunkenness among one or both parties.

Kilpatrick and colleagues expanded on Reiss' work by developing a Sexual Attitude and Behavior Survey (SABS; Kilpatrick & Smith, 1973) and conducting a series of studies using it with college students, medical students, and law students (e.g., Marcotte et al., 1976; Marcotte & Logan, 1977; Smith et al., 1976, 1980). The SABS measured attitudes about permissibility of a more comprehensive list of sexual behaviors that included masturbation, oral sex, anal sex, sex with more than one person at the same time, and having sex with a person of the same sex. The SABS

also asked about the permissibility of each sexual behavior for men, for women, for themselves personally and the frequency with which respondents had engaged in each of the sexual behaviors in question. Studies using the SABS found that college students with more liberal sexual attitudes and behaviors also had more profeminist attitudes toward women's sex roles, and those with more traditional attitudes about what women's sex roles had more conservative attitudes about sexual behavior (Smith et al., 1976, 1980). These studies also found that men's attitudes about what was permissible for men to do sexually were more permissible than what they thought permissible for women to do. In many cases, both men and women had slightly more conservative standards for what they thought was permissible for themselves to do personally than they did for people of their sex to do. Finally, human sexuality courses using pre-post SABS scores showed increased tolerance for circumstances, under which sexual activities were permissible for men and women but no changes in what they thought was permissible for themselves (Marcotte et al., 1976; Marcotte & Logan, 1977).

Sexual standards and values are rarely addressed in formal education about human sexuality, which is now framed by the CDC as sexual health education (SHE). There is often opposition to frank discussion of sexual matters in sex education training with young people on grounds that this might undermine traditional values that stress sexual abstinence before and outside of marriage or that it will cause people to stray from their previous moral values. Consequently, SHE focuses more on no sex or safe sex as opposed to fostering a thoughtful, nonjudgmental examination of one's own values about sexuality and appropriate sexual behavior. Moreover, the CDC notes that only 43% of high schools and 18% of middle schools teach the key SHE topics (CDC, 2018).

Although it has been argued that young people have become more progressive and egalitarian in their sexual standards, a recent meta-analysis documented the presence of sexual double standards in terms of hookup behavior among young adults (Endendijk et al., 2019). Even if young people do not endorse sexual double standards themselves, they do believe that women are more likely to be judged for casual sexual behavior than men, and women are more likely to report that they have been judged for hookups compared to men (Kettrey, 2016). Further, men and women approve of different sexual freedoms for their peers based on gender. In a naturalistic study, women were less likely to report they would let their female friend who had been drinking alcohol consent to sex compared to men's likelihood of letting their male friend (Drouin et al., 2018). However, women were just as likely as men to say that they would consent to having sex themselves after drinking. Sexual double standards have also been found among adolescents, with girls having a decrease in friendship after having sex and boys having an increase in friendships (Kreager et al., 2016). Unfortunately, 60 years after tremendous efforts and changes stemming from the sexual revolution and women's movement, we still see that sexual double standards exist among teenagers and young adults.

Drinking to have sex is one way that young people can navigate sexual exploration in a culture that still upholds sexual double standards by stigmatizing people for deviating from traditional gender scripts. Women are condemned for healthy

expressions of sexuality, and men are expected to initiate sexual activity during hookups. Sexual double standards and the stigmatization of consensual sex have important implications for SV. In fact, men and women who reported feeling that they lost respect for engaging in a hookup were more likely to report they experienced verbal sexual coercion (Kettrey, 2016).

7.4 Implications for Prevention of Alcohol-Involved Sexual Violence

7.4.1 Sexual Health Education Programs

It is unfair to expect young people to feel comfortable navigating a conversation about sexual consent with their peers, when most middle schools and close to half of high schools did not provide students with all the CDC recommended sexual health education. As recommended by SIECUS and other scholars (Walsh et al., 2019), SV prevention efforts should focus on adolescents and include a focus on contemplation of one's sexual values, desires, and boundaries, as well as training in how to effectively communicate and respect another person's desires and boundaries in relationships. Ira Reiss (2001) advocated a new pluralistic sexual standard that he called HER sexual pluralism (Reiss, 2001). The HER acronym refers to sexual relationships that are *Honest*, *Equal*, *and Responsible*, and Reiss argued that any sexual relationship with these three characteristics should be viewed as morally acceptable irrespective of the amount of love, affection, or lack thereof, among partners and irrespective of the sex or gender combinations of the partners. *Honesty* between sexual partners requires clear, honest communication about each partner's willingness to engage in sexual activity. *Equality* between partners requires making sure that each party is treating the other as an equal and not as an inferior who can be exploited. *Responsibility* between partners requires taking typical safe sex precautions but also ensuring that sexual advances are consensual and neither physically nor emotionally harmful to the other party.

From the perspective of SV prevention education, we believe that there are several advantages of explaining, advocating for, and including Reiss' HER standard in sex education and SV prevention programs. Its emphasis on honest communication highlights the importance of being able to talk with a potential sexual partner about what you are up to and what they are up for. Its emphasis on equality implicitly rejects a sexual double standard or any other actions directed toward a potential sex partner motivated by sexism, racism, classism, or sexual minority status. The emphasis on equality also highlights the importance of congruence of sexual standards between partners as opposed to what those standards are, assuming that the sexual activities are consensual and not harmful to either party. What matters is whether the potential sex partners agree, not whether their agreement is that sex should only occur with affection or love or that the only thing required is mutual

sexual attraction. The emphasis on personal responsibility for making sure that the sex is safe and will not result in physical or emotional harm to either partner is important pragmatically, ethically, and morally. Finally, the HER standard conveys an important message of tolerance on the one hand and high ethical behavior on the other. The HER standard is easy to understand and can be met in different ways by people who advocate abstinence, permissiveness with affection, or just sexual attraction.

However, making sure that sexual activity is happening in a HER context is no small thing. It requires you to know how to examine your own standards and values, communicate honestly with partners, find out the standards of potential partners, treat them as equals, and ensure that you are being safe and not doing them harm. The value of incorporating programming about the need for having sexual relationships based on Reiss' HER values into typical CDC sex education and SV prevention programming is apparent.

Sexual education programs also must integrate the impact of alcohol and substance use on sexual decision-making and behavior. Research supports that harm reduction techniques aimed at increasing protective behavioral strategies related to drinking (e.g., limiting number of drinks, not drinking distilled spirits, not drinking while alone) and sexual assault victimization (e.g., leaving a party/bar with friends and not with someone you just met) may be an effective way to decrease alcohol-involved SV (Gilmore et al., 2015, 2016; Neilson et al., 2018; Sell et al., 2018). Less research has focused on harm reduction techniques for SV perpetration. Some perpetrators are psychopathic predators who lack empathy for others, and they are unlikely to benefit from any type of prevention. However, other young adults may be motivated to learn protective behavioral strategies to limit their drinking and improve their empathy and respect for and communication with potential sexual partners, in ways that enable them to avoid drunkenness and have mutually consensual sex in safer ways. Further research on the type of communication and strategies that young people use during sexual encounters that are viewed as positive and consensual within drinking environments may help to inform these efforts.

7.4.2 Enhancing Reporting, Investigation, and Adjudication of SV Cases

Some types of SV (e.g., rape and sexual assault) are crimes under state laws, federal laws, or the Uniform Code of Military Justice (UCMJ). Other types of SV violate civil codes, such as Title IX of the US law prohibiting sex discrimination at educational institutions, and some SV violations of Title IX regulations are SV crimes. Fear of punishment due to enhanced enforcement of criminal laws and Title IX provisions prohibiting SV is an important motivational tool that can deter potential perpetrators, ensure that perpetrators are punished, and send a powerful message

that this behavior is unacceptable and can result in extremely negative consequences for the perpetrator.

It was surprising that none of the symposium papers addressed the need to improve investigation and adjudication of SV cases to enhance SV prevention or deterrence. This may stem from a learned helplessness-driven conclusion that it is impossible to reform the criminal justice system (CJS), military justice system (MJS), or Title IX investigative procedures to address allegations of SV in a sensitive, fair, and effective way that protects the rights of both the accused and the accuser. It may be "the triumph of hope over experience" on our part as Oscar Wilde once said about second marriage, but we think it is both possible and imperative to make the CJS, UCMJ, and Title IX procedures work better in cases of SV, including those involving alcohol-related SV.

In a recent paper (Kilpatrick & Hahn, 2019), we described why accusations of SV cases that meet the legal definition of rape are frequently met with skepticism and how the CJS process is biased against those who make such accusations, particularly if accusers are women. This included evidence from legal scholars documenting that "sex crime law derives from a historical background of bias against women" and that "this historical view of rape…also perpetuated the belief that women lie about being raped" (Tracy et al., 2012, pages 4–5). Our paper identified seven common stereotypes about rape that contribute to misunderstandings about what rape is really like, how survivors behave, and how harmful SV is to survivors. Stereotypes were that rape is rare, that it only happens to adults, that most assailants are strangers, that most rapes are reported to police, that most victims sustain substantial physical injuries, that rapes without force do not produce mental health harm, and that false accusations of rape result in numerous convictions and incarcerations of innocent men. We addressed these stereotypes with data from well-designed epidemiological studies and found no support for any of them.

We did find a massive underreporting problem (i.e., only 18% of forcible rape cases and 10% of drug or alcohol facilitated/incapacitated rape cases were reported to police) and that a minuscule fraction of all rapes experienced by adult women resulted in the conviction and incarceration of an assailant (i.e., an estimated 9.51 out of every 1000 rape cases that occur). Nonreporting accounts for most of the inability to adjudicate cases, but we cited a recent paper by Morabito et al. (2019) that tracked reported cases in six jurisdictions and found that only about one out of every eight reported cases resulted in an arrest and criminal charges being filed.

Most rape cases involve someone the victim knows, so inability to identify the suspect is not the primary reason for not making arrests. The legal standard for making an arrest is having sufficient evidence to support a reasonable belief that a person has committed a crime. Obtaining the best evidence using state-of-the-science investigative procedures is essential to determine if probable cause exists, but some experts have concluded that the CJS and MJS frequently do not use such measures when investigating and prosecuting these cases, particularly if they involve alcohol or other drug use (e.g., End Violence Against Women International [EVAWI], 2021; Independent Review Commission on Sexual Assault in the Military [IRCSAM], 2021; Scalzo, 2007).

Since its founding in 2003, End Violence Against Women International (EVAWI) has developed training tools for law enforcement and prosecutors, as well as education campaigns that inform the public about the true nature of rape. The motto of EVAWI is *Start by Believing*, which means starting by giving SV accusers the benefit of the doubt by believing that what they are telling us is true. Next, EVAWI states that the CJS and MJS must conduct a rigorous investigation of the claim that treats both accusers and suspects with fairness and respect (Archambault & Lonsway, 2019). EVAWI contends that most police and prosecutors are ill-equipped to handle these cases without special training. Although EVAWI places emphasis on violence against women, its community-wide public education and professional education efforts address all SV crimes and SV victims including those involving men and sexual minorities.

The IRCSAM report (2021) similarly concluded that the MJS it is not equipped to respond properly to crimes involving SV and that all critical decisions made about these cases should be made by highly trained special victim prosecutors. This report provided numerous detailed suggestions about how to improve treatment of victims and enhance investigation and prosecution of these cases. Likewise, Teresa Scalzo, in collaboration with the American Prosecutors Research Institute, produced a detailed monograph addressing investigation and prosecution of alcohol-facilitated SV (2007). Scalzo notes that many prosecutors are reluctant to pursue these cases due to concerns about the perceived lack of credibility of victims who were severely intoxicated, but she identified numerous charging, investigative, and trial strategies that can improve the successful prosecution of these cases. Particularly valuable components of these strategies are approaches that focus attention on the defendant's rather than the victim's behavior and that facilitate understanding the difference between SV and "drunken sex." She argued that it is important to have specially trained prosecutors to handle these cases, and she stressed the need for prosecutors to start by assuming that the victim's version of events is true and accurate.

We addressed the stereotype about false allegations by arguing that it is not appropriate to conclude that an allegation is false solely, because a case was not reported to police, because there was not sufficient evidence to meet the probable cause standard to make an arrest, or because there was not sufficient evidence to obtain a criminal conviction using the guilt beyond a doubt standard (Kilpatrick & Hahn, 2019). Nor can the existence of a few high-profile cases in which someone may have been falsely accused be used to determine the magnitude of the false allegation problem. Therefore, we examined data from the National Registry of Exonerations, which contains a systematic database of cases in which defendants convicted of major crimes were subsequently cleared of all charges. From 1989 to March of 2019, there were only 323 such exonerations in sexual assault cases, and only 135 of these exonerations involved perjury or false accusations. Given estimates that there are more than a million rape cases each year, we concluded that there is no evidence of a widespread false allegation problem but considerable evidence that an exceeding small proportion of cases result in criminal convictions (Kilpatrick & Hahn, 2019).

When the criminal justice system fails to hold perpetrators accountable, there are serious implications for the safety of citizens. As documented in the Netflix series Unbelievable, Marie Adler was accused of making a false report of rape, and the person who raped her went on to rape multiple other women (Gajanan, 2019). In addition to individual punishment, improving our criminal justice response to SV could help to reshape cultural norms that condone SV, ultimately decreasing SV on a larger scale. The recent ruling of Minnesota Supreme Court in March 2021, to overturn a conviction of third-degree criminal sexual conduct because the victim voluntarily consumed alcohol prior to being sexually assaulted, highlights the imperative need to reform legislation related to legal definitions of sexual assault and incapacitation (*Thissen, J. v. Francios Momolu Khalil*, A19-1281(2021)). Only ten states have laws explicitly prohibiting having sex with someone who voluntarily consumed too much alcohol to be capable of giving consent, although both federal law and the UCMJ do make this conduct illegal. Also, 38 out of the 40 states that do not criminalize having sex with a person who is too intoxicated to consent due to their own drinking behavior do have other provisions of law that render this a crime in many circumstances (Tracy et al., 2012). Researchers focused on alcohol-related SV can play an important role in informing policy makers about the nature of incapacitated SV, and policy makers should make this an explicit crime in all jurisdictions.

The Institute on Domestic Violence and Sexual Assault at University of Texas released several informative evidence-based videos on SV tailored for police, prosecutors, and advocates (IDVSA, 2021). The series reviews education ranging from normal behavioral responses to SV, memory formation after traumatic events, and definitions of consent, and it offers several strategic tips for conducting trauma-informed interviews (e.g., asking sensory questions, providing education to survivors). The series places an important emphasis on perpetrators using alcohol to not only commit crimes of SV but to also get away with it. Instead of seeing victim alcohol use as a deterrent from prosecuting cases, it should be viewed as a case fact that may indicate the perpetrator targeted the victim and exploited this vulnerability. The series also debunks several rape myths including that of the following: perpetrators can't be responsible for SV, if they are also intoxicated; SV is often a result of miscommunication, when in reality perpetrators choose to ignore the victims' non-consent; and non-consent involves physical force rather than more common tactics of coercion, threats, and intoxication. Strategies to investigating alcohol-involved SV are also provided, such as evidence from electronic devices, credit cards, witnesses who may have observed the intoxication level of the victim, and examining perpetrators' behavior (e.g., "How did they gain consent?" "Did they engage in rescuing behavior?"). The importance of choosing language that fits with an allegation of SV rather than consensual sex because it can impact the outcome of a case is also reviewed (e.g., he said she said versus contradictory assertion). Informing community members, law enforcement, judges, and policy makers about the knowledge presented in this series can have important implication for survivor's engagement with the legal system and the chances that thorough and successful investigations of SV can be conducted.

7.5 Research Agenda for the Future

7.5.1 The Big Picture

There are several general conclusions about the status of alcohol-SV research. First, the current research portfolio is woefully inadequate, given the magnitude of the problem and the dire consequences of not having better data to guide our efforts to address it. Current efforts can be likened to attempting to extinguish a large wildfire with a small garden hose. This is better than nothing but totally inadequate to the scale of the problem! Second, we need to develop a right-sized research agenda that matches the size, scope, and nature of the problem. This will require more funding but also an enhanced research agenda that addresses all aspects of the problem using a variety of research strategies, tools, and levels of analysis. Third, we need research that includes, but moves beyond, an exclusive focus on risk and protective factors for SV perpetration and victimization among individuals. There are cultural norms, values, laws, and policies that influence individual propensities for drunkenness, SV perpetration, and SV victimization, so research must move beyond an exclusive focus on risk and protective factors among individuals. All the papers in this symposium recommended that we need more research on risk and protective factors among individuals. We agree. However, we also need research that examines the potential impact that cultural norms, laws, and policies play in encouraging or discouraging problematic versus more healthy behaviors. This research should explore whether and how culture, laws, and policies can be changed to discourage drunkenness and SV perpetration above and beyond individual risk and protective factors.

Fourth, much extant research on alcohol and SV prevention focuses on ways to discourage bad or maladaptive behaviors, and such efforts are clearly justified and needed. However, limited attention has been given to incorporating alternative behaviors that are more positive, healthy, and prosocial into prevention programs or to evaluating the potential impact of such content on the outcomes of prevention programs. With respect to alcohol, this is a tricky issue, because many alcohol education programs are based on an abstinence model for drinking before the legal drinking age of 21. The chief justification for this approach is that no amount of consumption is legal before age 21, and there is a large body of data documenting the profound negative outcomes of excessive alcohol consumption and drunkenness among teenagers and young adults. However, data on the extent of alcohol use in this age group suggest that abstinence-based approaches have been less than entirely effective and may have facilitated a highly risky pattern of consumption characterized by drinking substantial volumes of high-proof distilled spirits alone before social gatherings that also serve alcohol (Slingerland, 2021). Slingerland also noted that it very difficult to talk about positive aspects of moderate alcohol use or to advocate for moderate drinking as opposed to abstinence. Prevention or sexual health promotion programs for teenagers and young adults that acknowledge the reality that some drinking and sexual exploration are inevitable may turn out to be more productive.

7.5.2 Summary of Additional Recommendations

The experts in this symposium articulated several calls for research, prevention, and policy on alcohol-related SV. Here, we summarize and add to their recommendations. We encourage reading each chapter to fully appreciate the vast amount of work that needs to be done in this area.

7.5.2.1 Research Recommendations

A large proportion of research on alcohol-involved SV to date has focused on factors that exist within individual perpetrators and/or victims. This research is very useful for informing potentially modifiable factors that can be the target of SV prevention efforts. However, given the incredibly high prevalence of SV, alcohol-involved SV is not rampant in our society, simply not because of the actions of a few people with individual risk factors but because of an environment in which there are many potential perpetrators and victims whose paths collide. To move past an individual lens that has largely guided the field's understanding of alcohol-involved SV, it is essential to understand the situational or contextual factors that are involved in this type of SV. Besides alcohol, what other situational factors differentiate alcohol-involved SV from SV that does not involve alcohol? How might situational/contextual factors interact with alcohol to facilitate alcohol-involved SV? These are very difficult questions to answer because alcohol-involved SV is not a homogenous experience. Contextual factors may differ based on the type of alcohol-involved SV (e.g., unwanted touching in a crowded bar versus completed rape that occurs within a private room at a party), various tactics used by the perpetrator (e.g., coercion, alcohol, and/or force), population (e.g., college, military, general population), and demographics of the individuals (e.g., race, gender, sexual orientation). Further, as researchers identify contextual factors involved in alcohol-involved SV, these factors will likely be simultaneously changing with societal/cultural shifts (e.g., a potential perpetrator could not target someone during an encounter facilitated by the Tinder smart phone application 10 years ago). Although the dynamics of alcohol-involved SV are overwhelming, a wealth of knowledge would be gained from researcher administering surveys related to alcohol-involved SV to include assessment of the following: intoxication level of victim/perpetrators/bystanders and behavioral indicators of intoxication, areas of identity (e.g., race/ethnicity, SES status, sex, gender identity, and sexual orientation of victim/perpetrators), type of SV and tactics used by perpetrators with behaviorally specific items, setting of SV and relationship between victim and perpetrator, and use of other prescription and illicit substances by victim/perpetrator. Including assessments of these contextual factors will advance the understanding on the etiology of alcohol-involved SV, risk and protective factors, and ultimately intervention targets.

There are many elements of alcohol use that can differ across SV, including if alcohol was used by either or both the perpetrator and victim, the level of

intoxication of victim/perpetrator, the use of other substances that could interact with alcohol's pharmacological effects, and if alcohol consumption by the victim was voluntary or involuntary. In a national US study, over 80% of female survivors of alcohol- or drug-facilitated rape perpetrated by a current or former intimate partner, acquaintance, or stranger reported that the perpetrator also used alcohol and/or drugs (Basile et al., 2021). In this sample, about one-third of female and male survivors of rape reported that they involuntarily consumed alcohol and or drugs, which is higher than previous reports (Basile et al., 2021). Although it has been established that alcohol use tends to co-occur with victims and perpetrators of alcohol-involved sexual assaults, the level of intoxication that tends to be associated with SV has not been well researched. Further, little is known about the role of other substances in alcohol-involved sexual assault, which is concerning, since in a national sample over half of emerging adults reported lifetime illicit substance use (SAMSHA, 2019). We call for future researchers to assess for level of alcohol use and occurrence of ARBs among both SV victims and perpetrators, as well as use of other substances. Further, although there is an established association between alcohol and SV, we lack a fine-grained understanding of this association. Longitudinal research is also sorely needed to establish temporal associations between alcohol misuse, SV victimization, and SV perpetration. Given the prevalence and gravity of the impact of alcohol-involved SV, it is shocking that we have so few large-scale longitudinal studies in this area.

Most research on contextual factors and alcohol-involved SV has been conducted with white, cisgender, heterosexual, college students, greatly limiting our understanding of contextual factors involved in alcohol-involved SV with other populations. The focus on college populations is reasonable, given research that has supported that alcohol-involved SV were more likely to occur in the context of college. However, these results may be explained in part by younger age of college students, not just whether they are college students. There is an urgent need for research on alcohol-involved SV to expand to the community and to use a multicultural lens to understand how intersecting areas of identity relate to risk for alcohol-involved SV and associated outcomes. As reviewed by Dr. Parrott and colleagues, assessing for gender identity and sexual orientation is a basic first step that researchers must make, but we also need to extend all research efforts (e.g., laboratory-based, epidemiolocal, intervention studies) on alcohol-involved SV to community and marginalized populations, including sexual and gender minority populations and racial/ethnic minorities.

Another area of future research that was not addressed by the experts is the need to collect normative data on the sexual standards that emerging adults endorse for themselves and others regarding the acceptability of various types of sexual activity with different types of partners at different levels of intoxication. Specifically, a modernized, updated version of the Sexual Attitude and Behavior Survey (Kilpatrick & Smith, 1973), or something similar, could be used to gather normative data on sexual attitudes, behaviors, and standards for men, women, SGM individuals, and the individuals personally. These measures could also gather normative data about attitudes and behaviors in reference to Reiss' proposed HER standard. This would

require developing operational measures of the key HER constructs of honest communication, equality with potential partners, and respect for the sexual partners' well-being. Data from such studies could be used to inform SV prevention programs, much in the same way that personalized normative feedback has been used in alcohol and SV prevention efforts to provide feedback on normative peer drinking and sexual behavior (Orchowski et al., 2018; Testa et al., 2020).

Since young people may not endorse sexual double standards or standards that are not consistent with HER themselves but still believe that peers have sexual double standards (Endendijk et al., 2019) or non-HER standards, it may be helpful to ask people to judge the acceptability of different types of sexual behavior based on gender and provide feedback to correct for sexual double standards or non-HER standards. Further, normative data could be used to educate young people on variations in personal standards regarding sexual activity and the importance of engaging in sexual activity, when all parties are communicating with each other honestly, view each other as equals, and are acting responsibly. Finally, there should be research that tests the effectiveness of incorporating enhanced communication skills with partners about sexual matters and HER standards into sex education and SV prevention programs.

7.5.2.2 Recommendations for Prevention and Policy Change

Several important recommendations regarding intervention were also made by the experts. The work being done by Dr. Orchowski and others on prevention of alcohol-related SV among emerging adults and high-risk populations, such as the military, would benefit from a greater focus on adolescents. Given that the first occurrence of SV is often during adolescence, interventions targeting theorized mechanisms of change, such as stereotypical gender roles, sexual consent, and emotion regulation, may have the best opportunity for prevention. As we have discussed, integrating a focus on considering sexual standards and dispelling sexual double standards into prevention efforts may be advantageous. It also essential to consider men's role in SV perpetration and use motivational techniques to increase men's willingness to change stereotypical gender norms and related behavior. SV prevention efforts should acknowledge that young people will continue to have sex with drinking and take a harm reduction rather than abstinence-only approach. Cannabis use and use of other illicit substances, as well as their interactive effects with alcohol, also should be integrated into prevention efforts. These research efforts on prevention would benefit from the collaboration of sexual health, substance use, and SV researchers.

Prevention interventions are important, but they are just one approach to combating the enormous problem of alcohol-related SV. As Dr. Testa discussed, we must also address drinking policies, such as cost of alcohol, restriction of alcohol at events (e.g., no hard liquor), and rules related to Greek Life (e.g., parties being hosted at fraternities and not permitted at sororities). Slingerland (2021) also offers some creative policy changes including placing a much higher tax on distilled

spirits than on beer and wine to discourage consumption of the former and increasing compensation of bartenders and servers to make them less dependent on tips that may incentivize overserving. Previous research demonstrates that alcohol-control policies are associated with decreased SV perpetration among young men (Gatley et al., 2017). Research is needed to understand the impact of policy change on rates of alcohol-related SV. Other strategies include decreasing objectifying images of women in mainstream media and public service announcements, in which prominent figures dispel rape myths and harmful gender norms and denounce objectification of women (Gervais & Eagan, 2017).

There is also an abiding need for good, contemporaneous, epidemiological surveys measuring the prevalence, scope, and nature of drunkenness, SV perpetration, and SV victimization, particularly among teenagers, young adults, and other individuals who are at high risk for these outcomes, including college students and members of the armed forces. Such surveys can also provide data on the extent to which we are making progress in promoting better understanding of what SV is and whether experiences we have had are SV. A recent survey by Jaffe et al. (2021) is illustrative. Reasoning that increased publicity about high-profile SV cases that launched the "Me Too" movement might impact either the prevalence of SV or the recognition thereof, these authors surveyed more than 2500 college students and found that there was no change over a 3-year period in the prevalence of sexual assault using behaviorally specific definitions. However, those with behaviorally specific experiences of sexual assault were increasingly more likely to label the experience as a sexual assault each year after 2017 when the "Me Too" movement started. We also lack data on how aware SV victims are about services, the portion of all SV victims who utilize services, or who know about anonymous reporting options. Surveys are also a good way to determine the proportion of SV cases are reported to law enforcement or to campus Title IX or Clery Act offices as well as why SV victims do and do not report. Without this type of public health surveillance data, we lack key information needed to guide our prevention efforts and gauge our progress.

Finally, longitudinal research is needed to track the progress and disposition of SV cases that are reported to law enforcement and/or Title IX/Clery Act offices. Data from such studies are a good marker of how well these systems are working and help us learn where improvements are needed. This type of case tracking data before and after interventions is essential to tell if an intervention is successful.

7.5.3 Improving SV Research: The National Center for the Prevention and Control of Rape (NCPCR) Model

A recent chapter on historical roots of the PTSD construct described how anti-rape activists, who were lobbying the US. government for funding to support rape crisis centers, were responsible for getting a law passed in 1975 that established the

NCPCR within NIMH (McFarlane & Kilpatrick, 2021). This law appropriated $6 M per year in dedicated funding for rape research, which amounts to approximately $30.5 M per year in 2021 dollars. The NCPCR had a broad, diverse research portfolio including the following: (1) epidemiological studies of rape prevalence in communities, college campuses, sex workers, and jails; (2) studies of incarcerated and nonincarcerated sex offenders; (3) investigations of cultural factors related to rape supportive attitudes; (4) community-based rape prevention studies; (5) studies of attrition of reported rape cases in the CJS; (6) studies of the mental health impact of rape; and (7) studies supporting development and evaluation of treatments for rape-related mental health problems. The NCPCR had a dedicated application review committee comprised of members with a broad range of expertise, all of whom were familiar with rape research. Committee members could conduct prereview site visits on complicated applications to clarify details and assess feasibility. Applications were not restricted in length, so applicants could describe complicated methodological details sufficiently to let reviewers know what they were doing. Every application was discussed during the review process, and reviews included discussion of human research participation protection issues by reviewers who were familiar with this type of research. Budgets were reviewed rigorously, but there was no arbitrary direct cost limit restricting the type and amount of research that could be done if there was sufficient scientific justification. This meant that it was possible to conduct large-scale, methodologically difficult, human research protection challenging, but critically important research if it were done carefully and well-justified.

As Koss (2005) described, this NCPCR model and funding had a profound effect on the quality and quantity of rape research that was conducted. This funding catalyzed the field of rape research, and many well-respected rape researchers got their start with NCPCR funding. These include Gene Abel, Susan Ageton, Judith Becker, Lucy Berliner, Ronnie Janoff-Bulman, Karen Calhoun, Ellen Frank, David Finkelhor, Edna Foa, Judith Herman, Dean Kilpatrick, Mary Koss, Patricia Resick, Barbara Rothbaum, Benjamin Saunders, Murray Straus, and Lois Veronen. As Koss (2005) noted, the NCPCR and its funding were abolished in 1988 due to conservative political opposition, and there was no longer a centralized "home" that fostered and funded a broad array of rape research.

There are several federal agencies that fund certain types of SV research (e.g., the CDC, DOD, NIMH, NIAAA, NIDA, NICHD, NIJ, and DVA), but funding levels of individual grants are often severely limited. SV research per se is rarely prioritized by these agencies, so SV researchers must tailor their research interests to fit agency priorities as opposed to proposing the type of SV research that most needs to be done. NIH institutes have placed increased emphasis on research that incorporates biological research questions, biomarkers, and levels of analysis. Such research is extremely valuable and relevant to some types of rape research, but it is not the most appropriate approach or level of analysis to use for many badly needed types of SV research. Some excellent research has been funded, not the least of which is that which has been described in the chapters in this symposium. However, each

paper identified areas of needed research that is yet to be conducted because of funding limitations or difficulties in getting IRB approval for studies that were challenging but misunderstood by reviewers who are not SV researchers. SV research is siloed within each funding agency, meaning that it is difficult to get grant funding that bridges multiple topic areas. Very little, if any, funding is specifically designated for SV research, and there is no one agency that serves as a "home" for SV research.

There is no dedicated funding set aside for SV research, and we do not have a "National Sexual Violence Research Institute" analogous to the National Cancer Institute. Such a center has proven its value in the past and is needed now to highlight the importance of SV research and to catalyze future development of all key components of SV research. In our opinion, this fragmentation and lack of dedicated funding has dramatically hindered the development of the SV research field. Therefore, we offer the following "modest proposal."

A new federal National Sexual Violence Research Institute Center (NSVRIC) should be established with a dedicated funding stream of no less than $42 million in new funding per year. In inflation adjusted dollars, the $6 M per year for rape research funding in 1976 amounts to $30.5 per year in 2021, but the US population in 2021 is 333.5 M vs. 218.0 M in 1976, a 37.6% increase. Therefore, providing the same amount of inflation-adjusted per capita funding for SV research in 2021 would require an increase of 37.6% over the $30.5 M inflation-adjusted estimate for 1976, which amounts to approximately $42 M per year. The NSVRIC should have its own review committee; application page limits sufficiently long to permit researchers to describe specific aims, significance, innovation, and methodology in proper detail; and application funding limits that are sufficient to accommodate large-scale challenging SV research projects when the scientific merit of the research and budget are well-justified. In addition to funding R01 type grants, the NSVRIC should also fund K awards, institutional research training grants, and center grants. The basic goals are as follows: (1) rightsize SV research funding to match the magnitude of the SV problem, (2) encourage talented researchers to work in this area, (3) build a research infrastructure capable of addressing SV from a variety of perspectives, and (4) attract and train the next generation of SV researchers.

This "modest proposal" is far from modest and is likely to generate questions, concerns, and criticism. One question is whether it is feasible to obtain $42 M in new funding. We have two answers: (1) it was done before in 1975, so there is no reason it cannot be done again; and (2) there is overwhelming evidence that a SV problem this big requires a research investment this large to address. A concern is whether providing this much new funding would diminish existing funding for SV research that is now spread across many other programs and agencies. This is a risk, but it is not inevitable, particularly if it is made clear that new funding is designed to expand the extant SV research funding and portfolio, not to transfer funds from extant SV grant programs to a new program. In short, it is not a zero-sum game. It would be bureaucratically challenging, but providing an incentive to existing agencies that fund SV research to support the new funding initiative by having a

mechanism by which the NSVRIC could provide partial or total funding for meritorious SV applications that were recommended for funding by other agencies would be useful. Something else to consider is mandating that agencies that fund SV research grants provide summaries and funding amounts for these grants to the NSVRIC so that reasonably accurate information about the nation's SV research portfolio and funding thereof would be available in one place.

7.5.4 Conclusion

The status quo is not acceptable. SV, excessive drunkenness, and alcohol-related SV should not be tolerated. Many changes are needed to take us from where we are now to where we want and ought to be, but we cannot get there without better SV research and a lot more of it. However, research alone is not sufficient. In our view, developing greater ethical and moral clarity about the unacceptability of SV and the need for evidence-based SV public awareness and advocacy efforts based on the best research are equally important.

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