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Prevention of sexual violence among college students: Current challenges and future directions

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Abstract

Objective: Preventing sexual violence among college students is a public health priority. This paper was catalyzed by a summit convened in 2018 to review the state of the science on campus sexual violence prevention. We summarize key risk and vulnerability factors and campus-based interventions, and provide directions for future research pertaining to campus sexual violence.

Results and Conclusions: Although studies have identified risk factors for campus sexual violence, longitudinal research is needed to examine time-varying risk factors across social ecological levels (individual, relationship, campus context/broader community and culture) and data are particularly needed to identify protective factors. In terms of prevention, promising

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individual and relational level interventions exist, including active bystander, resistance, and gender transformative approaches; however, further evidence-based interventions are needed, particularly at the community-level, with attention to vulnerability factors and inclusion for marginalized students.

Keywords

campus sexual violence; risk factors; prevention; marginalized students

Introduction

Sexual violence remains a critical public health concern for students attending colleges and universities. The Centers for Disease Control and Prevention (CDC) defines sexual violence as “a sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse.”^{1(p.11)} Such acts range from non-contact unwanted experiences (e.g., verbal sexual harassment) to forced penetration. The current paper generally focuses on contact-related behaviors. Unwanted sexual touching is the most prevalent form of campus sexual violence experienced by college students, followed by incapacitated (i.e., due to drugs/alcohol) rape, and attempted forced rape.² A clear understanding of the scope of this problem is hindered by: 1) use of official statistics to estimate its magnitude, as there is underreporting of sexual violence to campus authorities, 2) variation in definitions and measures of sexual violence in self-report surveys^{3–7}, and 3) missing data on surveys.⁸ Nonetheless, a recent review suggested that prevalence of sexual violence victimization on college campuses is approximately 5% for men and 25% for women.⁸ These rates remain comparable to what has been found since researchers began systematically measuring college women’s self-reported victimization in the 1980s.⁹

College students are an important focus for sexual violence prevention as 18 to 24 year-old females have the highest rate of sexual violence victimization compared to females of other ages¹⁰ and 81.3% of female victims experience a first rape before age 25.¹¹ The college context positions students to be at risk through decreased parental monitoring, increased alcohol use, increased sexual activity, and exposure to peer norms about sexual violence.^{12,13} Thus, sexual violence affects many college students, takes place in a high risk context of increasing independence and risk behaviors, and can result in many negative sequelae (e.g., psychiatric distress, academic problems).^{14–16}

It is critical to provide appropriate support for survivors⁶ while also engaging in upstream prevention approaches to eliminate sexual violence. In 2018 the University of Michigan Injury Prevention Center hosted a day-long event titled, the “Summit on the Prevention of Campus Sexual Assault.” The purpose of this summit was to better understand the state of campus sexual violence prevention science and to identify next steps for prevention under a public health model. Leaders in the field presented research data pertaining to sexual violence prevention for college students across levels of the social ecology.¹⁷ Presentations focused on the public health framework for prevention, risk factors for campus sexual violence based on experimental and survey research, special considerations for marginalized

students (i.e., sexual and gender minorities, racial/ethnic minorities), and evidence-based prevention programs delivered on campuses and in college communities. Interactions occurring during this summit catalyzed this subsequent summary paper, which included summaries provided by speaker authors, supplemented by additional literature. Key video excerpts are available on the University of Michigan Injury Prevention Center's website: <https://injurycenter.umich.edu/event/summit-on-the-prevention-of-campus-sexual-assault/>.

Several recent reviews summarize the sexual violence literature, many including college students, focusing on: prevention programs,^{18–22} violence against women,²³ risk factors for victimization and perpetration in college and general populations,^{24–27} and, specifically, male-targeted sexual violence programs.²⁸ Reviews specific to campus sexual violence prevention have focused on topics such as campus response/policy²⁹ or more narrowly on prevalence,^{2,5} or bystander programs,^{19,20} with a notable exception addressing prevalence, prevention, response, and policy, broadly.³⁰ In light of these prior reviews and given the Summit's focus, this paper broadly highlights key research findings to inform current campus sexual violence prevention efforts under a social ecological framework while recognizing that factors at a given level of the social ecology may also exert influence across levels. First, we summarize risk factors at the individual, relationship, and community levels, with particular attention to vulnerability among marginalized students (i.e., racial/ethnic minority students, LGBTQ students). Second, we describe key interventions across these levels. Finally, we provide directions for next steps in sexual violence prevention research and practice for colleges and universities, highlighting key technical packages.^{31–33}

Understanding risk factors for perpetration and victimization

To prevent sexual violence among college students, it is important to understand risk factors for perpetration and victimization identified in studies using survey and experimental research designs, across individual, relationship, and community levels. Note that although individual behaviors contribute to victimization risk when a perpetrator is present, sexual violence is never the fault of the victim as it cannot occur without a perpetrator.

Individual level risk factors—Individual level risk factors described here are summarized in Table 1. Data suggest that men are more likely to perpetrate sexual violence with research lacking on risk factors for female perpetration, likely given the low rates of this behavior.^{34,35} For men, risk factors for sexual violence perpetration with strong support include prior perpetration, sexual behaviors (e.g., multiple sexual partners, impersonal sex, motivation for sex, exposure to sexual media), and sexual- and violence-related cognitions (e.g., hostility toward women, hypermasculinity, rape myth acceptance).²⁴ Consistent with a prior review,²⁴ one recent study found that 19% of men reported sexual violence perpetration before college, with risk factors including sexual media consumption, alcohol misuse, and hypermasculinity.³⁶ Longitudinal research of sexual violence perpetration is infrequent, yet existing literature suggests that risk factors for perpetration, such as hostile masculinity, rape supportive beliefs, and pornography exposure, can change over the college years, and that these changes are associated with changes in the likelihood of sexual violence.^{37–39} Studies also suggest protective factors that buffer against sexual violence perpetration. For example, empathy, an individual level construct, may be protective via

moderating the relationship between some risk factors (e.g., perceived peer approval of forced sex, high risk drinking) and sexual violence perpetration.⁴⁰ Another study found that college men who felt they learned from committing prior sexual violence and felt remorse were less likely to perpetrate again within one year. In contrast, men who spoke about women in callous ways were more likely to perpetrate over time.⁴¹

In addition to female sex, research suggests several individual risk factors for sexual violence victimization including indicators of lower socio-economic status (e.g., difficulty paying for basic needs).^{15,35} Further, one study of college women found that over half of sexual violence cases occur in the context of victim and/or perpetrator intoxication⁴² supporting acute intoxication as a risk factor.²⁴ Emerging research also suggests that sexual violence victimization in the year before college entry relates to increased hazardous drinking during the first year of college⁴³ which can further increase risk.

Consistent with these surveys, experimental studies provide clues about risk factors for perpetration.^{44,45} Given the extensive literature linking alcohol consumption with sexual violence perpetration,⁴⁶ alcohol is the most frequently manipulated variable in laboratory studies.²⁷ Typically, men are randomly assigned to consume non-alcoholic or alcoholic beverages and are asked to read, listen to, or watch a sexual violence scenario before answering questions about how they would think, feel, and act in that situation. Compared to sober men, intoxicated men often have higher scores on measures of the woman's sexual arousal and their own sexual arousal, anger, belief that the woman "owed them" sex, perceptions that the man in the scenario acted appropriately, and willingness to act similarly in that situation.⁴⁷⁻⁵¹ Men higher in hostility and sexual dominance are the most likely to respond in a sexually aggressive manner when intoxicated.^{52,53} Thus, the effects of alcohol on cognitive processing appear to increase the likelihood that a man who is predisposed to be sexually aggressive will act in such a manner when intoxicated.

Beyond these general risk factors, marginalized students may differ in their experience of sexual violence vulnerability; thus, we highlight key topics of race and ethnicity and gender and sexual diversity below.

Racial and Ethnic Minority Students. The association between race/ethnicity and risk of sexual violence victimization is complex given that the socio-historical context of race in the United States has had a long-standing impact on the economic, social, and health consequences experienced by marginalized communities. Racial categories intersect and are influenced by other variables across levels of social ecology (e.g., socioeconomic status, campus environments, cultural norms, alcohol consumption), the unique effects of which are difficult to isolate. Measurement differences across studies increase this complexity. Although small numbers make precise estimates difficult, American Indian/Alaska Native students appear to experience higher rates of sexual violence than other students.⁵⁴ Asian and Pacific Islander students appear to be at lowest risk.^{55,56} One study found that Latino students (the largest minority group enrolled in U.S. post-secondary institutions⁵⁷) had lower rates of victimization than White students.⁵⁵ However, another study found generally comparable rates for Hispanic (12.2%) and non-Hispanic (11.6%) students,⁵⁶ making it difficult to discern a consistent pattern.

Regarding Black students (the second largest minority group in U.S. post-secondary institutions⁵⁷) results are mixed. One study found that they had higher odds of past-year sexual violence compared to White students,⁵⁵ another found comparable rates for White and Black students,⁵⁶ and others have reported lower rates for Black students compared to White students.⁹ Data from the Campus Sexual Assault study (conducted at two traditionally White public universities), and a similar study at four Historically Black Colleges and Universities (HBCU), suggest that racial differences in alcohol consumption and the extent to which survey questions account for alcohol-related incapacitation may clarify these inconsistencies. HBCU undergraduate women, versus those at non-HBCUs, had lower rates of incapacitated sexual violence (and overall sexual violence) yet comparable rates of physically forced sexual violence since entering college.⁵⁸ This difference appeared to be due to lower alcohol consumption among Black women (not unique factors of HBCUs), because no differences in sexual violence were found between Black women attending HBCUs and non-HBCUs and alcohol consumption was lower for Black women across school type.⁵⁸ Therefore, measurement nuances, particularly whether surveys query sexual violence when incapacitated due to substances, are important when attempting to understand racial/ethnic differences. Survey questions that do not assess sexual violence when incapacitated due to substances may undercount such experiences, producing estimates that primarily reflect physically-forced incidents.

Sexual and Gender Minority Students.: Sexual and gender minority college students are at elevated risk for sexual violence victimization prior to^{59,60} and during college,^{12,56,60,61} compared with heterosexual and cisgender students. Bisexual students experience disproportionate risk, with more than a quarter reporting sexual violence victimization, compared to 14% of gay and lesbian students and 11% of heterosexual students.⁵⁶ Students with multiple marginalized identities experience elevated victimization risk. A recent National College Health Assessment study found that Black transgender students had the highest predicted probability of sexual violence (58%) compared to the Latino (27%) and White (14%) transgender students.⁵⁵

Numerous social and contextual factors shape vulnerability to sexual violence among sexual and gender minority students. They often experience discrimination related to these aspects of their identities,^{62–64} which fuels violence perpetration against them,⁶⁵ fosters feelings of internalized homonegativity^{66–68} and hinders disclosure of victimization.⁶⁹ Social norms and attitudes also shape these students' vulnerability to sexual violence. For example, bisexual students confront sexual objectification,⁷⁰ pressure to “prove” their sexuality,⁷¹ and cultural narratives of hypersexuality.⁷⁰ These experiences are compounded by potential exclusion from both heterosexual and queer communities,^{70,72} which makes care-seeking difficult. Male-identified survivors of sexual violence may be silenced by hypermasculinity norms that are incongruent with narratives of survivors as feminine and defenseless.^{69,73,74} Such barriers are compounded for gay and bisexual male survivors, who face pressures to conform to hegemonic masculine norms.⁷⁵

Relationship level risk factors—Relationship level risk factors described here are summarized in Table 2. Risk factors for sexual violence perpetration at the relationship

level include all male peer affiliation.²⁴ A meta-analysis suggested that males' athletic and fraternity involvement increases risk for sexual violence supportive attitudes and perpetration.⁷⁶ As influenced via peer relationships, perceptions of peer attitudes and behaviors (e.g., peer approval of forced sex, peer sexual aggression, peer pressure for sex) are also associated with perpetration.^{24,36,38,39,77} Longitudinal research shows that as perceptions of peer approval of forced sex and sexual coercion increase, so does likelihood of perpetration, whereas decreases in rape supportive peer norms are associated with a declining trajectory of perpetration.^{38,39} Peer norms have also been manipulated in lab-based experiments, in which men are asked to select a film clip (sexually aggressive or not) to show to a confederate woman whom they believe is another study participant. Men are more likely to choose the sexually aggressive film when they are randomly assigned to first watch another man (a confederate) choose the film clip.⁷⁸ In simulated bystander situations, men randomly assigned to hear male confederates objectifying women are less likely to stop a female confederate's exposure to a sexual video, as compared to men assigned to hear neutral statements about women.⁷⁹ Being in a casual or committed relationship (vs. single) is associated with more sexually aggressive behaviors among college men, particularly for those using alcohol prior to sex.⁸⁰ At the family relationship-level, pre-college factors such as child abuse and exposure to parental violence are risk factors for perpetration.²⁴

Social situations involving drinking peers are important risk factors for perpetration and victimization. In lab studies^{81,82}, intoxication can reduce bystanders' recognition of dangerous situations. In surveys, alcohol consumption is associated with lower likelihood of bystander intervention.^{83,84} Regarding victimization risk, being in a dating relationship confers risk as a large portion of sexual violence occurs with dating partners. For example, a recent study of 361 students found that 35% had experienced sexual violence from a dating partner⁸⁵ and that exposure to deviant peers (e.g., involved in crime) was associated with attempted rapes. Recent research has also identified meeting potential partners via dating apps and having "hook-up" type relationships as risk factors for victimization,^{15,86} with more research needed to understand what factors drive these associations (e.g., are individuals who use dating apps also more likely to perpetrate sexual violence?). Prior victimization is a risk factor for future victimization as well.^{15,35} Related to re-victimization, positive peer norms about hook-ups are associated with re-victimization among college women with prior sexual violence victimization.⁸⁷ Fraternity/sorority involvement is also a relationship-level risk factor for victimization.¹⁵

Community, contextual, and institutional level risk factors—Given that sexual violence reporting rates vary across institutions,⁵⁶ an emerging focus in prevention-related research involves identifying risk factors at the campus and/or community level.^{24,88,89} Such risk factors are typically measured via locations/policies related to alcohol consumption (e.g., drinking settings) that increase risk for sexual violence, individual perceptions of campus climate (e.g., inclusivity), and institutional characteristics (e.g., public vs. private). Research using these proxy-measures for community level factors provide direction for community-level interventions to address risk for sexual violence via policy, environmental changes, or institution-wide practices to change the culture of the campus and/or students' broader community. To begin, although data from the National Crime Victimization

Survey indicate that most incidents of female sexual violence victimization among college students occur at or near their home (38%) or the home of someone they know (29%),¹⁰ campus environments that facilitate high-risk drinking are associated with increased risk. Longitudinal research shows that college men's attendance in high risk drinking settings (bars/parties) is associated with perpetration.⁹⁰ A recent study from two New York campuses found that in cases of incapacitated sexual violence victimization, about half of women had just been at a party with the perpetrator before the event (versus 15.8% for non-incapacitated victimization), and nearly half (46.5%) said the incident occurred in a dorm (fraternity house: 10.5%; off-campus party/bar: 14.9%; other location: 28.9%).⁸⁶ Next, while athletic and Greek life involvement are identified as relationship-level risk factors, particularly because they are associated with attitudes that predict sexual violence perpetration (e.g., hypermasculinity, rape myth acceptance⁷⁶), more research is needed to clarify which types of events and/or features of the environment of these communities (e.g., parties, formal events) affect risk.⁸⁹

Second, while research documents elevated risk among sexual and gender minority students,^{12,56,60,61,91} studies examining community-level factors, such as how campus climates may drive these disparities, are lacking. Studies using proxy-measures of campus inclusivity, namely sexual and gender minority students' perceptions, provide clues to inform campus-level prevention interventions. For example, among students from 478 higher education institutions, perceived inclusivity of sexual and gender minority people on campus was associated with significantly lower odds of sexual violence for these individuals.⁹² Inclusive climates may operate by reducing perpetration against sexual and gender minority students, increasing bystander intervention, or empowering students to use harm reduction strategies.⁹²

Finally, several studies examined institutional characteristics in order to infer community-level factors. One study found that institutional characteristics (public/private, 2-/4-year; metro/non-metro location) were not significantly associated with perpetration rates,³⁴ whereas another found significant differences with a relatively small magnitude (e.g., higher victimization rates at small vs. large, and private vs. public institutions).⁵⁶ Another study found that geographic region is associated with increased risk in some cases (e.g., Midwestern and Southern vs. Northeastern campuses), as was campus size (10,000–20,000 students versus <2,500), while research institutions had lower rates than bachelor's institutions.⁹³ This study also identified several student body features associated with campus sexual violence rates, including higher campus-wide binge drinking rates, lower proportions of heterosexual students and higher proportions of younger students and females, higher number of sexual partners, and greater proportions reporting discrimination.

As most studies examine traditional universities, research is needed to examine community college characteristics (e.g., frequent evening classes, commuter factors such as walking to parking lots). Recent data from seven northeastern U.S. community colleges (N=800 students) suggest concerning rates of sexual violence victimization since enrollment (11% victimized via unwanted sexual contact, coercion, attempted and completed rape; 48% when including sexual harassment, relationship violence, stalking, etc.).⁹⁴ Students who were female, sexual and racial minorities, and under age 26 were more likely to report any

victimization.⁹⁴ These data highlight unique characteristics of community colleges, which may reflect physical environments and/or differences in programs or policies related to sexual violence requiring further study.

Future directions—Table 3 summarizes future directions for research in regarding risk factors for campus sexual violence based on gaps in the above literature. These include: (1) conducting additional longitudinal studies including time-varying risk factors and evaluating victimization and perpetration trajectories for students of all genders; (2) using a developmental lens to examine malleable risk factors (e.g., alcohol consumption, peer norms), that can change during college; and (3) focusing on understudied risk factors at the community and contextual levels (e.g., physical and social/contextual environment), including in community colleges. Understanding community-level factors could inform implementation of effective prevention strategies across levels of the social ecology, particularly for marginalized students. Further, given variations in risk across sexual, gender, and racial/ethnic minority sub-groups, more research is needed to better understand how sexual violence manifests in these marginalized groups to inform prevention. We note that specific racial/ethnic groups should not be presumed to be at higher or lower risk without more consistent evidence. Further, students with disabilities comprise another marginalized population warranting future attention, given research suggesting that individuals with disabilities experience increased risk for sexual violence.^{95,96}

Finally, regarding experimental work, researchers are developing virtual reality paradigms which may allow for more nuanced and realistic responses.^{97,98} The peer studies above demonstrate how constructs under consideration for interventions could be piloted in experimental studies. Some researchers find unexpected, harmful effects with high-risk individuals, hardening their attitudes when presented with messages intended to challenge beliefs about women or masculinity.^{99,100} Thus, using experimental paradigms with updated technology to pilot potential prevention interventions may help identify and avoid unintended negative consequences.

Efficacious and Promising Prevention Programs

A remaining gap in campus sexual violence prevention work involves needing to expand and implement efficacious prevention approaches addressing risk for perpetration and victimization across genders and levels of the social ecology. Few approaches have been rigorously evaluated in college populations (i.e., with well-controlled designs, such as randomized controlled trials [RCTs]) and shown to reduce sexual victimization or perpetration or sexual violence risk factors.^{18,19,22} We highlight key programs below targeting different levels of the social ecology (although some inherently address multiple levels).

Individual level—Few prevention programs focusing on sexual violence by potential perpetrators in college populations have strong evidence of effectiveness in reducing men's perpetration behavior, with two promising exceptions.^{101,102} RealConsent is an interactive, web-based program designed for college-age men to increase prosocial intervening behaviors, change attitudes and normative beliefs about sex, rape, and masculine gender

roles, and increasing knowledge of consent. An RCT found that RealConsent was effective in decreasing sexual violence perpetration and increasing positive bystander behavior over 6 months. Similarly, the group-based Sexual Assault Prevention Program (1.5 hour program, 1 hour booster) which seeks to increase men's empathy about sexual violence, decrease rape myth acceptance, increase consent knowledge, promote bystander intervention, and reduce normative misperceptions holds promise.¹⁰³ In addition to demonstrating efficacy on several risk factors (e.g., exposure to sexual media), relative to a control group, program recipients were less likely to perpetrate sexual violence over 4-months.

Other interventions focus on changing individual-level attitudes and behaviors to reduce the victimization risk¹⁸ by teaching women how to recognize threat and bolstering self-efficacy to use self-defense strategies.^{104–110} Few individual-focused programs demonstrate sustained behavioral outcomes. The Enhanced Assess, Acknowledge, Act (EAAA) Sexual Assault Resistance program¹⁰⁵ is a notable exception that also includes curricula on positive sexuality. Designed for women of all sexual identities, based on feminist and social psychological theory^{111,112} and prior research,^{113–115} EAAA includes four group sessions delivered by female facilitators to: 1) decrease the time needed to assess a situation as dangerous and take action, 2) reduce emotional obstacles to taking the action necessary to get away, and 3) maximize use of verbal and physical self-defense tactics most likely to be effective. The program script asserts that perpetrators are entirely responsible for their behavior. After pilot studies showed promise,^{116–118} a multi-site RCT¹⁰⁶ showed that EAAA increased women's perception of their risk of acquaintance rape, knowledge, self-efficacy, and willingness to use self-defense strategies in hypothetical situations. EAAA also reduced the relative risk of attempted and completed rape (non-consensual oral, vaginal, or anal penetration) by 50% in the year following participation, as well as non-penetrative sexual violence. Program benefits persisted at least two years later.¹⁰⁷ Despite concern that programs for women may inadvertently increase perceptions of women's responsibility for sexual violence,¹¹⁹ participation in EAAA led to sustained decreases in rape myth acceptance and beliefs in female provocation or responsibility for rape.¹⁰⁷ The program worked both for rape survivors and women with no prior rape experience, and decreased self-blame if women were raped after EAAA.¹²⁰ A multi-site implementation study of EAAA is underway in Canada.

As called for in a recent review,¹⁶ comprehensive prevention strategies should target multiple settings and risk factors,¹²¹ with campus healthcare settings being important locations (e.g., health centers, counseling centers, Emergency Departments), potentially due to the medical and mental health consequences of sexual violence.^{14–16,122,123} Therefore, we highlight ongoing work using a cluster RCT testing a brief trauma-informed, harm reduction intervention to reduce risk for alcohol-related sexual violence among male and female students receiving care from 28 college health centers.¹²⁴ The Giving Information for Trauma Support and Safety (GIFTS) intervention is being compared to a brief alcohol risk reduction counseling intervention. GIFTS uses a palm-size safety card with information about sexual violence and provides: (a) education and assessment regarding sexual violence (regardless of disclosure); (b) discussion of harm reduction behaviors to reduce risk of alcohol-related sexual violence for self and peers (including bystander intervention); and (c) supported referrals to survivor services. GIFTS builds on a growing evidence-base

demonstrating effectiveness of survivor-centered clinic-based interventions in increasing recognition of abusive behaviors, knowledge of resources, and self-efficacy to enact harm reduction strategies, and among specific populations, reducing physical, sexual, and cyber relationship abuse victimization and reproductive coercion.^{125–127} Although primarily targeted at the individual level as primary prevention, GIFTS is also intended to amplify campus prevention efforts by encouraging students who have witnessed sexual violence, to be more likely to intervene to interrupt a peer’s harmful behaviors and to provide support to peers who have been harmed. As secondary prevention, students with prior sexual violence exposure receiving GIFTS are expected to be more likely to disclose sexual violence during their clinic visit and report greater use of sexual violence-related services.¹²⁴

Relationship level—Bystander training addresses the relationship level of the social ecology by training individuals to intervene with others when they witness sexual violence or behaviors that increase sexual violence risk, such as use of sexist or objectifying language, endorsement of violence-supportive attitudes, or violence risk behaviors (e.g., heavy alcohol use). Engaged bystander programs seek to decrease sexual violence acceptance and build skills to increase bystander actions that can reduce sexual violence. As such, when well-implemented across a community (i.e., college campus), bystander programs can change perceived social norms around violence and encourage both men and women to take action to prevent it. The Campus SaVE legislation required training on college campuses that teaches “safe and positive bystander intervention that may be carried out by an individual to prevent harm or intervene” when there is a risk of violence.¹²⁸ A number of bystander programs have focused on men and women (e.g., Green Dot,^{129–131} Bringing in the Bystander,^{132–134} Know Your Power¹³⁵), while others use sex-specific training [e.g., the Men’s Program^{136–138} and Women’s Program^{139,140}].²¹ Rigorously evaluated and effective bystander programs for colleges include Bringing in the Bystander^{132,134,141} and Green Dot^{129–131}; we specifically highlight Green Dot below, as it was presented in our prevention Summit.

The Green Dot program for colleges and high schools includes two phases: 1) a 50-minute motivational speech including definitions of sexual violence, its frequency, risk factors, and opportunities for prevention and intervention, designed for delivery to all students at a campus; and, 2) an intensive, interactive skill development bystander training, ideally delivered in groups of 20–25 over 4–6 hours using a Peer Opinion Leaders strategy (e.g., training by those whom others emulate or respect). For college students, Green Dot significantly reduced sexual violence acceptance and increased active bystander behaviors relative to those who did not receive Green Dot.¹²⁹ One college campus using Green Dot, relative to two with no bystander program, had significantly lower rates of sexual violence accounted for by a reduction in alcohol- or drug-facilitated sexual violence.¹³¹ Similarly, over 4 years, rates of sexual violence were 25% lower in the Green Dot campus versus the two with no bystander program¹³¹; this was primarily accounted for by reduced alcohol- and drug-facilitated sexual violence. This program also reduced sexual harassment, stalking, and psychological dating violence victimization and perpetration.^{130,131}

Community level—To date, no community-level interventions for campus sexual violence have been rigorously tested. A review¹⁸ of over 140 sexual violence prevention programs (not restricted to college campuses) found that very few (<10%) addressed campus climate or policies. A study¹⁴² of 24 four-year colleges in Georgia, found that only 14% had policies and practices that met compliance criteria for the Clery Act in 2014. Policies varied widely across institutions, despite increased public attention and federal guidance surrounding campus sexual violence after a 2011 Dear Colleague letter from the Department of Education.

Future Directions—Table 3 summarizes future directions for research on prevention interventions, based on gaps in the literature above. More research is needed to continue identifying effective primary prevention programming for campus sexual violence. Although bystander programs are effective at changing bystander attitudes and behaviors,^{129,132,134} bystanders are present in few situations where sexual violence directly occurs (no more than 17%).¹⁴³ Combining bystander programs with programs helping students build knowledge and skills to intervene on their own behalf is warranted.^{144–147} Similarly, programs targeting high-risk groups that address norms related to masculinity and sexual aggression in addition to bystander training may be suitable for college settings. For example, the coach-delivered Coaching Boys Into Men program for male athletes, was efficacious among middle school students in increasing bystander behaviors and decreasing relationship violence among those with a history of dating. In addition to potentially adapting such programs for college campus delivery, there is a need to examine whether the effects of this and other early prevention programs persist into the college years.¹⁴⁸ Next, implementation research that seeks to implement and identify essential elements of efficacious programs (e.g., using dismantling designs¹⁴⁹) and optimal program dose, across specific settings (e.g., dorms, online, classroom; community colleges, commuter or residential schools) and populations, would be an important contribution. Conducting cost-effectiveness analyses of efficacious programs can help ensure that prevention resources are well-utilized, and can assist communities in making informed implementation decisions. Collecting cost-related data during an evaluation can permit such analyses with limited need for additional resources. Finally, research identifying optimal implementation and dissemination strategies for efficacious programs is needed. Although a challenging task, evaluating comprehensive prevention strategies that include combining evidenced-based programming with broader initiatives to improve campus climate for marginalized students (e.g., programs that enhance inclusivity for sexual and gender minorities such as those targeting micro-aggressions, tailored prevention services for minority students at higher risk), could move the field forward.

As a limitation of the field, prior interventions often focused on men's perpetration of sexual violence toward (presumably heterosexual) women, with future studies needed to enhance prevention for gender and sexual minorities. Moreover, research is needed regarding male victims of sexual violence who often have few resources and potentially more stigma (e.g. rape myths around male victims), and female perpetrators of sexual violence who are rarely studied (e.g., risk factors, motivations).^{35,150–152} This gap could be addressed by qualitative work to better understand and broaden our understanding of gendered risk

factors. Programming that better accounts for gendered risk factors is also needed, as gender-neutral programs may not sufficiently address well-established risk factors associated with traditional masculinity.^{24,36} Further, given the variation in risk for sexual violence victimization for marginalized students, existing data can be used for sub-group analyses to inform tailoring programs for specific student populations. Few existing interventions are designed for marginalized populations specifically,¹⁸ yet programs may be more effective when tailored to cultural beliefs and norms.^{153,154}

Finally, prior prevention programs generally fall within inner levels of the social ecology—addressing individual and relationship risk factors—with little known about what works at the community level. Individual-level efforts must be accompanied by universal, campus-wide efforts in partnership with the local community to make the college experience safer for all students, including vulnerable populations by addressing institutional and structural factors (e.g., racism, homophobia) that enhance risk. Alcohol policies on and off-campus can help mitigate sexual violence for students.^{31,155} Engaging alcohol outlets by providing bystander training for bar staff has improved their positive bystander intentions and could benefit from research examining long-term outcomes.¹⁵⁶ Campus efforts to support equity across genders and marginalized identities via increasing representation amongst faculty and leadership can promote an inclusive campus culture.³¹ Investing in programs (e.g. SafeZone¹⁵⁷) for sexual and gender minority students, and bolstering campus enforcement of sexual violence and anti-discrimination policies to be responsive to the lived experiences of sexual and gender minority students and other marginalized students, could be an important part of community-level interventions. Finally, it is noteworthy that an efficacious building-level program for middle school students that involved hot-spot mapping and intervention, *Shifting Boundaries*,¹⁵⁸ is currently being adapted for college campuses and could yield promising results.

Summary and Directions for Future Research

There is broad agreement that a comprehensive approach is necessary to prevent campus sexual violence.^{31,121,159,160} Such an approach should address multiple goals including: changing societal attitudes regarding the continuum of behaviors that comprise sexual violence,^{161,162} developing programs, policies, or other prevention approaches to stop perpetration and hold perpetrators accountable,¹⁸ empowering potential victims with knowledge and skills to act on their own behalf to defend their sexual rights,^{105,107} and facilitating the empowerment of bystanders to disrupt harmful social norms, intervene on others' behalf, and support survivors.^{130,132,134} Existing efforts have not fully mitigated the problem^{163,164} with consistent rates of sexual violence for decades^{9,165} and recent data documenting the high economic cost of sexual violence (over \$122,000 lifetime cost per rape victim; \$3.1 for all victims¹⁶⁶).

To build a comprehensive, efficacious approach, key gaps must be addressed with support for additional research. First, although substantial progress has been made to identify risk factors for sexual violence perpetration and victimization,^{18,24} data on protective factors are generally lacking.²⁴ Protective factors include characteristics of the individual, their experiences, their relationships, or their environment that can reduce violence or buffer

the effects of risk factors. Research identifying modifiable characteristics of the campus culture, environment, policies, or practices that are associated with lower levels of sexual violence is needed, and would improve the ability of colleges and universities to create environments that buffer risk, supporting the development of comprehensive strategies that address external spheres of the social ecology. Although we focus on college campus interventions, it is important to note that risk and protective factors are often established prior to college, and prevention efforts are needed before college entry across levels (e.g., schools, cultural norms, policy) and for the general community.

Second, few studies have examined risk factors or interventions that cut across levels social ecology, with examination of community-level factors and prevention approaches being particularly needed. For example, a CDC systematic review of sexual violence perpetration risk factors in the general population²⁴ identified 42 individual-level risk factors, 23 relationship-level factors, and only 2 societal/community-level factors. In a parallel manner, few studies have tested the efficacy of multi-component interventions across levels, with additional research needed.^{18,167} The social ecological framework can be helpful in conceptualizing the problem of sexual violence and targeting prevention, while also considering that factors can interact across levels. Further, programs for both perpetration and victimization prevention that work across levels of the social ecology can be tailored to cultural considerations that may affect one's risk of perpetrating sexual violence or being a victim, while also considering the different contexts in which sexual violence occurs (e.g., partnered relationships, among acquaintances, in and out of the party scene). Consistent with White House Task Force recommendations,¹⁶⁸ the CDC's STOP SV: A Technical Package to Prevent Sexual Violence³¹ supported primary prevention programs that address different levels of social ecology by fostering healthy relationship skills, social norms that protect against violence, and protective environments as recommended best practices. STOP SV supports the idea that practitioners and communities may work together to identify the approaches best suited for local contexts.

Next, the majority of research focused on campus sexual violence focuses on the context of a male perpetrator and a female survivor, likely due to its high frequency. Conceptual models of perpetration and victimization may need to be expanded to fully incorporate the range of perpetrator-victim relationships. Additional support is needed for future research to increase representation of diverse students in efforts to inform adaptations of evidence-based programs that will be effective for reducing victimization among higher risk marginalized groups (e.g., sexual and gender minorities, students with disabilities, Black, Hispanic/Latino Students, and American Indian/Alaska Native students) with potential use of hybrid implementation-effectiveness designs¹⁶⁹ to more rapidly impact sexual violence rates. Although research findings are mixed regarding the impact of institutional characteristics on perpetration and victimization rates,³⁴ understudied institutional features or norms may differentially connote risk, particularly for marginalized individuals and men and women separately, and based on type of college setting, with community and commuter colleges being particularly under-represented.

In summary, we assert that comprehensive prevention from a public health perspective involves a set of coordinated multi-component strategies that address risk and protective

factors across the social ecology, that complement and reinforce each other with consistent messaging from multiple sources across multiple contexts, including addressing the diverse student population (e.g., racial/ethnic, sexual and gender minorities, those with disabilities, those at community colleges and/or commuter schools).^{18,88} Such strategies address risk characteristics of the individual and their relationships — which is typical in campus prevention efforts¹⁹ — but also include community-level programs and structural/societal-level policies (e.g., Campus SaVE Act¹²⁸) that attempt to modify students' physical and social environment. To build multi-level strategies aimed at transforming the current campus climate, we need a strong evidence base of risk and protective factors and effective strategies at all levels. In addition to the framework provided by the CDC technical package STOP SV: A Technical Package to Prevent Sexual Violence,³¹ the CDC guide Sexual Violence on Campus: Strategies for Prevention³² and the National Collegiate Athletic Association toolkit³³ may be helpful to colleges and universities working to improve campus sexual violence prevention efforts.

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References

1. Basile KC, Smith SG, Breiding MJ, Black MC, Mahendra R. Sexual Violence Surveillance: Uniform Definitions and Recommended Data Elements, Version 2.0. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention; 2014. Available at: https://www.cdc.gov/violenceprevention/pdf/sv_surveillance_definitions-2009-a.pdf. Accessed September 9, 2019.
2. Fedina L, Holmes JL, Backes BL. Campus sexual assault: A systematic review of prevalence research from 2000 to 2015. *Trauma, Violence, & Abuse*. 2018;19(1):76–93.
3. Moylan CA, Hatfield C, Randall J. Campus sexual assault climate surveys: A brief exploration of publicly available reports. *J Am Coll Health*. 2018;66(6):445–449. [PubMed: 29405891]
4. Forsman RL. Prevalence of sexual assault victimization among college men, aged 18–24: A review. *Journal of evidence-informed social work*. 2017;14(6):421–432. [PubMed: 28895801]
5. Anderson RE, Silver KE, Ciampaglia AM, Vitale AM, Delahanty DL. The frequency of sexual perpetration in college men: a systematic review of reported prevalence rates from 2000 to 2017 [published online ahead of print, July 11, 2019]. *Trauma, Violence, Abuse*. 2019.
6. Stoner JE, Cramer RJ. Sexual violence victimization among college females: A systematic review of rates, barriers, and facilitators of health service utilization on campus. *Trauma, Violence, & Abuse*. 2019;20(4):520–533.

7. Halstead V, Williams JR, Gonzalez-Guarda R. Sexual violence in the college population: A systematic review of disclosure and campus resources and services. *J Clin Nurs*. 2017;26(15–16):2137–2153. [PubMed: 28102917]
8. Rosenberg M, Townes A, Taylor S, Luetke M, Herbenick D. Quantifying the magnitude and potential influence of missing data in campus sexual assault surveys: A systematic review of surveys, 2010–2016. *J Am Coll Health*. 2019;67(1):42–50. [PubMed: 29652629]
9. Koss MP, Gidycz CA, Wisniewski N. The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. *J Consult Clin Psychol*. 1987;55(2):162–170. [PubMed: 3494755]
10. Langton L, Sinozich S. Rape and sexual assault among college-age females, 1995–2013. Washington, D.C.: Bureau of Justice Statistics;2014. Available at: <https://www.bjs.gov/content/pub/pdf/rsavcaf9513.pdf>. Accessed September 9, 2019.
11. Smith SG, Zhang X, Basile KC, et al. The National Intimate Partner and Sexual Violence Survey: 2015 data brief—updated release. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. 2018. Available at: <https://www.cdc.gov/violenceprevention/pdf/2015data-brief508.pdf>. Accessed September 9, 2019.
12. Mellins CA, Walsh K, Sarvet AL, et al. Sexual assault incidents among college undergraduates: Prevalence and factors associated with risk. *PLoS One*. 2017;12(11):e0186471.
13. Zinzow HM, Thompson M. Factors associated with use of verbally coercive, incapacitated, and forcible sexual assault tactics in a longitudinal study of college men. *Aggressive behavior*. 2015;41(1):34–43. [PubMed: 27539872]
14. Banyard VL, Demers JM, Cohn ES, et al. Academic correlates of unwanted sexual contact, intercourse, stalking, and intimate partner violence: an understudied but important consequence for college students [published online ahead of print, June 21, 2017]. *J Interpers Violence*. 2017.
15. Herres J, Wang SB, Bobchin K, Draper J. A socioecological model of risk associated with campus sexual assault in a representative sample of liberal arts college students [published online ahead of print, July 10, 2018]. *J Interpers Violence*. 2018.
16. Carey KB, Norris AL, Durney SE, Shepardson RL, Carey MP. Mental health consequences of sexual assault among first-year college women. *J Am Coll Health*. 2018;66(6):480–486. [PubMed: 29405862]
17. Center for Disease Control and Prevention. The social-ecological model: A framework for violence prevention. Atlanta, GA: Centers for Disease Control and Prevention;2002. Available at: https://www.cdc.gov/ViolencePrevention/pdf/SEM_Framework-a.pdf. Accessed July 22, 2019.
18. DeGue S, Valle LA, Holt MK, Massetti GM, Matjasko JL, Tharp AT. A systematic review of primary prevention strategies for sexual violence perpetration. *Aggress Violent Behav*. 2014;19(4):346–362. [PubMed: 29606897]
19. Jouriles EN, Krauss A, Vu NL, Banyard VL, McDonald R. Bystander programs addressing sexual violence on college campuses: a systematic review and meta-analysis of program outcomes and delivery methods. *J Am Coll Health*. 2018;66(6):457–466. [PubMed: 29405865]
20. Kettrey HH, Marx RA. The effects of bystander programs on the prevention of sexual assault across the college years: A systematic review and meta-analysis. *J Youth Adolesc*. 2019;48(2):212–227. [PubMed: 30264210]
21. Mujal GN, Taylor ME, Fry JL, Gochez-Kerr TH, Weaver NL. A systematic review of bystander interventions for the prevention of sexual violence [published online ahead of print, June 16, 2019]. *Trauma, Violence, & Abuse*. 2019.
22. Vladutiu CJ, Martin SL, Macy RJ. College-or university-based sexual assault prevention programs: A review of program outcomes, characteristics, and recommendations. *Trauma, Violence, & Abuse*. 2011;12(2):67–86.
23. Banyard VL. Improving college campus-based prevention of violence against women: A strategic plan for research built on multipronged practices and policies. *Trauma, Violence, & Abuse*. 2014;15(4):339–351.
24. Tharp AT, DeGue S, Valle LA, Brookmeyer KA, Massetti GM, Matjasko JL. A systematic qualitative review of risk and protective factors for sexual violence perpetration. *Trauma, Violence, & Abuse*. 2013;14(2):133–167.

25. Duval A, Lanning BA, Patterson MS. A systematic review of dating violence risk factors among undergraduate college students [published online ahead of print, June 18, 2018]. *Trauma, Violence, & Abuse*. 2018.
26. Kaukinen C Dating violence among college students: The risk and protective factors. *Trauma, Violence, & Abuse*. 2014;15(4):283–296.
27. Abbey A, Wegner R, Woerner J, Pegram SE, Pierce J. Review of survey and experimental research that examine the relationship between alcohol consumption and men’s sexual aggression perpetration. *Trauma, Violence, & Abuse*. 2014;15(4):265–282.
28. Wright LA, Zounlome NOO, Whiston SC. The effectiveness of male-targeted sexual assault prevention programs: A meta-analysis [published online ahead of print, October 1, 2018]. *Trauma, Violence, & Abuse*. 2018.
29. Streng TK, Kamimura A. Sexual assault prevention and reporting on college campuses in the US: A review of policies and recommendations. *Journal of Education and Practice*. 2015;6(3):65–71.
30. McMahon S, Wood L, Cusano J, Macri LM. Campus sexual assault: Future directions for research. *Sex Abuse*. 2018;31(3):270–295. [PubMed: 29320942]
31. Basile KC, DeGue S, Jones K, et al. STOP SV: A technical package to prevent sexual violence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention;2016. Available at: <https://www.cdc.gov/violenceprevention/pdf/SV-Prevention-Technical-Package.pdf>. Accessed September 9, 2019.
32. Dills J, Fowler D, Payne G. Sexual violence on campus: Strategies for prevention. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention;2016. Available at: <https://www.cdc.gov/violenceprevention/pdf/campusvprevention.pdf>. Accessed September 9, 2019.
33. National Collegiate Athletic Association. Sexual violence prevention: An athletics tool kit for a healthy and safe culture. Indianapolis, IN: Sport Science Institute;2019. Available at: https://ncaaorg.s3.amazonaws.com/ssi/violence/SSI_SexualViolencePreventionToolkit.pdf. Accessed September 9, 2019.
34. Porta CM, Mathiason MA, Lust K, Eisenberg ME. Sexual violence among college students: An examination of individual and institutional level factors associated with perpetration. *J Forensic Nurs*. 2017;13(3):109–117. [PubMed: 28820771]
35. Campbell JC, Sabri B, Budhathoki C, Kaufman MR, Alhusen J, Decker MR. Unwanted sexual acts among university students: Correlates of victimization and perpetration [published online ahead of print, October 6, 2017]. *J Interpers Violence*. 2017.
36. Salazar LF, Swartout KM, Swahn MH, et al. Precollege sexual violence perpetration and associated risk and protective factors among male college freshmen in Georgia. *J Adolesc Health*. 2018;62(3):S51–S57. [PubMed: 29455718]
37. Swartout KM, Swartout AG, Brennan CL, White JW. Trajectories of male sexual aggression from adolescence through college: A latent class growth analysis. *Aggressive behavior*. 2015;41(5):467–477. [PubMed: 25735916]
38. Thompson MP, Swartout KM, Koss M. Trajectories and predictors of sexually aggressive behaviors during emerging adulthood. *Psychol Violence*. 2013;3(3):247–259. [PubMed: 23914305]
39. Thompson MP, Kingree JB, Zinzow H, Swartout K. Time-varying risk factors and sexual aggression perpetration among male college students. *J Adolesc Health*. 2015;57(6):637–642. [PubMed: 26592333]
40. Hudson-Flege MD, Grover HM, Mece MH, Ramos AK, Thompson MP. Empathy as a moderator of sexual violence perpetration risk factors among college men [published online ahead of print, December 20, 2018]. *J Am Coll Health*. 2018.
41. Abbey A, McAuslan P. A longitudinal examination of male college students’ perpetration of sexual assault. *J Consult Clin Psychol*. 2004;72(5):747–756. [PubMed: 15482033]
42. Krebs CP, Lindquist CH, Warner TD, Fisher BS, Martin SL. College women’s experiences with physically forced, alcohol-or other drug-enabled, and drug-facilitated sexual assault before and since entering college. *J Am Coll Health*. 2009;57(6):639–649. [PubMed: 19433402]

43. Griffin MJ, Wardell JD, Read JP. Recent sexual victimization and drinking behavior in newly matriculated college students: a latent growth analysis. *Psychol Addict Behav.* 2013;27(4):966–973. [PubMed: 23528195]
44. Abbey A, Wegner R. Using experimental paradigms to examine alcohol's role in man's sexual aggression: Opportunities and challenges in the selection of proxies. *Violence against women.* 2015;21(8):975–996. [PubMed: 26048214]
45. Davis KC, George WH, Nagayama Hall GC, Parrott DJ, Tharp AT, Stappenbeck CA. Studying sexual aggression: A review of the evolution and validity of laboratory paradigms. *Psychol Violence.* 2014;4(4):462–476. [PubMed: 29675289]
46. Abbey A Alcohol-related sexual assault on college campuses: A continuing problem. In: Kaukinen MH, Powers RA, eds. *Addressing violence against women on college campuses.* Philadelphia, PA: Temple University Press; 2017:78–94.
47. Davis KC. The influence of alcohol expectancies and intoxication on men's aggressive unprotected sexual intentions. *Experimental and Clinical Psychology.* 2010;18(5):418–428.
48. Davis KC, Norris J, George WH, Martell J, Heiman JR. Men's likelihood of sexual aggression: The influence of alcohol, sexual arousal, and violent pornography *Aggressive behavior.* 2006;32(6):581–589.
49. Davis KC, Schraufnagel TJ, Jacques-Tiura AJ, Norris J, George WH, Kiekel PA. Childhood sexual abuse and acute alcohol effects on men's sexual aggression intentions. *Psychol Violence.* 2012;2(2):179–193. [PubMed: 22754720]
50. Gross AM, Bennett T, Sloan L, Marx BP, Juergens J. The impact of alcohol and alcohol expectancies on male perception of female sexual arousal in a date rape analog. *Exp Clin Psychopharmacol.* 2001;9(4):380–388. [PubMed: 11764014]
51. Norris J, Davis KC, George WH, Martell J. Alcohol's direct and indirect effects on men's self-reported sexual aggression likelihood. *Journal of Studies on Alcohol* 2002;63(6):688–695. [PubMed: 12529069]
52. Abbey A, Parkhill MR, Jacques-Tiura AJ, Saenz C. Alcohol's role in men's use of coercion to obtain unprotected sex. *Substance Use & Misuse.* 2009;44(9–10):1329–1348. [PubMed: 19938921]
53. Noel NE, Maisto SA, Johnson JD, Lackson LAJ. The effects of alcohol and cue salience on young men's acceptance of sexual aggression. *Addict Behav.* 2009;43(4):386–394.
54. Patterson Silver Wolf DA, Perkins J, Van Zile-Tamsen C, Butler-Barnes S. Impact of violence and relationship abuse on grades of American Indian/Alaska Native undergraduate college students. *J Interpers Violence.* 2018;33(23):3686–3704. [PubMed: 27021735]
55. Coulter RWS, Mair C, Miller E, Blosnich JR, Matthews DD, McCauley HL. Prevalence of past-year sexual assault victimization among undergraduate students: Exploring differences by and intersections of gender identity, sexual identity, and race/ethnicity. *Prevention Science.* 2017;18(6):726–736. [PubMed: 28210919]
56. Cantor D, Fisher B, Chibnall S, et al. Report on the AAU Campus Climate Survey on Sexual Assault and Sexual Misconduct. Chicago, IL: The Association of American Universities;2017. Available at: <https://www.aau.edu/sites/default/files/AAU-Files/Key-Issues/Campus-Safety/AAU-Campus-Climate-Survey-FINAL-10-20-17.pdf>.
57. Snyder TD, de Brey C, Dillow SA. Digest of Education Statistics 2017 (NCES 2018–070). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education;2019. Available at: <https://nces.ed.gov/pubs2018/2018070.pdf>. Accessed September 9, 2019.
58. Krebs CP, Barrick K, Lindquist CH, Crosby CM, Boyd C, Bogan Y. The sexual assault of undergraduate women at Historically Black Colleges and Universities (HBCUs). *J Interpers Violence.* 2011;26(18):3640–3666. [PubMed: 21602199]
59. Rothman EF, Exner D, Baughman AL. The prevalence of sexual assault against people who identify as gay, lesbian, or bisexual in the United States: a systematic review. *Trauma, Violence, & Abuse.* 2011;12(2):55–66.

60. Martin SL, Fisher BS, Warner R, Krebs CP, Lindquist CH. Women's sexual orientations and their experiences of sexual assault before and during university. *Womens Health Issues*. 2011;21(3):199–205. [PubMed: 21521622]
61. Edwards KM, Sylaska KM, Barry JE, et al. Physical dating violence, sexual violence, and unwanted pursuit victimization: A comparison of incidence rates among sexual-minority and heterosexual college students. *J Interpers Violence*. 2015;30(4):580–600. [PubMed: 24923891]
62. Woodford MR, Han Y, Craig S, Lim C, Matney MM. Discrimination and mental health among sexual minority college students: The type and form of discrimination does matter. *Journal of Gay and Lesbian Mental Health*. 2014;18(2):142–163.
63. Seelman KL. Transgender individuals' access to college housing and bathrooms: Finding from the National Transgender Discrimination Survey. *Journal of Gay and Lesbian Mental Health*. 2014;26(2):186–206.
64. Nadal KL, Issa M, Leon J, Meterko V, Wideman M, Wong Y. Sexual orientation microaggressions: "Death by a Thousand Cuts" for lesbian, gay, and bisexual youth. *Journal of LGBT Youth*. 2011;8(3):234–259.
65. Gordon AR, Meyer IH. Gender nonconformity as a target of prejudice, discrimination, and violence against LGB individuals. *Journal of LGBT Health Research*. 2007;3(3):55–71.
66. Frost DM, Meyer IH. Internalized homophobia and relationship quality among lesbians, gay men, and bisexuals. *J Couns Psychol*. 2009;56(1):97–109. [PubMed: 20047016]
67. Gold SD, Dickstein BD, Marx BP, Lexington JM. Psychological outcomes among lesbian sexual assault survivors: An examination of the roles of internalized homophobia and experiential avoidance. *Psychol Women Q*. 2009;33(1):54–66.
68. Gold SD, Marx BP, Lexington JM. Gay male sexual assault survivors: The relations among internalized homophobia, experiential avoidance, and psychological symptom severity. *Behav Res Ther*. 2007;45(3):549–562. [PubMed: 17258041]
69. Todahl JL, Linville D, Bustin A, Wheeler J, Gau J. Sexual assault support services and community systems: Understanding critical issues and needs in the LGBTQ community. *Violence against women*. 2009;15(8):952–976. [PubMed: 19491287]
70. Chmielewski JF, Yost MR. Psychosocial influences on bisexual women's body image: Negotiating gender and sexuality. *Psychol Women Q*. 2013;37(2):224–241.
71. Boyer CR, Galupo MP. 'Prove it!' same-sex performativity among sexual minority women and men. *Psychology and Sexuality*. 2015;6:357–368.
72. Flanders CE, Dobinson C, Logie C. Young bisexual women's perspectives on the relationship between bisexual stigma, mental health, and sexual health: a qualitative study. *Critical Public Health*. 2017;27(1):75–85.
73. Turchik JA, Edwards KM. Myths about male rape: A literature review. *Psychol Men Masc*. 2012;13(2):211–226.
74. Cahill AJ. Foucault, rape, and the construction of the feminine body. *Hypatia*. 2000;15(1):43–63.
75. Fischgrund BN, Halkitis PN, Carroll RA. Conceptions of hypermasculinity and mental health states in gay and bisexual men. *Psychol Men Masc*. 2012;13(2):123–135.
76. Murnen SK, Kohlman MH. Athletic participation, fraternity membership, and sexual aggression among college men: A meta-analytic review. *Sex Roles*. 2007;57(1–2):145–157.
77. DeKeseredy WS, Schwartz MD. Male Peer Support and Woman Abuse in Postsecondary School Courtship: Suggestions for New Directions in Sociological Research. In: Bergen RK, ed. *Issues in Intimate Violence*. Thousand Oaks, CA: SAGE Publications, Inc.; 1998:83–96.
78. Mitchell D, Angelone DJ, Hirschman R, Lilly RS. Peer modeling and college men's sexually impositional behavior in the laboratory. *The Journal of Sex Research*. 2002;39(4):326–333. [PubMed: 12545416]
79. Leone RM, Parrott DJ, Swartout KM. When is it "manly" to intervene?: Examining the effects of a misogynistic peer norm on bystander intervention for sexual aggression. *Psychol Violence*. 2017;7(2):286–295.
80. Norona JC, Borsari B, Oesterle DW, Orchowski LM. Alcohol use and risk factors for sexual aggression: Differences according to relationship status [published online ahead of print, August 31, 2018]. *J Interpers Violence*. 2018.

81. Ham LS, Wiersma-Mosley JD, Wolkowicz NR, Jozkowski KN, Bridges AJ, Melkonian AJ. Effect of alcohol intoxication on bystander intervention in a vignette depiction of sexual assault. *Journal of studies on alcohol and drugs*. 2019;80(2):252–260. [PubMed: 31014471]
82. Leone RM, Parrott DJ. Acute alcohol intoxication inhibits bystander intervention behavior for sexual aggression among men with high intent to help. *Alcohol Clin Exp Res*. 2019;43(1):170–179. [PubMed: 30500086]
83. Fleming WM, Wiersma-Mosley JD. The role of alcohol consumption patterns and pro-social bystander interventions in contexts of gender violence. *Violence against women*. 2015;21(10):1259–1283. [PubMed: 26175516]
84. Orchowski LM, Berkowitz A, Boggis J, Oesterle D. Bystander intervention among college men: The role of alcohol and correlates of sexual aggression. *J Interpers Violence*. 2016;31(17):2824–2846. [PubMed: 25944836]
85. Hlochhibhoya S, Maness SB, Cheney M, Larson D. Risk factors for sexual violence among college students in dating relationships: an ecological approach [published online ahead of print (March 22, 2019)]. *J Interpers Violence*. 2019:1–25.
86. Gilbert L, Sarvet AL, Wall M, et al. Situational contexts and risk factors associated with incapacitated and nonincapacitated sexual assaults among college women. *J Womens Health*. 2019;28(2):185–193.
87. Norris AL, Carey KB, Shepardson RL, Carey MP. Sexual revictimization in college women: mediational analyses testing hypothesized mechanisms for sexual coercion and sexual assault [published online ahead of print, December 19, 2018] *J Interpers Violence*. 2018.
88. DeGue S, Holt MK, Massetti GM, Matjasko JL, Tharp AT, Valle LA. Looking ahead toward community-level strategies to prevent sexual violence [published online ahead of print, January 12, 2012]. *Journal of Women's Health* 2012;21(1).
89. Moylan CA, Javorka M. Widening the lens: an ecological review of campus sexual assault [published online ahead of print, February 6, 2018]. *Trauma, Violence, & Abuse*. 2018.
90. Testa M, Cleveland MJ. Does alcohol contribute to college men's sexual assault perpetration? Between- and within-person effects over five semesters. *J Stud Alcohol Drugs*. 2017;78(1):5–13. [PubMed: 27936357]
91. Eisenberg ME, Lust K, Mathiason MA, Porta CM. Sexual assault, sexual orientation, and reporting among college students [published online ahead of print, August 21, 2017]. *J Interpers Violence*.
92. Coulter RWS, Rankin SR. College sexual assault and campus climate for sexual and gender minority undergraduate students [published online ahead of print, March 15, 2017]. *J Interpers Violence*. 2017.
93. Moylan CA, Javorka M, Bybee D, Stotzer RL, Carlson M. Campus-Level Variation in the Prevalence of Student Experiences of Sexual Assault and Intimate Partner Violence. *Journal of the Society for Social Work and Research* 2019;10(3):397–421.
94. Howard RM, Potter SJ, Guedj CE, Moynihan MM. Sexual violence victimization among community college students [published online ahead of print, September 26, 2018]. *J Am Coll Health*. 2018.
95. Martin SL, Ray N, Sotres-Alvarez D, et al. Physical and sexual assault of women with disabilities. *Violence against women*. 2006;12(9):823–837. [PubMed: 16905675]
96. Basile KC, Breiding MJ, Smith SG. Disability and risk of recent sexual violence in the United States. *Am J Public Health*. 2016;106(5):928–933. [PubMed: 26890182]
97. Abbey A, Pegram SE, Woerner J, Wegner R. Men's responses to women's sexual refusals: Development and construct validity of a virtual dating simulation of sexual aggression. *Psychol Violence*. 2018;8(1):87–99. [PubMed: 29375925]
98. Jouriles EN, Kleinsasser A, Rosenfield D, McDonald R. Measuring bystander behavior to prevent sexual violence: Moving beyond self reports. *Psychol Violence*. 2016;6(1):73–81.
99. Bosson JK, Parrott DJ, Swan SC, Kuchynka SL, Schramm AT. A dangerous boomerang: Injunctive norms, hostile sexist attitudes, and male-to-female sexual aggression. *Aggressive behavior*. 2015;41(6):580–593. [PubMed: 26174353]
100. Stephens KA, George WH. Rape prevention with college men: Evaluating risk status. *Journal of Interpersonal Violence* 2009;24(6):996–1013. [PubMed: 18591366]

101. Salazar LF, Vivolo-Kantor A, Hardin J, Berkowitz A. A web-based sexual violence bystander intervention for male college students: Randomized controlled trial. *J Med Internet Res*. 2014;16(9):e203.
102. Salazar LF, Vivolo-Kantor A, Schipani-McLaughlin AM. Theoretical mediators of RealConsent: a web-based sexual violence prevention and bystander education program. *Health Educ Behav*. 2019;46(1):79–88. [PubMed: 29996689]
103. Gidycz CA, Orchowski LM, Berkowitz AD. Preventing Sexual Aggression Among College Men: An Evaluation of a Social Norms and Bystander Intervention Program. *Violence against women*. 2011;17(6):720–742. [PubMed: 21571742]
104. Holtzman M, Menning C. A new model for sexual assault protection creation and initial testing of Elemental. *Journal of Applied Social Science*. 2015;9(2):139–155.
105. Senn CY, Eliasziw M, Barata PC, et al. Efficacy of a sexual assault resistance program for university women. *N Engl J Med*. 2015;372(24):2326–2335. [PubMed: 26061837]
106. Senn CY, Eliasziw M, Barata PC, et al. Sexual assault resistance education for university women: study protocol for a randomized controlled trial (SARE trial). *BMC Womens Health*. 2013;13(1):25. [PubMed: 23702221]
107. Senn CY, Eliasziw M, Hobden KL, et al. Secondary and 2-year outcomes of a sexual assault resistance program for university women. *Psychol Women Q* 2017;41(2):147–162. [PubMed: 29503496]
108. Hollander JA. Does self-defense training prevent sexual violence against women? *Violence against women*. 2014;20(3):252–269. [PubMed: 24626766]
109. Gidycz CA, Rich CL, Orchowski L, King C, Miller AK. The evaluation of a sexual assault self-defense and risk-reduction program for college women: A prospective study. *Psychol Women Q*. 2006;30(2):173–186.
110. Orchowski LM, Gidycz CA, Raffle H. Evaluation of a sexual assault risk reduction and self-defense program: A prospective analysis of a revised protocol. *Psychol Women Q* 2008;32(2):204–218.
111. Nurius PS, Norris J. A cognitive ecological model of women's response to male sexual coercion in dating. *J Psychol Human Sex*. 1996;8(1–2):117–139.
112. Nurius PS, Norris J, Young DS, Graham TL, Gaylord J. Interpreting and defensively responding to threat: Examining appraisals and coping with acquaintance sexual aggression. *Violence Vict*. 2000;15(2):187–208. [PubMed: 11108501]
113. Ullman SE. Does offender violence escalate when rape victims fight back? . *J Interpers Violence*. 1998;13(2):179–192.
114. Ullman SE. Review and critique of empirical studies of rape avoidance. *Criminal Justice and Behavior*. 1997;24 (2):177–204.
115. Tark J, Kleck G. Resisting rape: the effects of victim self-protection on rape completion and injury. *Violence against women*. 2014;20(3):270–292. [PubMed: 24686123]
116. Senn CY. An imperfect feminist journey: Reflections on the process to develop an effective sexual assault resistance programme for university women. *Fem Psychol*. 2011;21(1):121–127.
117. Senn CY, Gee SS, Thake J. Emancipatory sexuality education and sexual assault resistance: Does the former enhance the latter? . *Psychol Women Q*. 2011;35(1):72–91.
118. Senn CY, Saunders K, Gee S. Walking the tightrope: Providing sexual assault resistance education for University women without victim blame. In: Arcand S, Damant D, Gravel S, Harper E, eds. *Violences faites aux femmes in the collection: Problemes sociaux et interventions sociales* Quebec City, Quebec: Les Presses de Universite du Quebec; 2008:353–372.
119. Hollander JA. The roots of resistance to women's self-defense. *Violence against women*. 2009;15(5):574–594. [PubMed: 19208918]
120. Senn CY, Hobden KL, Eliasziw M. Effective rape resistance training: Can it reduce self-blame for rape survivors? *American Psychological Association Convention*; 2016; Denver, CO.
121. Orchowski LM, Edwards KM, Hollander JA, Banyard VL, Senn CY, Gidycz CA. Integrating sexual assault resistance, bystander, and men's social norms strategies to prevent sexual violence on college campuses: A call to action [published online ahead of print, September 11, 2018]. *Journal of Trauma, Violence, & Abuse*. 2018.

122. Gilmore AK, Flanagan JC. Acute mental health symptoms among individuals receiving a sexual assault medical forensic exam: the role of previous intimate partner violence victimization [published online ahead of print, February 14, 2019]. *Arch Womens Ment Health*. 2019.
123. Alpert EJ. A just outcome, or 'just' an outcome? Towards trauma-informed and survivor-focused emergency responses to sexual assault. *Emerg Med J*. 2018;35(12):753–754. [PubMed: 30254035]
124. Abebe KZ, Jones KA, Rofey D, et al. A cluster-randomized trial of a college health center-based alcohol and sexual violence intervention (GIFTSS): Design, rationale, and baseline sample. *Contemp Clin Trials*. 2018;65:130–143. [PubMed: 29287667]
125. Miller E, Goldstein S, McCauley HL, et al. A school health center intervention for abusive adolescent relationships: a cluster RCT. *Pediatrics*. 2015;135(1):76–85. [PubMed: 25535265]
126. Miller E, Decker MR, McCauley HL, et al. A family planning clinic partner violence intervention to reduce risk associated with reproductive coercion. *Contraception*. 2011;83(3):274–280. [PubMed: 21310291]
127. Miller E, Tancredi DJ, Decker MR, et al. A family planning clinic-based intervention to address reproductive coercion: a cluster randomized controlled trial. *Contraception*. 2016;94(1):58–67. [PubMed: 26892333]
128. United States Congress. S. 128 — 113th Congress: Campus Sexual Violence Elimination Act. <https://www.govtrack.us/congress/bills/113/s/128>. Published January 24, 2013. Accessed March 24, 2020.
129. Coker AL, Cook-Craig PG, Williams CM, et al. Evaluation of Green Dot: An active bystander intervention to reduce sexual violence on college campuses. *Violence Against Women (Special Issue)*. 2011;17(6):777–796.
130. Coker AL, Fisher BS, Bush HM, et al. Evaluation of the Green Dot bystander intervention to reduce interpersonal violence among college students across three campuses. *Violence against women*. 2015;21(12):1507–1527. [PubMed: 25125493]
131. Coker AL, Bush HM, Fisher BS, et al. Multi-college bystander intervention evaluation for violence prevention. *Am J Prev Med*. 2016;50(3):295–302. [PubMed: 26541099]
132. Moynihan MM, Banyard VL, Cares AC, Potter SJ, Williams LM, Stapleton JG. Encouraging responses in sexual and relationship violence prevention: what program effects remain 1 year later? *J Interpers Violence*. 2015;30(1):110–132. [PubMed: 24850763]
133. Peterson K, Sharps P, Banyard V, et al. An evaluation of two dating violence prevention programs on a college campus. *J Interpers Violence*. 2018;33(23):3630–3655. [PubMed: 26976433]
134. Banyard VL, Moynihan MM, Plante EG. Sexual violence prevention through bystander education: An experimental evaluation. *J Community Psychol*. 2007;35(4):463–481.
135. Potter SJ, Stapleton JG. Bringing in the target audience in bystander social marketing materials for communities: Suggestions for practitioners. *Violence against women*. 2011;17(6):797–812. [PubMed: 21727157]
136. Foubert JD, McEwen MK. An all-male rape prevention peer education program: Decreasing fraternity men's behavioral intent to rape. *Journal of College Student Development*. 1998;39:548–556.
137. Foubert JD. The longitudinal effects of a rape-prevention program on fraternity men's attitudes, behavioral intent, and behavior. *J Am Coll Health*. 2000;48(4):158–163. [PubMed: 10650733]
138. Foubert JD, Godin EE, Tatum JL. In their own words: Sophomore college men describe attitude and behavior changes resulting from a rape prevention program 2 years after their participation. *J Interpers Violence*. 2010;25(12):2237–2257. [PubMed: 20040715]
139. Foubert JD. *The men's and women's programs: Ending rape through peer education*. New York, NY: Routledge: Taylor & Francis Group; 2011.
140. Foubert JD, Langhinrichsen-Rohling J, Brasfield H, Hill B. Effects of a rape awareness program on college women: Increasing bystander efficacy and willingness to intervene. *J Community Psychol*. 2010;38(7):813–827.
141. Cares AC, Banyard VL, Moynihan MM, Williams LM, Potter SJ, Stapleton JG. Changing attitudes about being a bystander to violence: Translating an in-person sexual violence prevention program to a new campus. *Violence against women*. 2015;21(2):165–187. [PubMed: 25540255]

142. Bellis AL, Schipani-McLaughlin AM, Salazar LF, Swartout KM, Swahn MH. Sexual misconduct policies and administrator perceptions among 4-year colleges and universities in Georgia. *J Am Coll Health*. 2018;66(7):570–578. [PubMed: 29405866]
143. Hamby SL, Weber MC, Grych J, Banyard VL. What difference do bystanders make? The association of bystander involvement with victim outcomes in a community sample. *Psychol Violence*. 2016;6(1):91–102.
144. Hollander JA. “I can take care of myself” The impact of self-defense training on women’s lives. *Violence against women*. 2004;10(3):205–235.
145. Hollander JA. The importance of self-defense training for sexual violence prevention. *Fem Psychol*. 2016;26(2):207–226.
146. McCaughey M, Cermele J. Changing the hidden curriculum of campus rape prevention and education: Women’s self-defense as a key protective factor for a public health model of prevention. *Trauma, Violence, and Abuse*. 2017;18(3):287–302.
147. Cahill A Possibilities for resistance. In: *Rethinking Rape*. Ithaca, NY: Cornell University Press; 2001:198–207.
148. Miller E, Jones KA, Ripper L, Paglisotti T, Mulbah P, Abebe KZ. An Athletic Coach-Delivered Middle School Gender Violence Prevention Program: A Cluster Randomized Clinical Trial [published ahead of print, January 13, 2020]. *JAMA pediatrics*. 2020.
149. Papa A, Follette WC. Dismantling studies of psychotherapy. *The Encyclopedia of Clinical Psychology*. 2014:1–6.
150. Hickson FC, Davies PM, Hunt AJ, Weatherburn P, McManus TJ, Coxon AP. Gay men as victims of nonconsensual sex. *Arch Sex Behav*. 1994;23(3):281–294. [PubMed: 8024441]
151. Davies M, Pollard P, Archer J. The influence of victim gender and sexual orientation on judgments of the victim in a depicted stranger rape. *Violence Vict*. 2001;16(6):607. [PubMed: 11863061]
152. Davies M, Rogers P. Perceptions of male victims in depicted sexual assaults: A review of the literature. *Aggress Violent Behav*. 2006;11(4):367–377.
153. Nation M, Crusto C, Wandersman A, et al. What works in prevention: Principles of effective prevention program. *Am Psychol*. 2003;58(6–7):449–456. [PubMed: 12971191]
154. Small SA, Cooney SM, O’Connor C. Evidence-informed program improvement: Using principles of effectiveness to enhance the quality and impact of family-based prevention programs. *Family Relations*. 2009;58(1):1–13.
155. Lippy C, DeGue S. Exploring alcohol policy approaches to prevent sexual violence perpetration. *Trauma, Violence, and Abuse*. 2016;17(1):26–42.
156. Hensell C Arizona Safer Bars Alliance Progress Report 2013. Phoenix, Arizona: Arizona Department of Health Services Bureau of Women’s and Children’s Health;2013. Available at: http://www.azrapeprevention.org/sites/default/files/asba_2013_report.pdf. Accessed July 22, 2019.
157. Finkel MJ, Storaasli RD, Bandele A, Schaefer V. Diversity training in graduate school: An exploratory evaluation of the Safe Zone project. *Professional Psychology: Research and Practice*. 2003;34(5):555–561.
158. Taylor BG, Stein ND, Mumford EA, Woods D. Shifting Boundaries: an experimental evaluation of a dating violence prevention program in middle schools. *Prevention science*. 2013;14(1):64–76. [PubMed: 23076726]
159. Banyard VL, Potter SJ. Envisioning comprehensive sexual assault prevention for college campuses. In: Travis CB, White JW, eds. *APA Handbook of the Psychology of Women*. Vol 2. Washington, D. C. : American Psychological Association; 207:235–251.
160. Lonsway KA, Banyard VL, Berkowitz AD, et al. Rape prevention and risk reduction: Review of the research literature for practitioners. In: *VAWnet: The National Online Resource Center on Violence Against Women 2009*. Available at: https://vawnet.org/sites/default/files/materials/files/2016-09/AR_RapePrevention.pdf. Retrieved May 8, 2019.
161. Kelly L The Continuum of Sexual Violence. In: Hanmer J, Maynard M, eds. *Women, Violence and Social Control*. London, UK: Palgrave Macmillan; 1897:46–60.

162. Kelly L Standing the test of time? Reflections on the concept of the continuum of sexual violence. In: Brown JM, Walklate SL, eds. Handbook on Sexual Violence. London, UK: Routledge; 2012:xvii–xxvi.
163. National Sexual Violence Resource Center. Key findings from “A systemic review of primary prevention strategies for sexual violence perpetration”. 2014. Available at: http://www.nsvrc.org/sites/default/files/publications_nsvrc_guide_key-findings-systematic-review-primary-prevention-strategies.pdf. Accessed September 9, 2019.
164. Breitenbecher KH. Sexual assault on college campuses: Is an ounce of prevention enough? Applied and Preventative Psychology. 2000;9(1):23–52.
165. Fisher BS, Cullen FT, Turner MG. The sexual victimization of college women. Washington, D. C.: National Institute of Justice, Bureau of Justice Statistics;2000. Available at: <https://www.ncjrs.gov/pdffiles1/nij/182369.pdf>. Accessed September 9, 2019.
166. Peterson C, DeGue S, Florence C, Lokey CN. Lifetime economic burden of rape among US adults. Am J Prev Med. 2017;52(6):691–701. [PubMed: 28153649]
167. Community Preventive Services Task Force. Violence Prevention: Primary Prevention Interventions to Reduce Perpetration of Intimate Partner Violence and Sexual Violence Among Youth. Atlanta, Georgia: Centers for Disease Control and Prevention 2018. Available at: <https://www.thecommunityguide.org/findings/violence-primary-prevention-interventions-reduce-perpetration-intimate-partner-violence-sexual-violence-among-youth>. Accessed July 22, 2019.
168. White House Task Force to Protect Students from Sexual Assault. Not Alone: The First Report of the White House Task Force to Protect Students from Sexual Assault Washington, D.C.: The White House;2014. Available at: https://www.nccpsafety.org/assets/files/library/NOT_ALONE_Report.pdf.
169. Curran GM, Bauer MS, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation Hybrid Designs: Combining Elements of Clinical Effectiveness and Implementation Research to Enhance Public Health Impact. Med Care. 2012;50(3):217–226. [PubMed: 22310560]

Table 1.

Summary of individual-level risk factors for sexual violence perpetration and victimization discussed

Risk Factors for Perpetration	Risk Factors for Victimization
•Male sex	•Female sex
•History of perpetration	•Sexual/gender minority status
•Risky sexual behaviors (e.g., multiple sexual partners, impersonal sex), motivation for sex, and exposure to sexual media	•Multiple marginalized identities
•Sexual/violence-related cognitions (e.g., hypermasculinity, hostile beliefs about women, rape myth acceptance, rape supportive beliefs, perceived peer approval of forced sex, need for sexual dominance)	•Lower socioeconomic status
•Excessive alcohol use and other substance misuse	•American Indian/Alaskan Native background (other race/ethnicity data are mixed/nuanced) •Alcohol intoxication

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Table 2.

Summary of relationship-level risk factors for sexual violence perpetration and victimization discussed

Risk Factors for Perpetration	Risk Factors for Victimization
•Experience of child abuse	•History of victimization
•Exposure to parental violence	•Being in a dating relationship
•All male peer affiliation (i.e., athletics, fraternity involvement)	•“Hook-up” relationship factors (e.g., alcohol intoxication)
•Perceptions of rape supportive peer attitudes/behaviors (e.g., approval of forced sex and sexual coercion, sexual aggression, peer pressure for sex)	•Meeting partners on dating websites
•Being in a relationship (casual or committed) as opposed to single, for men and particularly those using alcohol prior to sex	•Association with deviant peers
•Alcohol consumption/intoxication by bystanders	•Fraternity/sorority involvement

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Table 3.

Summary of next steps for future research pertaining to risk factors and interventions

Risk Factors	Interventions
<ul style="list-style-type: none"> •Greater representation of all genders, sexual minority students, racial and ethnic minority students, and students with disabilities 	<ul style="list-style-type: none"> •Target malleable risk factors that may change during college (e.g., alcohol consumption, peer norms) and tailor for sub-group differences
<ul style="list-style-type: none"> •Longitudinal studies to evaluate trajectories of victimization and perpetration, including time-varying risk factors 	<ul style="list-style-type: none"> •Account for gender-related nuances
<ul style="list-style-type: none"> •Greater focus on risk factors at the campus, community, and contextual level, including understanding institutional characteristics 	<ul style="list-style-type: none"> •Identify essential elements of efficacious programs, optimal dose, timing, etc. and examine whether early interventions in the life course alter sexual violence outcomes in college.
<ul style="list-style-type: none"> •Use of virtual reality paradigms to enhance validity in experimental research 	<ul style="list-style-type: none"> •Combine efficacious or promising programs that target different aspects of risk (e.g., bystander training, individual self-defense and awareness training) with climate and community-based approaches to potentially enhance impact
<ul style="list-style-type: none"> •More comprehensive study of protective factors across levels of social ecology 	<ul style="list-style-type: none"> •Identify best implementation and dissemination strategies to encourage adoption and maintenance of efficacious programs •Examine community and campus policies and partnerships aimed at improving climate and reducing risks (e.g., alcohol policies, inclusivity initiatives, environmental modifications) •Conduct analyses of implementation costs and cost-effectiveness