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The Scope of Rape Victimization and Perpetration Among National Samples of College Students Across 30 years

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Abstract

Research Questions: Rape prevention practice and policy have roots in data from 1985. This study uses 2015 national data to project recent prevalence, assesses whether rates now differ from those of 30 years ago, and disaggregates 2015 prevalence into rape of alcohol incapacitated victims, rapes combining both alcohol and physical tactics, and violent rape. **Methods:** Cross-sectional analyses were conducted comparing two national samples. The first was collected in 1984-85 (Koss, Gidycz, & Wisniewski, 1987); the second was collected 30 years later in 2014-2015. Both surveys used in-person administration and measurement by the most current version at the

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time of the Sexual Experiences Survey (SES). Prevalence rates were compared using Bayesian binomial tests. **Results:** In 2015, 33.4% (1 in 3) of women reported experiencing rape or attempted rape and 12.7% of men reported perpetration (1 in 8). Using Jeffreys' label for effect size of the Bayes binomial (1961), both results are "decisively" greater than expected given the 1985 benchmarks of 27.9% for victimization and 7.7% for perpetration. Victimization when incapacitated characterized approximately 75% of incidents in 2015 up from 50% in 1985. Cautions apply as cross-sectional data does not establish causality and the recent data set involved the revised SES. **Conclusions:** Across 30 years, neither containment nor reduction of rape was demonstrated and the increasingly prominent association with alcohol was apparent. Among the men who disclosed raping, 9 of 10 incidents were alcohol-involved. Prevention focus might profitably be directed to constraining alcohol environments and policies that facilitate rape of incapacitated persons and on misconduct responses that are proportional to the harm caused to rape victims, thereby raising the perceived risks of perpetration.

Keywords
Sexual assault, sexual aggression, rape prevalence, alcohol-related rape, sexual violence prevention, college students

Introduction

The national scope of sexual assault victimization and perpetration among U.S. college students was first identified in 1987 (Koss et al., 1987) and is the focus of the book *I Never Called it Rape: The Ms Guide for Recognizing, Surviving and Avoiding Date and Acquaintance Rape* (Warshaw, 1988/1994/Warshaw, 2019). The oft-cited figure that one in four college women have been raped derives from this work. This widely circulated estimate provoked substantial backlash from conservative media personalities and academics who attempted to invalidate the findings (for historical context and analysis, see Rutherford, 2011; 2017). Nevertheless, the one in four statistic has also been widely used for activism and was presented in testimony before the U.S. Senate Committee on the Judiciary to support the first Violence Against Women Act (Violence Against Women Act, 1994), as well as to propel focused effort on campus sexual assault prevention (Basile et al., 2016; CDC, 2014). The statistic merits revisiting. Comparison of national data on the prevalence of both victimization and perpetration adhering as closely as possible to the original methods would capture a snapshot of a 30-year period when rape was the subject of extensive media, scholarly, policy, legislative, community services, and prevention activities that have brought it to the forefront of public attention.

Examples include the passage of VAWA; the establishment of the Rape Prevention Education program at CDC; two sets of guidelines from the U.S. Department of Education altering implementation of Title IX of the Civil Rights Act at institutions of higher education; and the #MeToo movement (e.g., Ali, 2011; Congressional Research Service, 2019; O'Neil et al., 2018; U.S. Department of Education, 2018, Violence Against Women Act, 1994).

In theory, projection of national prevalence trends should be possible through aggregating various datasets, even smaller scale single site studies, and plotting reliable slopes over time based on the assembled large sample. In actuality, calculating meaningful national trends from existing studies is precluded according to recent reviews (Anderson et al., 2019; Fedina et al., 2018; Muehlenhard et al., 2017). Before discussing more detail, the reader is advised that these reviews collect published literature that virtually all address rape from a heteronormative, sex-based binary where women are victims and men are perpetrators; and further confound genital anatomy with gender identity. The fault lies with the research that has been conducted, not insensitivity of the reviewers (for work beginning to move beyond the binary, see Anderson et al., 2020).

Fedina et al. (2018) reviewed 34 independent sexual victimization surveys from the years 2000 to 2015 (N = 84,461 students). They concluded that calculation of average rape prevalence among college women would not be valid due to method variance in the data sources that included: presenting the survey in different contexts (e.g., health or crime); priming response through nonstandard introductions; varying definitions of essential variables (e.g., consent, sex acts, and tactics to compel); adapting non-comparable recall periods; utilizing different modes of administration (e.g., paper and pencil, face-to-face interviews, computer assisted interviews, email and online surveys); focusing on single sites with small, nongeneralizable samples; and reporting data with low rates of participation and high levels of missing data. Table 1 lists the citations for recent meta-analyses and scoping reviews on nonconsensual sexual victimization prevalence together with the names and citations for the most prominent recent national surveys. Compared to the one in four estimates, currently the most disseminated number is one in five (Muehlenhard et al., 2017). The one in four versus one in five estimates give an illusion of reduction not merited by the incomparability of the data as supported by the multiple reviews cited in Table 1.

Perpetration also has been the subject of meta-analyses, of which, the work of Anderson and colleagues is most relevant (Anderson et al., 2019). They reviewed surveys of North American college students from the years 2000 to 2017 to connect with an earlier article examining studies prior to 1999 (Spitzberg, 1999). The database consisted of 78 independent samples (N = 25,524). As with victimization, the majority of studies (78%) measured perpetration with a version the Sexual Experiences Survey (SES, Koss & Oros, 1982; Koss et al., 1987;

Table 1. Select relevant literature of sexual assault measurement since 1987.

Meta-analyses and literature reviews	
Sexual assault surveys of victimization	Fedina et al., 2018; Mellins et al. (2017); Muehlenhard et al., 2017; Rutherford, 2017, 2018
Sexual assault surveys of perpetration	Anderson et al., 2019
Association of alcohol and rape	Abbey et al., 2014; Testa & Livingston, 2018
Rape prevention on campus	DeGue et al., 2014; Lippy & DeGue, 2016; Newlands & O'Donohue, 2016
Rape prevention at the community level	Lippy & DeGue, 2016; Katz & Moore, 2013; DeGue et al., 2014
Recent national surveys of victimization	
National college women sexual victimization study	Fisher et al., 2000
National study of drug-facilitated, incapacitated, and forcible rape	Kilpatrick et al., 2007
Washington Post-Kaiser Family Foundation survey of 4-year colleges	Anderson & Clement, 2015
American Association of Universities campus climate survey	Cantor et al., 2017; readministered in 2019
U.S. Department of Justice campus climate survey	Krebs et al., 2016

Koss et al., 2007). The results statistically examined the impact of methodological differences. The authors concluded that perpetration surveys also resist aggregation and suffer from the same methodological variants as victimization surveys. Although a few national studies of perpetration have been conducted, they do not contribute to the prevalence database. For example, a recent report of a representative national sample of adult men examined the relationship of pornography, impersonal sex, and sexual aggression (Wright et al., 2021). However, the study defined sexual aggression as verbal pressure for sex, and measured this construct by one yes/no question. Furthermore, the researchers did not report prevalence rates. Another study that used the same 2015 database as this article tested an elaborated confluence model that had been earlier fitted in the archival database used in this study (Malamuth et al., 1991; Malamuth et al., 2021). Neither study focused on prevalence nor presented results calculated through standard SES scoring. A meta-analysis by Wright et al. (2016) included both verbal and physically compelled sex, also in adult men, but the study questions were not methodological and the reported findings did not address prevalence. Perpetration was measured in a national study of college

students funded by the U.S. Department of Justice, but the authors concluded in the technical report that their methods were not successful in eliciting perpetration disclosures and the findings have never been published in peer review (Krebs et al., 2016). Thus, it is fair to conclude that no national data on perpetration by college students subsequent to Koss et al. has appeared in the literature since its publication in 1987. The absence of ongoing national estimates of rape perpetration is glaring scientifically and programmatically. Regular gender neutral prevalence surveys of both perpetration and victimization would provide timely data to inform practice and policy, and to track the impact of prevention initiatives at the community level. Prevention programs should have a detectable community level impact over time (DeGue et al., 2014).

This study also examines the intersection of alcohol and sexual assault. Critics' major line of attack in delegitimizing the one in four estimates was the measurement of alcohol-related rape (Rutherford, 2011, 2017). In fact, the wording did leave unaddressed whether the victim was impaired after a person intentionally administered substances and penetrative sex acts occurred. Alcohol consumption co-occurs with consensual sex as well as many rapes. Critics legitimately point out that it is conceivable victims would be surreptitiously given drugs and/or alcohol but not reach the stage where they are incapacitated. In the absence of incapacitation, an incident may be emotionally distressing but not meet legal rape definitions. A comprehensive review of campus and community studies reported a range of 40–75% of victims, perpetrators or both had been drinking prior to rape (Abbey et al., 2014). In their national victimization survey including both community and college students, Kilpatrick et al. (2007) used the following definition of drug and alcohol facilitated rape: "The perpetrator deliberately gives the victim drugs without her permission or tries to get her drunk, and then commits an unwanted sexual act against her involving oral, anal, or vaginal penetration. The victim is passed out or awake but too drunk or high to know what she is doing or to control her behavior" (p. 10). Kilpatrick and his team label as incapacitated rape the same scenario but when the victim has voluntarily imbibed. The authors reported that the prevalence of these two types rape were nine times more frequent among college women than the general population.

The objectives of the current article are to: (a) estimate contemporary national rape victimization and perpetration prevalence, replicating as closely as possible the methods used by Koss and colleagues 30 years ago; (b) statistically compare the magnitude of prevalence estimates at the two time points; and (c) compare the prevalence of forcible versus alcohol-involved victimization and perpetration, including examination of the impact of the revised 2007 SES wording that specifies incapacitation and permits voluntary intoxication.

Methods

This study uses two national survey datasets. The first is data from 6,159 students in 32 U.S. institutions of higher education (IHEs) first published by Koss et al. (1987). The second contains 2,471 students enrolled in 13 IHEs. To create a compelling 30-year interval, the designations 1985 and 2015 label the two datasets even though each required portions of 2 years to complete (1984–1985 and 2015–2016). The 2015 sample was collected as part of a larger project (Lamade et al., 2018). Before delving deeper into methodology, we begin with a statement on gender inclusivity. The SES version used in 1987 was based on a heteronormative model of who is victimized and who perpetrates. The Federal Bureau of Investigation definition of rape at that time limited this crime to female victims. Thus, perpetration was operationalized to query men only about unwanted sex acts they had committed. In addition, the earlier survey linked biological sex and genital anatomy. The 2007 revised SES used to obtain the 2015 data contains more gender inclusive language and was designed to permit all respondents to report both victimization and perpetration independent of gender identity. However, even the 2007 item wording is not ideal when viewed through a contemporary lens. For example, genital anatomy and gender identity remain linked. A design conundrum our team faced was that to meet the study aims of comparing data across time points using as similar methods as possible, non-inclusive methods were retained. An SES 2022 Revision Collaboration is underway and is using input from diverse groups to increase inclusion.

Sample of Institutions

The sample plan for the 32 institutions that participated in 1985 was designed to represent the U.S. Department of Education public data on institutional characteristics and student enrollment demographics. These methods are only briefly reviewed here as they are previously published (Koss, et al., 1987). Homogeneous clusters of institutions were created from which to sample and ultimately to achieve representativeness of the higher education enrollment nationally. Variables that were crossed to delineate the clusters included: (a) location inside or outside of a standard metropolitan statistical area of different sizes (>1,000,000 people, <1,000,000 people, or rural); (b) enrollment above or below the national mean percentage of racial/ethnic minority students; (c) control of the institution by private secular, private religious, or public authority; (d) type of institution, (university, other 4-year college, 2-year junior college, or technical/vocational); (e) total enrollment within three levels (1000-2499 students; 2500-9999 students; >10,000 students); and (f) U.S. Department of Education regions. If an institution declined, it was replaced by another choice from the same cluster of characteristics. A total of 93 institutions were approached to achieve a sample of 32.

The 2015 data collection could not fully replicate the 1985 procedures for institution selection for two reasons. Cost constraints were the first. The 2015 data were obtained as part of larger initiative and the survey was only one component. Thus, the number of institutions visited could not be as large. Change in human subjects' protection guidelines was the second. In 1985, in-person methods were considered anonymous if students checked a box to indicate consent. The 2015 initiative was deemed not to qualify as anonymous. No on-campus IRB liaison was required for the earlier work as it is today in multi-site studies. To accomplish in person data collection, partnering with a local professor at each site was required. This person had to accept responsibility for ethical conduct, submit the IRB application in their own name, and complete required reports on enrollment and study completion. The people who volunteered this significant time commitment were selected by outreach from the authors to other sexual violence researchers at institutions within the clusters used in 1985. The aim was to duplicate as closely as possible the institution types and geographical locations from 1985. The 2015 sample did not revisit the same institutions as 1985.

The 1985 surveys were administered in classes selected randomly from the undergraduate course catalog and booked upon permission of the instructor. This time intensive process was not feasible to expect from volunteer site directors. Therefore, the 2015 survey enlisted student participants using self-selection methods including online systems, flyers, emails, or department-level outreach. The final sample was 13 of the 15 institutions approached for participation. One withdrew and the other did not complete data collection by the deadline. The 2015 sample, although smaller, is proportional (1985—32 institutions yielding approximately 6,500 participants; 2015—13 institutions yielding approximately 2,500 respondents). From this point, procedures were identical: surveys were on paper, participants read a consent form, checked a box if they were willing to participate, and then completed the self-report questionnaire in a group setting with a trained, graduate student proctor of any gender present. Students were separated by at least one desk to maintain their privacy. Proctors read students their rights to terminate without penalty, to skip parts of the survey if they chose, and to ask any questions to clarify their informed participation. The protocol included steps to handle potential untoward effects of participation. A place and time were announced where students could speak with the proctor privately and sheet listing local resources was distributed at the completion of the survey. In both 1985 and 2015 approval was obtained from the IRB of each participating institution and by the IRB of record, which were Kent State University and subsequently University of Arizona (1985 data) and Farleigh Dickinson University (2015 data).

Sample

Table 2 contains institutional and student enrollment characteristics of the research sites in each data set and corresponding national information for the same year. Both national profiles derive from information in the Carnegie Classification of Institutions of Higher Education and additional data available through the National Center for Education Statistics Integrated Post-secondary Education Data System, https://www.nces.ed.gov/ipeds. It is not reasonable to compare the demographics of samples separated by 30 years due to changes in the higher education enrollment in the interim. For this reason, the institutional data that are presented in Table 2 for each sample pairs them with the national statistics for the same year. Institutional, geographic, and student variables for each sample in Table 2 were examined for differences in prevalence rates. In 1985, significantly higher victimization prevalence was found in private colleges and major universities compared to religious colleges. Otherwise, there were no significant institutional differences. Geographically, victimization was higher in the Great Lake and Plains states than in other regions. Perpetration prevalence varied only by region; it was highest among men living in the Southeast and lowest in the Plains states and West (Koss et al., 1987). There were fewer differences in 2015 data. Victimization prevalence differed only between women in rural institutions versus women in metropolitan areas, χ^2 (2, N = 1342) = 6.10, p=.05), where rape rates were higher. There were no other significant differences for either victimization or perpetration prevalence by institutional characteristics or geography.

Both 1985 and 2015 samples revealed variation in victimization prevalence by race/ethnicity. The 1985 data were criticized because the sample was heavily White, but so was the enrollment in all institutions of higher education at the time. The 2015 data were much more diverse. The only notably underrepresented racial/ethnic groups compared to national enrollment statistics were White and Native American/American Indian. The national enrollment of the latter group is 0.8%, which is too low for a stable estimate unless oversampled. In 1985, victimization rates were highest among women who identified as Native American, followed by White, Black, and Hispanic, and lowest among Asian American women (Koss et al., 1987). In 2015, significant ethnic/racial differences were also found in victimization risk, χ^2 (7, N = 1342) = 23.61, $p < .001$). Victimization was highest among multi-racial women. No multi-racial identity option existed in 1985. The order of lessening risk for the other ethnicities in 2015 was the same as in 1985. Disclosure of rape perpetration was more common among Black men in 1985, followed by Hispanic and Asian men. In 2015, there were no statistically significant ethnic/racial differences in the perpetration of rape.

Table 2. Demographic comparisons of with national enrollment statistics at each time point.

Sample Parameter	1985		2015	
	Study Sample	U.S. higher education enrollment	Study Sample	U.S. higher education enrollment
Location				
Not in SMSA	31.0	32.0	5.1	3.0[a]
SMSA < 1,000,000	25.0	21.0	23.6	12.7
SMSA > 1,000,000	44.0	47.0	71.3	84.3
Ethnicity				
White/Caucasian	86.0	82.4	42.0	52.0[b]
Black/African American	6.4	9.6	11.0	15.2
Asian	3.3	2.7	18.4	5.7
Hispanic/Latino	3.3	4.4	15.4	19.8
Hawaiian/Pacific Islander	—[c]	—[c]	0.8	0.4
Native American	0.6	0.7	0.2	0.8
Other	—[c]	—[c]	1.9	—[c]
Multi-racial	—[c]	—[c]	10.1	3.3
Standard federal region				
Region I—New England	12.7	6.3	8.7	5.7[c]
Region II—Mid Atlantic	15.6	19.4	22.2	16.1
Region IV—Southeast	21.9	22.7	8.0	24.6
Region V—Great Lakes	21.9	15.9	7.1	13.8
Region VI—South Central	0	—[c]	6.8	9.7
Region VII—Midwest	9.4	10.2	0	23.3
Region VIII—Rocky Mountain	3.1	2.8	0	3.6
Region IX—California and Southwest	12.5	7.5	40.5	—[d]
Region X—Northwest	9.4	12.1	6.7	24.0
Enrollment (no. Institutions)				
1000–2499	6		0	59.9[e]
2500–9999	10		3	26.4
>10000	16		11	13.7
Governance (no. Institutions)				
Public	23		9	73.9[c]
Private—Secular	7		4	19.1
Private—Religious	2		1	7.0

Note. All results, except where noted, are reported in percentages; SMSA: standard metropolitan statistical area.

[a]National estimates of enrollment by location are from the Integrated Post-secondary Education Data System.

[b]National race/ethnicity estimates are from the Council on Education.

[c]Category not assessed.

[d]Estimates from the Carnegie Classification of Institutions of Higher Education (n.d.).

[e]California was moved from Southwest to Far West since 1985, we therefore combined the percentages from those regions for the 2015 estimate.

Measurement

Rape in this study is defined consistently with federal law: oral, anal, or vaginal penetration, against consent, through force, threat of bodily harm, or when incapacitated, including attempts to rape (FBI, 2019). The SES operationalizes this definition in behaviorally specific terms. The measurement of rape includes wording to establish penetration, without consent, through force or threat of harm, or when the victim is incapacitated. Each data collection used the most current version of the SES at the time. Standard internal consistency and test–retest reliability psychometric data for the 1985 SES are previously published (Koss et al., 1987) as are data for the 2007 revised SES used in 2015 (Johnson et al., 2017). However, many experts discourage reporting internal consistency for behavioral or experiential scales. More readers will be concerned about other measurement issues, such as the extent of similarity between the two SES versions. Table 3 presents item wording side by side for the 1985 and 2007 SES. The format of both sets of items is naming the unwanted sexual act first and then specifying the exploitative tactics that may have been used to compel rape. The primary difference is that in 1985 respondents were asked, "Have you had sexual intercourse when you didn't want to because a man gave you alcohol or drugs?" In 2007, the text was replaced with "by taking advantage of me when I was too drunk or out of it to stop what was happening."

Other questions may be raised about how closely the self-reported rape disclosures on either version comport with written or face-to-face interview narratives. Koss et al., (1987) reported Pearson correlation of .73 between a woman's level of victimization based on self-report and her level of victimization based on responses related to an interviewer several months later. Among rape victims classified on self-report, only two of 68 were judged to have misinterpreted questions or to have given answers that appeared to be false. A more recent study of the SES version used in 2015 carried out by independent evaluators also compared written descriptions with self-report. The authors determined that 79.7% of rape endorsements on the SES reflected true positives and 20.2% represented false positives (Littleton et al., 2019; also see Testa et al., 2004). Discrepancies are least frequent on the rape items. For perpetration, in 1987, Koss and colleagues published a 93% agreement rate between self-disclosure on survey compared to an in-person conversation with a male interviewer.

Statistical Analysis

In 1985, participation rates (98.5%) were very high compared to what is achieved in online surveying today. Participation rates for the 2015 sample cannot be calculated, but its size exceeds the power requirements of the

Table 3. Wording comparison of the 1985 and 2015 sexual experiences survey rape items.

1985	2007
Have you had sexual intercourse when you didn't want to because a man	A man put his penis into my vagina, or someone inserted fingers or objects without my consent by
Threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make you?	Threatening to physically harm me or someone close to me Using force, for example holding me down with their body weight, pinning my arms or having a weapon
(Separate item) Have you had sexual intercourse when you didn't want to because a man gave you alcohol or drugs?	Taking advantage of me when I was too drunk or out of it to stop what was happening
Have you had sex acts (anal or oral intercourse or penetration by objects other than the penis) when you didn't want to because a man	Someone had oral sex with me or made me have oral sex with them without my consent by: (Separate item) A man put his penis or someone inserted fingers or objects into my butt without my consent by
Threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make you?	Threatening to physically harm me or someone close to me Using force, for example holding me down with their body weight, pinning my arms or having a weapon
(Alcohol tactic not asked for these acts)	Taking advantage of me when I was too drunk or out of it to stop what was happening
Have you had a man attempt sexual intercourse (get on top of you, attempt to insert his penis) when you didn't want to by…but intercourse did not occur	Even though it did not happen, someone TRIED to have oral sex with me, or make me have oral sex with them without my consent by Even though it did not happen, a man TRIED to put his penis into my vagina, or someone tried to stick in fingers or objects without my consent by Even though it did not happen, a man TRIED to put his penis into my butt, or someone tried to stick in objects or fingers without my consent by

(continued)

Table 3. (continued)

1985	2007
Threatening or using some degree of force (twisting your arm, holding you down, etc.)	Threatening to physically harm me or someone close to me Using force, for example holding me down with their body weight, pinning my arms or having a weapon
(Separate item) have you had a man attempt sexual intercourse (get on top of you, attempt to insert his penis) when you didn't want to by giving you alcohol or drugs but intercourse did not occur.	Taking advantage of me when I was too drunk or out of it to stop what was happening

design, discussed later. The impact of deviations from the national enrollment for 1985 was previously published (Koss, et al., 1987). Comparisons of weighted and unweighted estimates relative to variance were so small that the subsequent publications and secondary analyses of the 1985 data by other users carried forward with unweighted values. The 2015 results are therefore presented as unweighted estimates. In the 2015 data, only 18 of 2493 participants were excluded due to missing data on sexual experiences. Therefore, no strategies for handling missing data were employed for either data set (e.g., multiple imputation).

Bayesian binomial tests were calculated using JASP version 10.2, with the 1985 rates operationalized as priors. This method tests the probability that the 1985 and 2015 sexual assault risk rates are the same versus the probability that 30-year lagged risk assessments differ. The 1985 data were re-analyzed in 2020 to re-confirm the previously reported prevalence percentages. There were no deviations from published reports. Bayesian binomial tests generate 95% credible intervals (CIs) around the estimated rate in addition to what is known as a Bayes factor (BF). Bayes Factor nomenclature is interpreted as follows: larger values of BF_{10} suggest greater support for the alternative hypothesis (the 1985 and 2015 rates differ) than the null hypothesis (no difference). Jeffreys (1961) provided interpretation guidelines for BF values. A BF greater than 30 provides "very strong" support and a value greater than 100 provides "decisive" support for the hypothesis that the samples differ. The following is a more detailed explanation of BF interpretation because with few exceptions the comparisons to be reported resulted in very large BF estimates. A BF_{10} value <10 indicates support for the null hypothesis (no difference between 1985 and 2015 distributions). In Table 4, most results are extremely large Bayes factors and are expressed as exponents of 10. For example, "2.50×10^7 means moving the decimal to the right seven spaces and corresponds to 25,000,000.

Table 4. Completed rape prevalence percentages comparing 1985 and 2015 data disaggregated by tactics.

	Female Victimization			
	1985 (*N* = 3187)	2015 (*N* = 1342)	2015 95% CI	BF_{10}
Completed rape, excluding attempts	15.8%	23.9%	21.6%–26.3%	2.05×10^{11}
Rape victimization when given alcohol/ incapacitated	4.4%	12.1%	10.4%–13.9%	3.07×10^{26}
Rape victimization involving both force or threats of harm and alcohol	3.5%	5.8%	4.8%–7.3%	203.63
Rape victimization solely by threat of harm or force	8.0%	6.0%	4.8%–7.4%	1.01
	Male perpetration			
	1985 (*N* = 2972)	2015 (*N* =1129)	2015 95% CI	BF_{10}
Completed rape, excluding attempts	4.5%	10.1%	8.5%–12.0%	2.79×10^{12}
Rape perpetration by giving alcohol or exploiting an incapacitated victim	3.1%	5.8%	4.6%–7.3%	2197
Rape perpetration involving both force or threats of harm and alcohol	0.9%	3.2%	2.4%–4.5%	2.50×10^{7}
Rape perpetration solely by threat of harm or force	0.6%	1.1%[a]	.06%–1.9%	113

BF10: Bayes Factor.

All tests were non-directional to anticipate that difference over 30 years could be increasing, null, or decreasing. A series of Monte Carlo simulations in R v.3.6.3, adapting syntax suggested by Reich (2018), determined power to detect credible effects using Bayesian binomial tests. Results of these

simulations suggest both the 2015 victimization ($N = 1342$) and perpetration ($N = 1129$) datasets provided adequate power (>.80) to detect effects as small as an 8.7% difference in 2015 rates compared with the 1985 benchmark rate [i.e., $|(P_{2015}-P_{1985})/P_{1985}|$). This 8.7% effect size refers to the relative change in prevalence or proportion. For example, the difference between 15.0% and 16.3% is 8.7% [16.3%–15.0%)/15.0% = 8.7%]. Thus, we had adequate power to detect the difference between 15.0% and 16.3%, which is a relatively small difference

Results

Based on data collected in 1985, Koss et al. (1987) estimated that 27.5% of college women experienced an FBI-defined rape between the time they turned 14 years old and their point of assessment during college. This figure is often referred to as total rape, and is comprised of both completed and attempted incidents. The 2015 data suggest a total rape prevalence of 33.4% (95% CI = 30.9%–36.0%). The 2015 rate is decisively higher compared to what would be expected based on the 1985 benchmark as tested by the Bayes Factor and using Jeffry's suggested nomenclature for effect size (Bayes $\text{Factor}_{10} = 2551.6$). The patterns were the same for perpetration. In 1985, 7.7% of college men disclosed perpetrating rape. Compared to this prior value, the 2015 prevalence of 12.7% was decisively higher (Bayes $\text{Factor}_{10} = 4.43 \times 10^5$; 95% CI = 10.9%–14.7%).

Next, focus was placed on completed rape only, excluding attempts. These data are found in Table 4. In 1987, a completed rape victimization prevalence of 15.8% was reported (Koss et al., 1987), whereas the 2015 estimate is notably higher at 23.9% (95% CI = 21.6%–26.3%; Bayes $\text{Factor}_{10} = 2.05 \times 10^{11}$). The perpetration data revealed that 4.6% of college men disclosed perpetrating completed rape in 1985, whereas the 2015 estimate is 10.1% (95% CI = 8.5%–12.0%; Bayes $\text{Factor}_{10} = 1.47 \times 10^{11}$). Table 4 also contains completed rape prevalence percentages disaggregated by the exploitative tactics involved. Among women in 1985, 4.6% reported an unwanted penetrative act "after administration of alcohol or drugs." In 2015, 12.1% of women disclosed rape when "incapacitated and unable to consent or stop what was happening" (95% CI = 10.4%–13.9%; $BF_{10} = 3.07\times10^{26}$), which is a decisive difference. Rates of women who reported experiencing both alcohol-involved and force tactics, whether in the same incident or in separate incidents, were 7.9% in 1985 versus 18.0% in 2015 (CI = 16.0%–20.1%, $BF_{10} = 1.19 \times 10^{29}$), another decisive difference. The patterns were similar for perpetration. In 1985, 4.0% of men reported giving a woman alcohol or drugs to perpetrate completed rape, whereas in 2015 men 9.1% disclosed rape of an incapacitated women (CI = 7.5%–10.9%, $BF_{10} = 3.81 \times 10^{17}$). The remaining form of rape is that based solely on overt physical force or threats of bodily harm without alcohol involvement. These

rates did not differ from 1985 to 2015 for victims (1985 = 8.0%, 2015 = 6.0%) or perpetrators (1985 = 0.6%; 2015 = 1.1%; see Table 4 for BF). The latter comparison is the only one that is flagged for insufficient power due to the low prevalence of college men who reported perpetrating rape by force alone.

These results cannot refute the assertion that 1985 alcohol-involved rape prevalence was inflated because the victim had not imbibed to the point of incapacitation. The alternative interpretation is also viable: that the higher rates in 2015 could reflect that the revised wording is detecting more rape and would also have done so had it been used in the 1985 assessment. We addressed this issue by a follow-up analysis that eliminated respondents who disclosed only alcohol-involved rape. The SES is scored categorically according to the most severe item endorsed, whether or not lower level items are also disclosed. Rape involving force is considered from a scoring perspective as more severe than rape involving alcohol with no force. Eliminating the alcohol-only rapes removes the group most likely to have been affected by the wording change. What remains are respondents who reported completed forcible rape perpetration or victimization that might or might not have also involved drinking. Because of the SES scoring protocol just described, classification into this group hinges on responses to the force items. A respondent without any force tactic endorsement would be scored as alcohol-only and thus is not included in the following rates. Results of these analyses suggest rates of college women who experienced rape by force and potentially also alcohol tactics were slightly lower in the 2015 (18.0%, 95% CI = 16.0%–20.1%) compared with the 1985 data (19.4%; BF_{10} = .06). The proportion of college men who reported perpetrating using force and potentially also alcohol in the 2015 data (5.8%, 95% CI = 4.5%–7.3%) was decisively higher than expected from the 1985 data (2.8%; BF_{10} = 21163).

Discussion

Rape prevalence estimates are presented based on national samples separated by 30 years (1985 and 2015) using the SES for both data collections, administered face-to-face, by paper and pencil self-report. The 2015 data suggest that 1 in 3 college women (33.4%) are victimized by rape including attempts since their 14th birthday, which is typically the first year of high school, compared to the 1985 estimate of 1 in 4 (27.5%). Based on guidelines for interpretation of the Bayes Factor used for the comparisons of time points, this increase is considered decisively statistically significant and thus strong evidence that rape victimization is now higher than 30 years ago. In 1985, the rape perpetration rate was 1 in 19 men. In recent data the estimate is 1 in 8 men; another difference with an effect size supporting increased prevalence based on decisive statistical significance. The results are consistent with an earlier, nearly identical comparison of two national victimization surveys that

were methodologically similar but not longitudinal (Kilpatrick et al., 2007, p. 5). Kilpatrick's group reported no evidence of reduction in the proportion of adult women who were forcibly raped each year over 15 years dating back to 1992 (Kilpatrick et al., 2007). Thus, there is precedent for the present findings that show no reduction in either victimization or perpetration compared to 30 years ago, and in fact support increased prevalence estimates. Recent public health literature indicates that college-age young adults are overall less sexually active now than in the past (e.g., Ueda et al., 2020). In the context of a lowered number of sexual encounters, evidence of increased percentages of exploitative sex that constitutes rape is very concerning.

The 1985 alcohol-involved rape estimate received intense criticism because incapacitation was not specified. We examined whether the wording used to obtain 2015 data elicited more responses than the 1985 approach. The recent rates of alcohol-only rape are much higher. Focusing on rapes that involved both force and alcohol, or force alone, further analyses suggested that phrasing did not make an important difference for women's disclosure of victimization but the revised wording doubled the likelihood of men disclosing perpetration. The contribution of this analysis is that it allows a more nuanced examination of the alternate explanation that the rate of alcohol-involved rape presented as contemporary is increased from 1985 solely due to measurement differences. The prevalence of rape victimization in alcohol-involved rapes tripled when incapacitation was specified (4.6% in 1985; 12.1% in 2015). This pattern was not seen when force tactics were also present. The assertion that what Koss and colleagues labeled as rape was merely plying with alcohol as a seduction strategy is refuted. At both time points, 9 of 10 men disclosing rape perpetration did so in response to the items referencing alcohol. Reliance solely on force to perpetrate rape was low at both time points. In 2007, Kilpatrick and colleagues spotlighted that women's most common rape-risk situation overall is "being taken advantage of by a sexual predator after she has become intoxicated voluntarily" (p. 5). When 75% of rape victimization and 90% of perpetration involves alcohol, there can be no illusion about the inadequacy of contemporary educational policy and environmental management intended to steer youth and emerging adults towards responsible drinking and sexual behavior.

Limitations of the present study not already noted are characteristics of any data collection that involves self-report and sampling strategies that are not reproducible. However, inclusiveness of samples is often-overlooked as a criterion to judge the potential generalizability of a study. Too many articles published in recent years are single site studies from predominately white institutions. No matter how systematic the sampling strategy is, the data represent largely white students. Critics of the 1985 results zeroed in on the high percentage of white students in a supposedly nationally representative sample. Actually, the 1985 college enrollment was primarily white students,

and a representative sample mirrored that disproportion. The 2015 data map onto the far more diverse higher education enrollment today. White students constituted 42% of the 2015 sample versus 52% of higher education enrollment nationally in the same year. As there were no significant correlations of race/ethnicity with perpetration, the under-representation of white students is unlikely to be of concern for perpetration. However, ethnic/racial differences in risk of victimization were found, but white women were not the highest risk racial/ethnic group, not only in the present study but across multiple surveys noted in Table 1. Therefore, it is arguably more important to have a sample with other racial/ethnic groups represented sufficiently to achieve power adequate to detect differences in victimization risk.

The alcohol findings must be interpreted with the cautions that apply to all cross-sectional study designs. The results are not causal statements. Other designs exist that contribute to understanding the role of alcohol in rape including longitudinal, lab-based studies, qualitative analysis, and community-based evaluations. Additionally, sole focus on alcohol is not a comprehensive explanation of rape risk. Other variables at the individual, family, peer, institutional, societal, and environmental level are needed to fully capture the causal nexus.

A contribution of this study to future researchers is that it demonstrates the analyses that are possible when researchers settle on standard definitions and scales for assessing victimization and perpetration. It is the goal of the SES 2022 Revision Collaboration to foster greater buy-in to comparability that will support subsequent aggregation of disparate datasets and permit longitudinal trend projection in the future. Institutions such as the U.S. Department of Justice and the CDC longitudinally track victimization, but these surveys are community-wide. It is unlikely that funds will materialize to track victimization and perpetration among college students except by a boot-strapping aggregation strategy that we as independent researchers must foster.

Despite sustained attention to rape prevention, systematic reviews have labeled presentations to educate students on topics including rape-supportive attitudes, rape myths and consent as mostly ineffective at changing behaviorally measured reports of rape perpetration or victimization (DeGue et al., 2014). Our data are predictable based on this review. The present behaviorally specific data document failure to reduce—and potential growth in—rape victimization and perpetration across a 30-year interval. College women face an even greater risk for victimization than the numbers that raised red flags 30 years ago. Perpetrators are much more likely today to disclose exploitative sexual acts on women who have drunk to excess than previously. Some people believe that the #MeToo and PSAs like "It's On Us" ended the possibility of valid perpetration assessment. We have not seen any convincing evidence of that. Neither the current authors nor those who have reviewed the perpetration literature have found declines in perpetration rates over the past 10 years up to

2017. Our findings however do not support that men in 2015 were more sensitive to what constitutes sexual exploitation, recognized that it is a socially undesirable behavior, and therefore disclosing it should be suppressed. We are not aware of published data collected after 2017 when #MeToo became viral on social media. Our unpublished data do not show evidence of suppressed perpetration disclosure.

Reducing perpetration is key to rape prevention according to systematic reviews (e.g., DeGue et al., 2014). Alcohol use is an ideal candidate for interventions. Conclusions based on comprehensive literature reviews of alcohol use suggest that upstream and community-level interventions are a fruitful use of resources. Lippy and DeGue (2016) review the success in reducing alcohol consumption of multiple environmental level interventions. Public policy such as reducing the density of alcohol outlets permitted by zoning in proximity to campus is effective. These authors also evaluate limitation of drinks to single servings, not pitchers, two for one drink specials, free nights for women, and condoning or conducting drinking games. Policies that institutions could fruitfully pursue include reducing media depictions of drinking in institutional communications, creating guidelines for social groups in the advertising of their events, and disallowing alcohol distributors to align themselves with college athletics in any public manner. Others include party registration and regulations, presence of sober party monitors, and security at gatherings where alcohol use has been permitted. Institutions could also partner with liquor-serving venues surrounding their campuses to increase staff awareness of sexual aggression and to provide training in safe intervention skills.

Students are more likely to appear in conduct offices for drinking violations than for imposition of unwanted sexual acts (Abbey et al., 2014). Psychoeducation is routinely available for student alcohol infractions. The results of the present study add to a large body of literature that persuasively advocates for inclusion of sexual assault content in this curriculum. Another system-level rape prevention methodology that is underutilized is improved accountability for sexual misconduct, which currently is infrequently sanctioned (Abbey et al., 2014). In addition to repair of harm to the victim, perpetrators may benefit from rehabilitation to reduce the likelihood of re-offending (Koss, 2014; Koss & Lopez, 2018; Lamade, et al., 2018). It is unrealistic to expect that perpetrators will desist from strategies that increase the likelihood of obtaining sex (the benefit), until accountability (the cost) of being reported for rape by exploitation of alcohol incapacitation becomes higher than it is currently.

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References

Abbey, A., Wegner, R., Woerner, J., Pegram, S. E., & Pierce, J. (2014). Review of survey and experimental research that examines the relationship between alcohol consumption and men's sexual aggression perpetration. *Trauma Violence Abuse*, *15*, 265-282. https://dx.doi.org/10.1177%2F1524838014521031.

Ali, R. (2011). *Dear colleague letter*. Washington, DC: U.S. Department of Education, Office for Civil Rights.

Anderson, R. E., Silver, K. E., Ciampaglia, A. M., Vitale, A. M., & Delahanty, D. L. (2019). The frequency of sexual perpetration in college men: A systematic review of reported prevalence rates from 2000 to 2017. *Trauma Violence Abuse*, *22*(3), 481-495. DOI: 10.1177/1524838019860619.

Anderson, N., & Clement, S. (2015). 1 in 5 women say they were sexually violated. Washington Post. https://www.washingtonpost.com/sf/local/2015/06/12/1-in-5-women-say-they-were-violated/

Anderson, R. E., Goodman, E. L., & Timm, S. S. (2020). The Assessment of forced penetration: a necessary and further step toward understanding men's sexual victimization and women's perpetration. Journal of Contemporary Criminal Justice, *36*, 480–498. https://doi.org/doi/10.1177/1043986220936108.

Basile, K. C., DeGue, S., Jones, K., Freire, K., Dills, J., Smith, S. G., & Raiford, J. L. (2016). *STOP SV: A technical package to prevent sexual violence*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Cantor, D., Fisher, B., Chibnall, S. H., Townsend, R., Lee, H., Bruce, C., & Thomas, G. (2017). *Report on the AAU campus climate survey on sexual assault and sexual misconduct*. Rockville, MD: Westat. https://www.aau.edu/sites/default/files/AAU-Files/Key-Issues/Campus-Safety/AAU-Campus-Climate-Survey-FINAL-10-20-17.pdf.

Carnegie Classification of Institutions of Higher Education. (n.d.). About carnegie classification. Retrieved April 7, 2020, from http://carnegieclassifications.iu.edu/.

Data also retrievable from the Integrated Postsecondary Education Data System https://nces.ed.gov/ipeds/.

Centers for Disease Control and Prevention (2014). *Preventing sexual violence on college campuses: Lessons from research and practice*. Retrieved October, 2, 2020, https://www.notalone.gov/schools/.

Congressional Research Service (April, 2019). The Violence Against Women Act (VAWA): Historical overview, funding, and reauthorization. Congressional Research Service, R45410. "https://crsreports.congress.gov/"

DeGue, S., Valle, L. A., Holt, M. K., Massetti, G. M., Matjasko, J. L., & Tharp, A. T. (2014). A systematic review of primary prevention strategies for sexual violence perpetration. *Aggression and Violent Behavior*, *19*, 346-362. DOI: 10.1016/j.avb.2014.05.004.

Federal Bureau of Investigation (2019). *Uniform crime reports*. Washington, DC. Retrieved from https://ucr.fbi.gov/crime-in-the-u.s/2019.

Fedina, L., Holmes, J. L., & Backes, B. L. (2018). Campus sexual assault: a systematic review of prevalence research from 2000 to 2015. *Trauma Violence Abuse*, *19*, 76-93. https://doi.org/10.1177%2F1524838016631129.

Fisher, B. S., Cullen, F. T., & Turner, M. G. (2000). *The sexual victimization of college women*. Washington, DC: National Institute of Justice, Bureau of Justice Statistics. https://www.ncjrs.gov/pdffiles1/nij/182369.pdf.

Jeffreys, H. (1961). *The theory of probability*. Oxford, UK: Clarendon.

Johnson, S. M., Murphy, M. J., & Gidycz, C. A. (2017). Reliability and validity of the sexual experiences survey–short forms victimization and perpetration. *Violence and Victims*, *32*, 78-92. DOI: 10.1891/0886-6708.VV-D-15-00110.

Katz, J., & Moore, J. (2013). Bystander education training for campus sexual assault prevention: An initial meta-analysis. *Violence and Victims*, *28*(6), 1054-1067. DOI: 10.1891/0886-6708.vv-d-12-00113

Kilpatrick, D. G., Resnick, H. S., Ruggiero, K. J., Conoscenti, L. M., & McCauley, J. (2007). *Drug-facilitated, incapacitated, and forcible rape: A national study*. SC: National Criminal Justice Reference Service Charleston.

Koss, M. P. (2014). The RESTORE program of restorative justice for sex crimes: vision, process, and outcomes. *Journal of Interpersonal Violence*, *29*(9), 1623-1660. https://doi.org/10.1177%2F0886260513511537.

Koss, M. P., Abbey, A., Campbell, R., Cook, S., Norris, J., Testa, M., & White, J. (2007). Revising the SES: a collaborative process to improve assessment of sexual aggression and victimization. *Psychology of Women Quarterly*, *31*, 357-370. https://doi.org/10.1111%2Fj.1471-6402.2007.00385.x.

Koss, M. P., & Gidycz, C. A. (1985). Sexual experiences survey: reliability and validity. *Journal of Consulting and Clinical Psychology*, *53*, 422-423. https://psycnet.apa.org/doi/10.1037/0022-006X.53.3.422.

Koss, M. P., Gidycz, C. A., & Wisniewski, N. (1987). The scope of rape: incidence and prevalence of sexual aggression and victimization in a national sample of higher

education students. *Journal of Consulting and Clinical Psychology*, *55*(2), 162. https://psycnet.apa.org/doi/10.1037/0022-006X.55.2.162.

Koss, M. P., & Lopez, E. (2018). *Restorative justice for sexual misconduct: Not if but when*. Gender Policy Report. https://genderpolicyreport.umn.edu/restorative-justice-for-sexual-misconduct-not-if-but-when/.

Koss, M. P., & Oros, C. J. (1982). Sexual experiences survey: a research instrument investigating sexual aggression and victimization. *Journal of Consulting and Clinical Psychology*, *50*, 455-457. https://psycnet.apa.org/doi/10.1037/0022-006X.50.3.455.

Krebs, C., Lindquist, C., Berzofsky, M., Shook-Sa, B., Peterson, K., Planty, M., Langton, L., & Strrop, J. (2016). *Campus climate survey validation study final technical report*. https://www.bjs.gov/content/pub/pdf/ccsvsftr.pdf.

Lamade, R. V., Lopez, E., Koss, M. P., Prentky, R., & Brereton, A. (2018). Developing and implementing a treatment intervention for college students found responsible for sexual misconduct. *Journal of Aggression, Conflict and Peace Research*, *10*(1), 134-144. https://doi.org/10.1108/JACPR-06-2017-0301.

Lippy, C., & DeGue, S. (2016). Exploring alcohol policy approaches to prevent sexual violence perpetration. *Trauma, Violence & Abuse*, *17*, 26-42. https://doi.org/10.1177%2F1524838014557291.

Littleton, H., Layh, M., Rudolph, K., & Haney, L. (2019). Evaluation of the Sexual Experiences Survey—Revised as a screening measure for sexual assault victimization among college students. *Psychology of violence*, *9*(5), 555. http://dx.doi.org.ezproxy1.library.arizona.edu/10.1037/vio0000191.

Littleton, H., Layh, M., & Rudolph, L. (2019). Evaluation of the Sexual Experiences Survey—Revised as a screening measure for sexual assault victimization among college students. *Psychology of violence*, *9*(5), 555. http://dx.doi.org.ezproxy1.library.arizona.edu/10.1037/vio0000191

Malamuth, N. M., Lamade, R. V., Koss, M. P., Lopez, E., Seaman, C., & Prentky, R. (2021). Factors predictive of sexual violence: Testing the four pillars of the Confluence Model in a large diverse sample of college men. *Aggressive Behavior*, *47*(4), 405-420.

Malamuth, N. M., Sockloskie, R. J., Koss, M. P., & Tanaka, J. S. (1991). Characteristics of aggressors against women: Testing a model using a national sample of college students. *Journal of Consulting and Clinical Psychology*, *59*, 670-681. DOI: 10.1037//0022-006x.59.5.670.

Mellins, C. A., Walsh, K., Sarvet, A. L., Wall, M., Gilbert, L., & Santelli, J. S., ... & Hirsch, J. S. (2017). Sexual assault incidents among college undergraduates: Prevalence and factors associated with risk. *PLoS one*, *12*(11), e0192129. https://doi.org/e0186471.DOI: 10.1371/journal.pone.0186471.

Muehlenhard, C. L., Peterson, Z. D., Humphreys, T. P., & Jozkowski, K. N. (2017). Evaluating the one-in-five statistic: Women's risk of sexual assault while in college. *The Journal of Sex Research*, *54*(4-5), 549-576. DOI: 10.1080/00224499.2017.1295014.

Newlands, R., & O'Donohue, W. (2016). A critical review of sexual violence prevention on college campuses. *Acta Psychopathologica*, *2*, 2-13.

O'Neil, A., Sojo, V., Fileborn, B., Scovelle, A. J., & Milner, A. (2018). The# MeToo movement: an opportunity in public health? *Lancet*, *391*(10140), 2587-2589. DOI: 10.1016/S0140-6736(18)30991-7.

Pegram, S. E., & Abbey, A. (2019). Associations between sexual assault severity and psychological and physical health outcomes: Similarities and differences among African American and Caucasian survivors. *Journal of Interpersonal Violence*, *34*, 4020-4040.

Reich, B. J. (2018). *Bayesian power calculation. Applied bayesian Analysis*. https://www4.stat.ncsu.edu/~reich/ABA/Code/Power.

Rutherford, A. (2011). Sexual violence against women: Putting rape research in context. *Psychology of Women Quarterly*, *35*(2), 342-347. DOI: 10.1177/0361684311404307.

Rutherford, A. (2017). Surveying rape: Feminist social science and the ontological politics of sexual assault. *History of the Human Sciences*, *30*, 100-123.

Rutherford, A. (September 18, 2018). Acknowledging rape: What the origins of the "1 in 5" statistic can teach us about sexual assault policy. *The Behavioral Scientist.* https://behavioralscientist.org/what-the-origins-of-the-1-in-5-statistic-teaches-us-about-sexual-assault-policy/

Spitzberg, B. H. (1999). An analysis of empirical estimates of sexual aggression victimization and perpetration. *Violence and Victims*, *14*, 241-260. https://psycnet.apa.org/doi/10.1891/0886-6708.14.3.241.

Testa, M., & Livingston, J. A. (2018). Women's alcohol use and risk of sexual victimization: Implications for prevention. In L. Orchowski & C. Gidycz (Eds), *Sexual assault risk reduction and resistance: Theory, research and practice* (pp. 135-172). London, UK: Elsevier.

Testa, M., VanZile-Tamsen, C., Livingston, J. A., & Koss, M. P. (2004). Assessing women's experiences of sexual aggression using the sexual experiences survey: Evidence for validity and implications for research. *Psychology of Women Quarterly*, *28*(3), 256-265. https://doi.org/10.1111%2Fj.1471-6402.2004.00143.x.

Ueda, P., Mercer, C. H., Ghaznavi, C., & Herbenick, D. (2020). Trends in frequency of sexual activity and number of sexual partners among adults aged 18 to 44 years in the US, 2000-2018. *JAMA Network Open*, *3*(6), e203833.

U.S. Department of Education. (2018). *Background & summary of the education department's proposed Title IX regulation*. Washington, D.C: U.S. Department of Education Office of Civil Rights. Retrieved from: https://www2.ed.gov/about/offices/list/ocr/docs/background-summary-proposed-ttle-ix-regulation.pdf.

Violence Against Women Act (1994). Violence Against Women Act of 1994, *P.L.* 103-322, 108 Stat. 1902.

Warshaw, R. (2019/1994/1988). *I never called it rape: The Ms. guide to recognizing, surviving, and fighting date and acquaintance rape*. New York: Harper Collins.

Wright, P. J., Paul, B., & Herbenick, D. (2021). Pornography, impersonal sex, and sexual aggression: A test of the confluence model in a national probability sample of men in the US. *Aggressive Behavior*, *47*, 593-602. https://doi.org/10.1002/ab.21978

Wright, P. J., Tokunaga, R. S., & Kraus, A. (2016). A meta-analysis of pornography consumption and actual acts of sexual aggression in general population studies. *Journal of Comunication*, *66*, 183-205. https://do.org/10.1111/jcom.12201.

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