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## The #MeToo Movement and Perceptions of Sexual Assault: College Students' Recognition of Sexual Assault Experiences Over Time

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### Abstract

**Objective:** On October 15, 2017, Alyssa Milano encouraged anyone who had been sexually harassed or assaulted to respond on Twitter with the phrase, #MeToo. Millions responded and a cultural reckoning ensued. Anecdotally, the #MeToo movement appears to have affected survivors' acceptance and acknowledgment of their own sexual assault experiences, but empirical evidence is lacking. To address this gap, the aim of this study was to examine associations between behavioral and labeled reports of sexual assault and time since the #MeToo movement began.

**Methods:** Participants were 2,566 college students who completed a sexual assault survey over the course of three years, overlapping with the onset of the #MeToo movement.

**Results:** Regarding our hypothesis that the prevalence of sexual assault – indicated by standardized behaviorally specific questions – would be relatively constant over time after controlling for demographics, a Bayesian logistic regression model yielded inconclusive results. However, among the 596 students who endorsed behaviorally specific screeners for sexual assault, a Bayesian linear regression model revealed that, after controlling for demographics and characteristics of the assault, participants were increasingly likely to label the experience a “sexual assault” with more time post #MeToo.

**Conclusions:** Overall, findings revealed no evidence for or against changes in prevalence of sexual assault, but suggested there were associations between the #MeToo movement and greater recognition of past unwanted sexual experiences as “sexual assault” over time. These findings highlight the importance of considering social context in research examining sexual assault survivors' cognitions.

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## Keywords

rape; harassment; trauma; cognitions; labeling

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“A lot of us... all genders... are looking back on past experiences with a new lens now.”

—Jessica Bennett of The New York Times, *Consent*, A  
VICE on HBO Special Report, September 29, 2018

On October 15, 2017, the actress Alyssa Milano tweeted, “If you’ve been sexually harassed or assaulted write ‘me too’ as a reply to this tweet.” With this phrase that Tarana Burke first used in 2006, the Twitter-based #MeToo movement rapidly gained speed against the backdrop of emerging allegations of sexual assault against film producer Harvey Weinstein. Within the first 24 hours, more than 12 million Facebook posts referenced #MeToo, and the #MeToo campaign soon spread across 85 countries with 1.7 million tweets (CBS, 2017). Personal reports of sexual assault and harassment were shared widely through online social networks, while public accounts of famous survivors began to proliferate through the news media. Although this movement was not the first occurrence of “hashtag feminism” (Dixon, 2014; Mendes, Ringrose, & Keller, 2018), some have suggested “its cultural resonance and reach is unparalleled” (Cobb & Horeck, 2018, p. 489). In particular, the #MeToo movement may have increased awareness that sexual assault and harassment are common experiences. In this public form of feminist consciousness-raising (Larabee, 2018; Mendes et al., 2018), men and women may recognize similarities between personal and publicized stories, while viewing individual experiences within a broader structural context. In this way, the #MeToo movement has clear potential to affect survivors’ understanding of sexual assault. Although there are some indications that sexual assault reports on college campuses increased in the year after #MeToo (e.g., Parker, 2017) and online searches for reporting and preventing sexual assault surged (Caputi, Nobles, & Ayers, 2019), the broader impact of #MeToo on college students’ perceptions of (unreported) assault experiences remains unknown. To shed light on how the #MeToo movement affected individuals’ perception of past sexual assaults, we examined college students’ behavioral and labeled reports of sexual assault in a standardized survey administered as part of an ongoing study both pre and post #MeToo.

## Behavioral Definitions of Sexual Assault

Sexual assault is typically defined as unwanted sexual contact, including but not limited to rape. For example, sexual violence is defined by the Centers for Disease Control and Prevention (CDC) 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” (Basile, Smith, Breiding, Black, & Mahendra, 2014, p. 11). Such definitions of rape and sexual assault (including the full CDC definition) typically specify the nature of the sexual acts, the tactics used (e.g., force, substance-related incapacitation), and the lack of consent (Cook, Gidycz, Koss, & Murphy, 2011). Such objective definitions have become standard, following a long research tradition of defining assaultive experiences behaviorally (e.g., Koss, 1985). In turn, assessment measures aligned with these behaviorally-specific definitions are now considered best practice for obtaining objective information about sexual

experiences (Krebs, 2014), and are the standard used for determining national prevalence rates of sexual assault (about 20% for US women; Black et al., 2011; Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007). These surveys assess objective information about experiences without subjective labels (e.g., rape, assault, victim) that may have personal or cultural connotations (e.g., loss of agency; Boyle & Clay-Warner, 2018). Such behaviorally-specific questions might therefore be robust to shifting personal and cultural perceptions of sexual assault, including changes brought on by the #MeToo movement.

## Labeled Experiences of Sexual Assault

Behavioral endorsements of sexual assault often do not match labeled experiences. A recent meta-analysis revealed that 60% of women who report acts consistent with behavioral definitions of rape do not label or acknowledge their experience as “rape” (Wilson & Miller, 2016). Instead, they may call the sexual encounter a “miscommunication” or report they were a victim of another type of crime (Layman, Gidycz, & Lynn, 1996). Although acknowledgment of sexual assault may be challenging, it is an important predictor of outcomes. First, acknowledging an experience as sexual assault or rape is associated with a greater likelihood of disclosing the experience to informal supports such as family and friends, as well as making formal reports to police (Botta & Pingree, 1997). For example, Cleere and Lynn (2013) found that 6.5% of acknowledged rape victims pressed charges, whereas no unacknowledged rape victims in their sample pressed charges. Because many perpetrators of sexual assault are repeat offenders (Jennings, Piquero, Zimring, & Reingle, 2015), acknowledging an experience as rape and then allowing the justice system to intervene may make offenders accountable for their actions and prevent future offenses. Second, survivors who acknowledge a sexual assault are less likely to continue a relationship with the perpetrator than those who do not acknowledge the assault, potentially reducing the risk for their own revictimization (Littleton, Axsom, & Grills-Tauchel, 2009). Third, although research on the mental health consequences of acknowledgment is mixed (e.g., Botta & Pingree, 1997; Kahn & Mathie, 2000; Layman et al., 1996), simply acknowledging an assault occurred can be an important step for accessing health care (Zinzow, Resnick, Barr, Danielson, & Kilpatrick, 2012).

In order to acknowledge an encounter as “sexual assault” or “rape,” one must first recognize an unwanted sexual experience as meeting the definition of assault (Cook et al., 2011). Although standardized yet broad definitions of sexual assault and rape are publicly available (e.g., Basile et al., 2014), informal societal perceptions of what constitutes “rape” have been historically narrow, often focused on a stranger physically forcing a woman to have sex. When one’s personal experience does not match this notion of a typical rape, or *rape script*, that individual may not label the experience a rape (Littleton, Rhatigan, & Axsom, 2007). Consistent with this possibility, assaults involving more threatened or actual physical force are more likely to be labeled a sexual assault or rape (Botta & Pingree, 1997; Cleere & Lynn, 2013; Fisher, Daigle, Cullen, & Turner, 2003; Kahn, Jackson, Kully, Badger, & Halvorsen, 2003; Littleton et al., 2009). On the other hand, assaults involving the use of alcohol are less likely to be labeled a rape (Botta & Pingree, 1997; Layman et al., 1996; for exception, see Fisher et al., 2003).

In addition to the perpetrator's tactics, a past or ongoing relationship with the perpetrator can also complicate efforts to label the assault. In contrast to the traditional script of a stranger rape, most sexual assaults are committed by someone known to the victim (e.g., Black et al., 2011). In cases where there has been a prior consensual sexual experience with the perpetrator, it may be particularly difficult to acknowledge that a previously trusted individual has been assaultive. Indeed, individuals who report more prior intimacy, a previous or current romantic relationship, or a history of consensual intercourse with the perpetrator, are less likely to acknowledge the unwanted experience as a sexual assault or rape (Cleere & Lynn, 2013; Jaffe, Steel, DiLillo, Messman-Moore, & Gratz, 2017; Koss, 1985).

Although acknowledgment of sexual assault may be influenced by traditional rape scripts, predominant cultural understandings of sexual assault and rape may be changing. Through the #MeToo movement, detailed descriptions of unwanted sexual experiences have been publicly shared and labeled as sexual assault. Such actions may prompt shifts in societal scripts to include a broader definition of unwanted, coerced sexual experiences. Alongside this potential widening of scripts for sexual assault, witnessing other individuals openly acknowledge personal sexual assault experiences, combined with supportive responses online (Bogen, Bleiwiss, & Orchowski, 2019), may allow for reduced stigma and self-blame, as well as increased perceptions that victims will be believed. Greater awareness of the prevalence of sexual assault may also embolden individuals to recognize and relabel their own experiences.

Whether individual acknowledgment of an assault is influenced by societal changes, such as the #MeToo movement, is an empirical question that has not yet been tested. Past work points to the potential for acknowledgment status to change. That is, although an individual may not recognize an experience as assaultive at first, persistent distress related to the experience in combination with external influences (e.g., social supports recognizing the experience as rape) may lead to acknowledgment over time (Littleton et al., 2007). Consistent with this notion, victims are less likely to label recent experiences (e.g., past six months to one year) as "rape" than assaults further in the past (Botta & Pingree, 1997; Fisher et al., 2003; Littleton, Axsom, Breitkopf, & Berenson, 2006; Littleton et al., 2009). This work suggests acknowledgment can change over time and might be influenced by external factors. Combined with the potential for societal rape scripts to change, it is plausible that a social movement increasing recognition of a broader definition of sexual assault could impact one's labeling of unwanted sexual experiences.

## Current Study

Although acknowledgment of sexual assault is an important step for accessing care (Zinzow et al., 2012), due to traditionally limited definitions of rape (Littleton et al., 2007), most victims do not label their experiences as "rape" (Wilson & Miller, 2016). The #MeToo movement may allow individuals to recognize broader definitions of sexual assault, thereby increasing the likelihood of acknowledging an unwanted sexual experience as assault. We consider this possibility by examining data collected over a three-year period that overlapped with the initiation of the #MeToo movement. Specifically, we anticipated that behavioral

reports of sexual assault would not be associated with the #MeToo movement (*constant prevalence hypothesis*; Hypothesis 1). However, among those who endorsed behaviorally-specific screeners of sexual assault, we expected participants would be more likely to label their experience a “sexual assault” as the #MeToo movement progressed (*increasing acknowledgment hypothesis*; Hypothesis 2). Given prior work suggesting perpetrator tactics (force, substances, coercion) and a history of consent with the perpetrator are associated with rape acknowledgment (e.g., Cleere & Lynn, 2013), we expected acknowledgment to be greater for sexual assaults involving more severe tactics and no history of prior consensual sex with the perpetrator (Hypothesis 3), and these assault characteristics were included as covariates when examining labeled experiences. Additionally, because the #MeToo movement has been criticized as focusing on experiences of cisgender White women to the exclusion of men, sexual and gender minorities, and racial or ethnic minorities (Hemmings, 2018), we controlled for gender, sexual/gender minority status, and race/ethnicity in all hypothesis tests. Although no specific hypotheses were made for race, we expected that women and sexual/gender minorities would be most likely to report behavioral and labeled experiences of sexual assault (Hypothesis 4).

## Method

### Participants

Participants were 2,566 undergraduate students from 19 to 55 years of age ( $M = 20.47$ ,  $SD = 2.50$ ) who were recruited from a Midwestern US university. All participants consented to participate in a larger web-based study and completed (or stopped interacting with) the survey within 24 hours of opening the survey link. Approximately 41.6% ( $n = 1,068$ ) completed the study before October 15, 2017, with the remaining 58.4% ( $n = 1,498$ ) completing their survey on or after the beginning of the #MeToo movement. Regarding gender identity, 71.9% ( $n = 1,845$ ) were female, 27.2% ( $n = 699$ ) were male, 0.4% ( $n = 9$ ) were gender-queer/gender-fluid, 0.1% ( $n = 3$ ) were transgender women, 0.1% ( $n = 3$ ) were transgender men, and 0.3% ( $n = 7$ ) declined to state their gender. Regarding sexual orientation, 92.4% ( $n = 2,368$ ) were heterosexual, 4.8% ( $n = 124$ ) were bisexual, 1.6% ( $n = 40$ ) were lesbian or gay, and 1.2% ( $n = 31$ ) identified as “something else” or “don’t know.” Overall, 90.8% ( $n = 2,331$ ) were cisgender and heterosexual, and 9.2% ( $n = 235$ ) were a sexual or gender minority (as defined in Measures below). Regarding race and ethnicity, participants were 82.5% ( $n = 2,159$ ) White, 9.9% ( $n = 257$ ) as Asian, 9.3% ( $n = 244$ ) as Latino/Hispanic, 5.4% ( $n = 141$ ) as Black/African American, 1.9% ( $n = 49$ ) as American Indian/Alaskan Native, 0.3% ( $n = 8$ ) as Native Hawaiian/Pacific Islander, and 4.0% ( $n = 107$ ) as other (more than one category could be endorsed). Across all categories, 74.0% ( $n = 1,900$ ) were non-Hispanic White and 26.0% ( $n = 666$ ) were racial/ethnic minorities.

### Procedures

All procedures were approved by the university’s institutional review board. Undergraduate psychology students aged 19 (the local age of majority) or older were recruited through an online participation portal (Sona Systems) for a larger prospective study about “life experiences.” Data were collected in fall and spring semesters, from fall 2016 through spring 2019; data were not collected in the summers. All participants who provided informed

consent to participate were considered in analyses, regardless of survey completion. Students were only allowed to complete the study once; for those who never completed the survey, the most recent survey attempt was considered (of 2,637 responses, 21 [0.8%] were removed as duplicates). As indicated by Qualtrics timestamps, participants who took over 24 hours to fill out the survey were excluded given the time-sensitive nature of our hypotheses (of 2,616 students, 50 [1.9%] took over 24 hours). Those who completed the survey in the context of the larger study were awarded participation credit and entered into a raffle for a tablet computer valued at \$50.

## Measures

**Sexual assault screener.**—The Modified Sexual Experiences Survey (MSES; Messman-Moore, Walsh, & DiLillo, 2010), an expanded version of the Sexual Experiences Survey (Koss, Gidycz, & Wisniewski, 1987), was used to assess for unwanted sexual experiences since the age of 14. Participants responded “yes” or “no” to 14 behaviorally-specific, gender-neutral questions, such as, “*Have you had sexual intercourse (vaginal penetration by a penis) when you didn’t want to because someone threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make you?*” These items were used to assess for attempted or completed oral, anal, or vaginal sex or other sex acts that occurred as a result of verbal coercion or authority, substance-related incapacitation, or actual or threatened physical force. Participants who responded “yes” to any of these screener questions were considered to have had a positive screener for prior sexual assault (=1), whereas participants who responded “no” to all items were considered to have a negative screener (=0). Although psychometrics on this modified measure are not available, the Sexual Experiences Survey has been shown to have adequate test-retest reliability and external validity as reflected by concordance with interviewer ratings (Koss & Gidycz, 1985; Testa, VanZile-Tamsen, Livingston, & Koss, 2004).

**Sexual assault label.**—Although some prior research has focused on “rape” acknowledgment, we considered whether participants labeled an experience “sexual assault” because the #MeToo movement has focused on broad experiences of sexual assault, harassment, and misconduct. Prior work also suggests college students are more likely to label their experiences “sexual assault” than “rape” (Donde, Ragsdale, Koss, & Zucker, 2018). Participants who reported a prior sexual assault on the screener were asked follow-up questions regarding the event they considered to be “most upsetting.” To assess acknowledgment, participants were asked, “To what extent do you consider what happened to be sexual assault?” Response options ranged from 1 (*definitely not sexual assault*) to 4 (*unsure*) to 7 (*definitely sexual assault*).

**Sexual assault characteristics.**—As noted, participants responding “yes” to one of the screening items then completed follow-up questions to assess the nature of their “most upsetting” unwanted sexual experience. These questions assessed the extent of various perpetrator tactics on a scale from 1 (*not at all*) to 5 (*very much*). Mean scores represented verbal coercion/authority (4 items), being unable to consent or resist due to substances (2 items), and threatened or actual force (3 items). In addition, participants were asked, “Prior to this incident, had you previously engaged willingly in sexual activity with this person?” A



potential history of consensual sex with the primary perpetrator was indicated by a response of “yes” or “unsure” (=1) instead of “no” (=0). “Unsure” and “yes” responses were grouped together because “unsure” responses could indicate prior sexual activity with the perpetrator, even if consent was ambiguous.

**Demographics.**—Questions assessing sexual and gender minority status were based on the Institute of Medicine’s (2013) recommendations. Participants were asked to indicate their current gender identity, sex assigned at birth, and sexual orientation. In addition, participants were asked whether they are “sexually active,” and if so, whether they have sex with men, women, or both. Participants were considered LGBTQ (lesbian / gay / bisexual / transgender / queer; coded as LGBTQ = 1) if any of the following criteria were met: (a) gender identity was transgender, gender-queer, or gender-fluid; (b) gender identity differed from sex assigned at birth; (c) sexual orientation was lesbian, gay, bisexual, or “something else”; or (d) the participant reported having sex with individuals of the same gender. Participants were considered to be cisgender heterosexual individuals (coded as LGBTQ = 0) if they identified as heterosexual and their sex assigned at birth matched their current gender identity.

Male vs. female gender identity was also considered separately. Given that less than 1% of the sample identified as gender non-binary, which was represented by the LGBTQ variable, gender identity was dummy-coded as 0 = *female* or 1 = *male*. Other gender identities were considered missing to specifically compare men and women with a single dummy code.

Racial identity was assessed by asking participants to select which best describes them, out of the following options (more than one option could be checked): American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, or other. Regarding ethnicity, all participants were asked to indicate whether they were of “Latino, Hispanic, or of Spanish origin.” Racial/ethnic minority status was coded such that 0 = *non-Hispanic White* and 1 = *any endorsement of another racial/ethnic category*.

### Data Analysis Plan

Because the constant prevalence hypotheses involved the expectation of no effect, traditional null-hypothesis testing methods would not be appropriate. Instead, a Bayesian approach was indicated (Gelman & Rubin, 1995; Kruschke, 2011; McElreath, 2015). In short, Bayesian statistical techniques use information from both observed data and researchers’ prior expectations (which were minimal in this study) to generate a distribution of plausible regression coefficients for the population of interest. Markov Chain Monte Carlo (MCMC) simulation techniques use observed data in combination with the researcher-selected model (e.g., regression) to produce a *posterior probability distribution*, which represents the plausible values for a model parameter in the population. In current analyses, all posteriors were assumed to be approximately normally distributed. The result of Bayesian analyses is the posterior distribution, which we summarize via the mean (i.e., the most probable value) and 95% credibility intervals (i.e., the range around the mean that contains 95% of the distribution of plausible values).

**Model specification.**—Within the full sample of 2,566 participants, we first tested the constant prevalence hypothesis (Hypothesis 1) by using Bayesian logistic regression to predict responses on the behaviorally-specific sexual assault screener (0 = *negative*, 1 = *positive for sexual assault*). For the 596 participants who were positive on this screener, we then tested the increasing acknowledgment hypothesis (Hypothesis 2) by using Bayesian linear regression to predict participants' acknowledgment that their most upsetting unwanted sexual experience was a sexual assault (1 = *definitely not*, 7 = *definitely*). Following a standard polynomial knot regression scheme (Fitzmaurice, Laird, & Ware, 2011), time was represented by a dummy variable representing whether the day was Post #MeToo (0 = *before October 15, 2017*; 1 = *on or after October 15, 2017*), linear and quadratic terms for study week<sup>1</sup> (zero-centered at October 15, 2017), as well as interactions between the Post #MeToo dummy variable and the linear and quadratic study week terms. This coding scheme allowed for examination of changing trends both pre and post #MeToo. Because there are multiple terms involving #MeToo, an overall #MeToo effect was evaluated by calculating the first derivative of our regression equation with respect to #MeToo (Aiken & West, 1991). This effect represents how much higher an outcome is on a given week post #MeToo than it would have been had pre #MeToo trends simply continued.

Sexual assault characteristics (coercion, incapacitation, force, and history of consensual sex with the perpetrator) were also included as covariates for the increasing acknowledgment model (Hypothesis 3), but were not relevant to the prediction of any sexual assault in the constant prevalence model. Additional predictors for both models included demographic covariates (gender, LGBTQ status, race/ethnicity; Hypothesis 4).

**Prior distributions.**—A Normal distribution ( $M = 0$ ,  $SD = 10$ ) was used as the prior for all parameters. These priors are uninformative, exerting less influence on the posterior distributions than would be expected from adding even one additional data point to our sample.<sup>2</sup>

**Regions of practical equivalence.**—Because there is zero probability of finding a regression effect exactly equal to zero, and we specified a Region of Practical Equivalence (ROPE) for which a statistical effect would be considered negligible for the constant prevalence and increasing acknowledgment hypotheses.

For the constant prevalence hypothesis, we set the ROPE to reflect that there is often variability around prevalence estimates of sexual assault. Drawing on recent CDC data (Smith et al., 2017), we defined the ROPE to be  $\pm 3\%$ , or the average absolute difference in prevalence of lifetime contact sexual violence for women between the state where data were collected (Nebraska) and other US states. We would thus regard the constant prevalence hypothesis to be supported if 95% of the posterior distribution for the #MeToo effect on

<sup>1</sup>Study day was divided by 7 for computational reasons. In preliminary analyses, the polynomial terms grew so large that model convergence became inconsistent. Dividing the original study day term by 7 resolved this problem (so time is now measured in weeks) and has no effect on statistical inference, as it is a linear transformation.

<sup>2</sup>Using the method outlined by Morita, Thall, and Müller (2008), we estimated the effective sample size of these priors, or how many participants responding in a manner consistent with hypotheses would need to be added to achieve a similar influence on results. Our priors were associated with an effective sample size of  $n = 0.82$  for the logistic regression in the constant prevalence hypothesis and of  $n = 0.43$  for the linear regression in the increasing acknowledgment hypothesis.



sexual assault prevalence were contained within the ROPE of  $\pm 3\%$  around 0 change. This would reflect a 95% chance that variability over time was less than variability between states, suggesting a negligible #MeToo effect on prevalence.

To our knowledge, state-specific estimates are not available for acknowledgment ratings on a continuous scale. Instead, we considered effect sizes for acknowledgment and used a ROPE of Cohen's  $d = \pm .10$  around 0, or half the size of what is normally regarded as a small effect (Kruschke, 2011). We would thus regard the increasing acknowledgment hypothesis to be supported if 95% of the #MeToo effect on acknowledgment were above this ROPE.

**Model estimation.**—Annotated model code and intermediate results (e.g., diagnostics, model convergence information) can be seen in the Supplemental Material. Both models were estimated and evaluated in R (R Core Team, 2017) using packages *MCMCpack* (Martin, Quinn, & Park, 2011), *coda* (Plummer et al., 2018), and *tidyverse* (Wickham & RStudio, 2017). Inspection of MCMC chains (McElreath, 2015) revealed 6,000 iterations (thinning = 2) produced desirable mixing for the constant prevalence model and 1,000 iterations (thinning = 1) was sufficient for the increasing acknowledgment model (i.e., these settings led to minimal autocorrelation, Gelman-Rubin scores approximating 1.0 for all chains). Missing data were handled via multiple imputation using the *mice* package (van Buuren & Groothuis-Oudshoorn, 2010). Separate MCMC chains were produced for  $m = 100$  multiply imputed datasets, then 10,000 random samples were drawn from these chains to produce a final posterior distribution for each hypothesis (Zhou & Reiter, 2010). This approach has been shown to be robust even when the posterior distribution for model parameters is not multivariate normal.

## Results

Of the 2,566 participants who completed the behaviorally-specific screener, 596 (23.2%) indicated they had an unwanted sexual experience since age 14 that met behaviorally-specific criteria for sexual assault. Specifically, sexual assault was reported by 29.7% ( $n = 534$ ) of women, 8.2% ( $n = 56$ ) men, and 55.6% ( $n = 5$ ) gender-queer / gender-fluid students. In addition, sexual assault was reported by 22.7% ( $n = 517$ ) cisgender heterosexual students and 35.0% ( $n = 79$ ) LGBTQ students. Moreover, sexual assault was reported by 25.2% ( $n = 468$ ) non-Hispanic White students and 19.9% ( $n = 128$ ) students who identified as a racial or ethnic minority.

Those who reported a sexual assault on the screener completed follow-up questions about their most upsetting unwanted sexual experience. Participants reported the extent of various perpetrator tactics on a 1 to 5 scale, including verbal coercion ( $M = 1.78$ ,  $SD = 0.76$ ), incapacitation due to substances ( $M = 1.62$ ,  $SD = 0.94$ ), and actual or threatened physical force ( $M = 1.33$ ,  $SD = 0.67$ ). In addition, 43.3% ( $n = 258$ ) reported they had (or were unsure if they had) engaged in prior consensual activity with the perpetrator. When asked about the extent to which they consider what happened to be sexual assault on a scale from 1 to 7, participants provided an average of rating 3.80 ( $SD = 2.20$ ).

All regression model results are reported in Table 1 and follow-up results regarding the aggregate #MeToo effect are reported in Table 2. Figure 1 shows mean responses over the study period. Regarding the constant prevalence hypothesis (Hypothesis 1), there was no point in the post #MeToo period where 95% of the posterior distribution was contained within the ROPE, nor was there a point at which 95% of the posterior was entirely above or below the ROPE. These results reflect high uncertainty about whether the sexual assault prevalence changed after the #MeToo movement began or remained approximately the same. That is, stability (or change) in sexual assault prevalence following the #MeToo movement can neither be confirmed or denied in this sample. Conversely, regarding the increasing acknowledgment hypothesis (Hypothesis 2), there was a clear pattern of increasing probability that the #MeToo effect is above the ROPE. By 70 weeks after the start of the #MeToo movement, there was at least a 95% probability that acknowledgment of sexual assault had increased to a non-trivial degree (i.e., beyond the ROPE).

### Covariates

Results are displayed in Table 1. Consistent with Hypothesis 3, individuals were more likely to label their experience as a sexual assault if the experience involved more severe perpetrator tactics (i.e., verbal coercion, incapacitation due to substances, force) and they did not have a history of consensual sexual activity with the perpetrator. Consistent with Hypothesis 4, women and gender/sexual minorities were more likely to screen positive for sexual assault, as well as acknowledge that experience as sexual assault. Non-Hispanic White individuals were more likely than racial/ethnic minorities to screen positive for sexual assault, but there was no difference by race/ethnicity in acknowledgment.

### Power

Data were collected as part of a larger study that happened to overlap with the beginning of the #MeToo movement. Thus, sample size was fixed and power analyses were conducted post hoc. Power was estimated by simulating  $m = 100$  datasets. The covariance structure for covariates was held to be the same as in the current dataset, but the population effect of #MeToo movement was assumed to be consistent with our hypotheses by 24 weeks after the #MeToo movement began (i.e., true effects with a 95% chance of being within the ROPE for Hypothesis 1 and a 96% chance of being above the ROPE for Hypothesis 2). Models from our analyses were re-fit on each of these simulated datasets. Power was defined as the proportion of datasets in which each of the hypotheses was confirmed. Results showed that power for the constant prevalence hypothesis was exceptionally low (power  $< .01$ ). Follow-up analyses revealed power to determine prevalence change within  $\pm 30\%$  (rather than the original ROPE of  $\pm 3\%$ ) was higher, but still inadequate (power = .20). This low power is likely due to a low baseline and high variability in the sexual assault prevalence before #MeToo, which makes stability (or change) in prevalence after #MeToo especially difficult to detect. Conversely, power was acceptable for the increasing prevalence hypothesis (power = .85), which suggests confidence in related results.

## Discussion

This study is the first to our knowledge to empirically examine whether the #MeToo movement was associated with changes in individuals' perceptions of their own sexual assault experiences. The most public stories of the #MeToo movement have involved famous perpetrators being held accountable for assaults that survivors may have been privately acknowledged for years. Little is known about the effect of this cultural reckoning on non-celebrities and perceptions of personal experiences. Within an ongoing study of college students, we had an opportunity to examine potential changes in how participants responded to standardized questions assessing sexual assault using behaviorally specific criteria, as well as how personal perceptions of sexual assault shifted in the aftermath of the #MeToo movement. Strengths of this study include the use of a standardized survey over the course of three years, a relatively large sample, inclusion of men and gender minorities, and the use of a Bayesian statistical approach, which permitted examination of the constant prevalence hypotheses.

Findings were inconclusive regarding our *constant prevalence hypothesis* (Hypothesis 1), in that we could not confirm nor deny whether prevalence of sexual assault was constant over the three years of the study. We used a stringent bar for "negligible" change, and thus did not have sufficient power to determine whether any time-related changes in behaviorally specific reports were in fact negligible. Instead, there was a large amount of variability (i.e., wide posterior distributions) such that increases or decreases in prevalence may also be plausible, and could not be ruled out. This variability may have resulted in part from consideration of a broad range of sexual assault experiences (e.g., both recent and past events) across students of all genders. However, it is notable that there was no consistent pattern of change, and the prevalence of sexual assault in adolescence or adulthood remained between 22% and 27% per semester. These rates are similar to research in national samples, which indicate around 1 in 5 US women have been raped (Black et al., 2011; Kilpatrick et al., 2007) and around 1 in 3 US women have experienced sexual violence in their lifetime (Smith et al., 2017). Longer studies with large national samples, or longitudinal meta-analyses of past work would be needed to evaluate whether the prevalence of behaviorally-defined sexual assault has changed over time.

On the other hand, we did observe clear evidence in support of our *increasing acknowledgment hypothesis* (Hypothesis 2). Even after controlling for characteristics of the assault, survivors became increasingly likely to label their most upsetting unwanted sexual experience as a sexual assault. Although we only assessed acknowledgment at one time for each individual, this finding is consistent with prior work suggesting acknowledgment of a sexual assault or rape can change over time (Botta & Pingree, 1997; Fisher et al., 2003; Littleton et al., 2006, 2007, 2009), and may be affected by external factors. Though we could not evaluate causal effects on survivors' acknowledgment in this study, the collective shifts in acknowledgment over time corresponded with the rise of the #MeToo movement, suggesting that societal influences are worth considering. Specifically, the shift in acknowledgment may signal societal scripts for sexual assault or rape are changing, although more research is needed to examine this possibility. In addition, the #MeToo movement involved a unique combination of many people publicly sharing that they had

experienced sexual assault or harassment (using labels without behavioral details), and media coverage of select assaults by famous perpetrators (involving both behavioral details and labels). This may have allowed for reduced stigma surrounding the notion of being a sexual assault survivor, combined with increased public awareness of the range in behavioral experiences that can be recognized as sexual assault. Witnessing supportive responses to others' disclosures in online contexts such as Twitter (Bogen et al., 2019) may have further reduced stigma and increased a sense of support. In the context of this dialogue about sexual assault, individuals may have felt safety in numbers, reevaluated past sexual encounters, and allowed themselves permission to label the experience an assault. Consistent with evidence that online searches for reporting sexual assault increased since the #MeToo movement began (Caputi et al., 2019), greater recognition of unwanted sexual experiences as sexual assault may have allowed survivors to make important steps, including disclosing their experience and seeking help.

Further, the effect of the online social movement on individual perceptions of personal experiences appeared to grow over time. That is, acknowledgment tended to increase steadily once the movement began, with significant effects emerging by 70 weeks post #MeToo. This hints at a societal effect that builds slowly over time. It can be quite challenging for individuals to accept that an assault occurred. Survivors may be motivated to minimize an unwanted sexual experience, perhaps to avoid identification as a "victim" or reduce cognitive dissonance while retaining a relationship with a perpetrator (Jaffe et al., 2017). Thus, it may take time and repeated exposure to public disclosures before personal acknowledgment of an assault shifts. However, once survivors begin to overcome barriers to acknowledgment, they may be unlikely to reverse course, consistent with our findings of a slow trend toward acknowledgment post #MeToo. These findings point to the possible staying power of shifts in cultural awareness.

Acknowledgment was also associated with sexual assault characteristics (Hypothesis 3). Consistent with typical societal rape scripts and prior research (e.g., Cleere & Lynn, 2013; Littleton et al., 2009), acknowledgment was greater for sexual assaults involving more physical force. Similarly, more severe substance-related incapacitation during the assault was associated with greater acknowledgment. Although past work has suggested rapes involving alcohol are less likely to be acknowledged than forcible rapes (Botta & Pingree, 1997; Layman et al., 1996; for exception, Fisher et al., 2003), the current study assessed degree of incapacitation, independent from degree of force. Highlighting the importance of considering all perpetrator tactics, more severe verbal coercion was also associated with greater acknowledgment, but to a lesser degree than incapacitation or force. Also consistent with prior work (e.g., Cleere & Lynn, 2013; Jaffe et al., 2017) and expectations, acknowledgment was greater among participants who did not have a history of consensual sexual activity with the perpetrator. These findings highlight that although trends in average acknowledgment may change over time, specific sexual assault characteristics may continue to shape individual perceptions of a given experience.

In line with other work demonstrating sexual violence disproportionately affects women and gender/sexual minorities (Martin, Fisher, Warner, Krebs, & Lindquist, 2011; Peterson, Voller, Polusny, & Murdoch, 2011; Rothman, Exner, & Baughman, 2011; Smith et al.,

2017), we found that women and LGBTQ students were more likely to report sexual assault (Hypothesis 4). Sexual assault acknowledgment in sexual/gender minorities is not well-studied, although Artime, McCallum, and Peterson (2014) reported no difference in acknowledgment based on sexual orientation in male survivors. The finding that sexual/gender minorities reported greater acknowledgment of sexual assault than cisgender heterosexual individuals suggests that a broader definition of minority status may be helpful for detecting differences in acknowledgment. Also consistent with past findings that 40% of female rape victims (Wilson & Miller, 2016) and 24% of male rape victims (Artime et al., 2014) acknowledge their experience as rape, women in the present study reported greater use of the label “sexual assault” than men. Acknowledging a sexual assault may be particularly challenging for men given the common myth that men cannot be raped (e.g., Peterson et al., 2011) and social movements such as #MeToo have focused predominantly on women. More research is needed to understand acknowledgment experiences for men, and to determine whether acknowledgment differs between trans and cisgender individuals, or between sexual minority men and women.

We also included race/ethnicity as a covariate and found that non-Hispanic White individuals were more likely than racial/ethnic minorities to screen positive for sexual assault. Given that the racial/ethnic minorities most highly represented in our sample were Asian and Hispanic, this finding is consistent with research in national samples, which show the lifetime prevalence for contact sexual violence is lower in Asian/Pacific Islander and Hispanic women than non-Hispanic White women (Smith et al., 2017). Current findings revealed no difference by race/ethnicity in acknowledgment, also consistent with past work (Donde et al., 2018; Fisher et al., 2003). We did not examine demographic factors as moderators due to limitations in sample size, as relatively few participants were represented on any given study day. Therefore, it remains unclear whether pre-post #MeToo trends for acknowledgment might vary by gender, LGBTQ status, or race/ethnicity. We encourage future researchers to consider these possibilities in larger, more diverse samples, which would also allow for the examination of intersectionality.

## Limitations

Findings should be interpreted in light of our use of archival data. Although we had a large sample, it was not sufficiently powered to confirm negligible change in sexual assault prevalence. Our findings of time-related changes in acknowledgment should also be interpreted with caution. Because participants chose when they enrolled in the study, rather than being randomly assigned to complete the study before or after the #MeToo movement began, there may have been some systematic variation in the time surveys were completed. For instance, although the study was advertised as research on general “life experiences” to reduce self-selection bias, some students may have heard about its content from classmates and conceivably, some students who acknowledged a personal history of sexual assault may have been more motivated to participate after the initiation of the #MeToo movement. Despite this possibility, we suspect the timing of enrollment was most strongly related to students’ course requirements and time management skills (e.g., students with poorer time management skills may have been more likely to complete the survey at the end of the semester). An additional limitation is that we only assessed acknowledgment in participants

who screened positive for a behaviorally defined sexual assault. Some individuals who screened negative on the behavioral items may have experienced “close calls” or other forms of unwanted sex that did not meet the behavioral specifications of the MSES (Testa, VanZile-Tamsen, Livingston, & Koss, 2004). It therefore remains unclear whether labeled reports of sexual assault might have changed over time for those not meeting standardized behavioral definitions of sexual assault.

Additional study limitations should be considered when interpreting all findings. For example, we only examined one observation per participant; repeated measure designs are needed to understand changes in perceptions of a single index assault. Further, assessments of sexual assault characteristics and acknowledgment lack psychometric evaluation and could be standardized in future research. We also focused specifically on the influence of the #MeToo movement, but other individual- or community-level events during this time may have also affected acknowledgment. Future studies might consider which types of events correspond to meaningful change in societal and individual perceptions of sexual assault. Relatedly, we did not assess the degree to which participants were exposed to #MeToo content, or whether exposure was directly responsible for any observed changes. Mechanisms of change should be examined in future work, and might include exposure to sexual assault-related media, reduced stigma, or changes in rape scripts. Finally, participants were students at a Midwestern university and findings may not generalize to other samples. We encourage replication in larger, more diverse clinical and community samples that also represent adolescents and older adults.

### Research Implications

To more comprehensively evaluate whether responses to behaviorally-specific sexual assault screeners are robust to changing social norms, we recommend epidemiological studies or meta-analyses. Research is also needed to better understand the implications of newly acknowledged sexual assaults, particularly in the context of the #MeToo movement. For example, although new acknowledgment may have prompted some individuals to disclose the assault and seek out social support or treatment, it may also be accompanied by increased anxiety or distress, especially in light of repeated media reports of sexual violence that may promote hypervigilance or intrusive memories. Such consequences of acknowledgment will be important to study in changing social contexts. In light of the current findings suggesting acknowledgment of sexual assault may be associated with changing societal trends over time, we suggest researchers move away from static representations of sexual assault survivors as “acknowledged” versus “unacknowledged,” and instead focus on how a survivor labels each event as a changeable, time-sensitive perception of unwanted sexual experiences. Relatedly, investigators conducting ongoing sexual assault research would be wise to consider the social context (e.g., online and media representations of assault) for participant responses and behavior, including trauma-related cognitions and enrollment in treatment studies.

### Clinical and Policy Implications

These findings provide initial evidence that public support for sexual assault survivors during the #MeToo movement may have allowed survivors to believe their own stories,



and increasingly acknowledge unwanted sexual experiences as sexual assault. Beyond the #MeToo movement, this work also suggests that social and consciousness-raising movements may contribute to changes in individual perceptions of personal experiences. Better understanding how media representations and online trends might affect sexual assault survivors could help to inform responsible journalism and coverage of sexual trauma, adding to similar literature on disaster- and terrorism-related media coverage (Pfefferbaum et al., 2014, 2018). Research examining survivors' responses as well as the mechanisms underlying changes in acknowledgment could also inform the development of interventions via online social networks to target acknowledgment and other outcomes, such as social support and treatment seeking. Finally, this study highlights that even after the #MeToo movement, not all survivors recognize unwanted sexual experience as meeting the definition of sexual assault. Thus, we encourage clinicians and researchers to engage in ongoing efforts to bridge the gap between formal and lay perspectives of what constitutes sexual assault.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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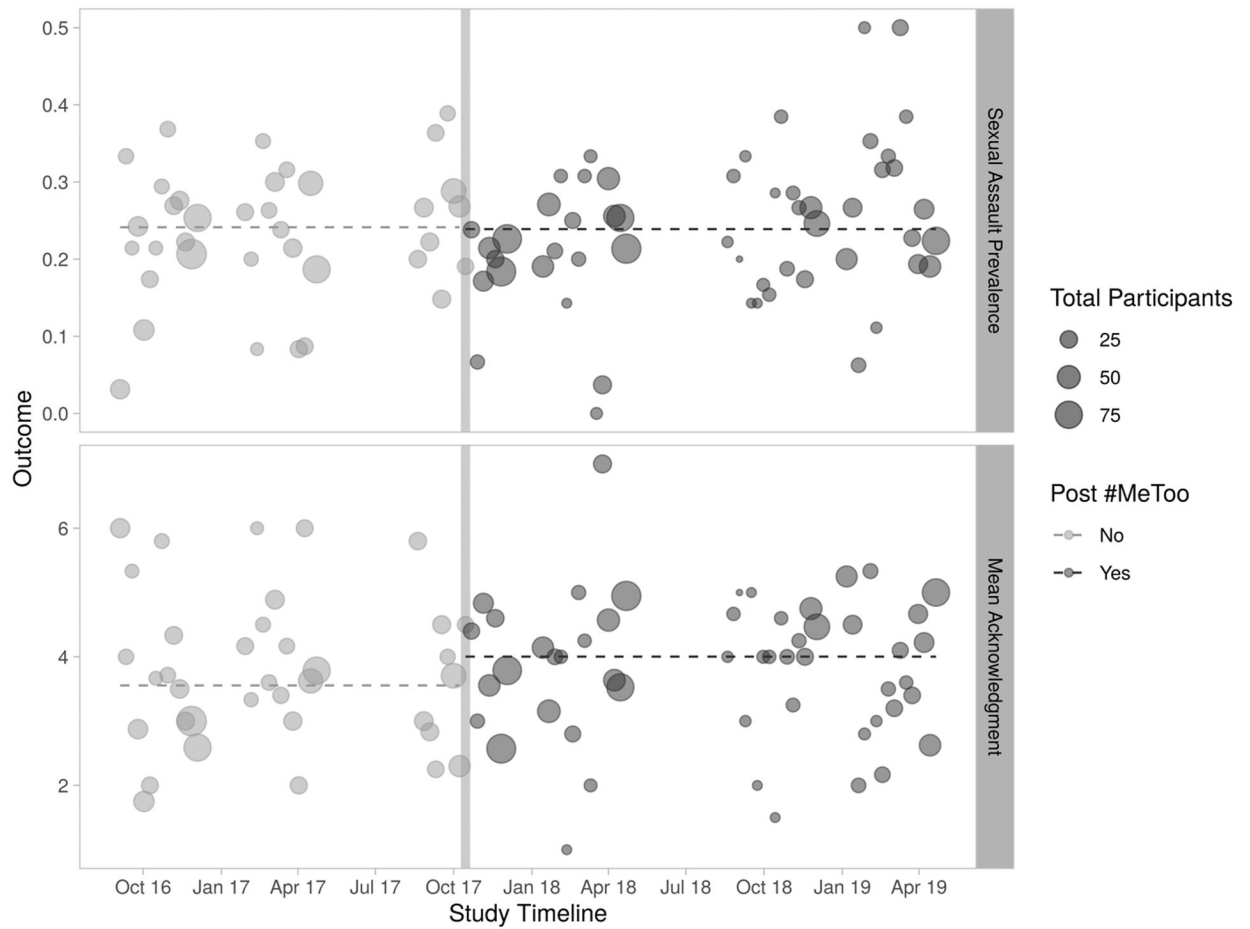
## References

- Aiken LS, & West SG (1991). Multiple regression: Testing and interpreting interactions. Thousand Oaks, CA: Sage Publications, Inc.
- Artime TM, McCallum EB, & Peterson ZD (2014). Men's acknowledgment of their sexual victimization experiences. *Psychology of Men & Masculinity*, 15, 313–323. doi:10.1037/a0033376
- Basile KC, Smith SG, Breiding MJ, Black MC, & Mahendra RR (2014). 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.
- Black MC, Basile KC, Breiding MJ, Smith SG, Walters ML, Merrick MT, Chen J, & Stevens MR (2011). The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 summary report. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Bogen KW, Bleiweiss K, & Orchowski LM (2019). Sexual violence is #NotOkay: Social reactions to disclosures of sexual victimization on Twitter. *Psychology of Violence*, 9, 127–137. doi:10.1037/vio0000192
- Botta RA, & Pingree S (1997). Interpersonal communication and rape: Women acknowledge their assaults. *Journal of Health Communication*, 2, 197–212. doi:10.1080/108107397127752 [PubMed: 10977247]
- Boyle KM, & Clay-Warner J (2018). Shameful “victims” and angry “survivors”: Emotion, mental health, and labeling sexual assault. *Violence and Victims*, 33, 436–452. doi:10.1891/0886-6708.VV-D-17-00055 [PubMed: 30567857]

- Caputi TL, Nobles AL, & Ayers JW (2019). Internet searches for sexual harassment and assault, reporting, and training since the #MeToo movement. *JAMA Internal Medicine*, 179, 258–259. doi:10.1001/jamainternmed.2018.5094 [PubMed: 30575847]
- CBS. (10 24, 2017). #MeToo reaches 85 countries with 1.7M tweets. Retrieved from <https://www.cbsnews.com/news/metoo-reaches-85-countries-with-1-7-million-tweets/>
- Cleere C, & Lynn SJ (2013). Acknowledged versus unacknowledged sexual assault among college women. *Journal of Interpersonal Violence*, 28, 2593–2611. doi:10.1177/0886260513479033 [PubMed: 23508087]
- Cobb S, & Horeck T (2018). Post Weinstein: Gendered power and harassment in the media industries. *Feminist Media Studies*, 18, 489–491. doi:10.1080/14680777.2018.1456155
- Cook SL, Gidycz CA, Koss MP, & Murphy M (2011). Emerging issues in the measurement of rape victimization. *Violence Against Women*, 17, 201–218. doi:10.1177/1077801210397741 [PubMed: 21307030]
- Dixon K (2014). Feminist online identity: Analyzing the presence of hashtag feminism. *Journal of Arts and Humanities*, 3(7), 34–40. doi:10.18533/journal.v3i7.509
- Donde SD, Ragsdale SK, Koss MP, & Zucker AN (2018). If it wasn't rape, was it sexual assault? Comparing rape and sexual assault acknowledgment in college women who have experienced rape. *Violence Against Women*, 24, 1718–1738. doi:10.1177/1077801217743339. [PubMed: 30295179]
- Fisher BS, Daigle LE, Cullen FT, & Turner MG (2003). Acknowledging sexual victimization as rape: Results from a national-level study. *Justice Quarterly*, 20, 535–574. doi:10.1080/07418820300095611
- Fitzmaurice GM, Laird NM, & Ware JH (2011). *Applied longitudinal analysis* (2<sup>nd</sup> ed.). Hoboken, NJ: Wiley & Sons, Inc.
- Gelman A, & Rubin DB (1995). Avoiding model selection in Bayesian social research. *Sociological Methodology*, 25, 165–173. doi:10.2307/271064
- Hemmings C (2018). Resisting popular feminisms: Gender, sexuality and the lure of the modern. *Gender, Place & Culture*, 25, 963–977. doi:10.1080/0966369X.2018.1433639
- Institute of Medicine. (2013). *Collecting sexual orientation and gender identity data in electronic health records: Workshop summary*. Washington, DC: The National Academies Press.
- Jaffe AE, Steel AL, DiLillo D, Messman-Moore TL, & Gratz KL (2017). Characterizing sexual violence in intimate relationships: An examination of blame attributions and rape acknowledgment. *Journal of Interpersonal Violence*. Advanced online publication. doi:10.1177/0886260517726972
- Jennings WG, Piquero AR, Zimring FE, & Reingle JM (2015). Assessing the continuity of sex offending over the life course. In Blokland A & Lussier P (Eds.), *Sex offenders: A criminal career approach* (pp. 129–142). West Sussex, UK: Wiley-Blackwell.
- Kahn AS, & Mathie VA (2000). Understanding the unacknowledged rape victim. In Travis CB & White JW (Eds.), *Society, Sexuality, and Feminism* (pp. 377–403). Washington, DC: American Psychological Association.
- Kahn AS, Jackson J, Kully C, Badger K, & Halvorsen J (2003). Calling it rape: Differences in experiences of women who do or do not label their sexual assault as rape. *Psychology of Women Quarterly*, 27, 233–242. doi:10.1111/1471-6402.00103
- Kilpatrick DG, Resnick HS, Ruggiero KJ, Conoscenti LM, & McCauley J (2007). *Drug-facilitated, incapacitated, and forcible rape: A national study*. Charleston, SC: Medical University of South Carolina, National Crime Victims Research & Treatment Center.
- Koss MP (1985). The hidden rape victim: Personality, attitudinal, and situational characteristics. *Psychology of Women Quarterly*, 9, 193–212. doi:10.1111/j.1471-6402.1985.tb00872.x
- Koss MP, & Gidycz CA (1985). Sexual Experiences Survey: Reliability and validity. *Journal of Consulting and Clinical Psychology*, 53, 422–423. doi:10.1037/0022-006X.53.3.422 [PubMed: 3874219]
- Koss MP, Gidycz CA, & 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, 162–170. doi:10.1037/0022-006X.55.2.162 [PubMed: 3494755]
- Krebs C (2014). Measuring sexual victimization: On what fronts is the jury still out and do we need it to come in? *Trauma, Violence, & Abuse*, 15, 170–180. doi:10.1177/1524838014521028
- Kruschke JK (2011). *Doing Bayesian data analysis: A tutorial with R and BUGS*. Burlington, MA: Academic Press.
- Larabee A (2018). Editorial: Celebrity, politics, and the “Me, Too” moment. *The Journal of Popular Culture*, 51(1), 7–9. doi:10.1111/jpcu.12650
- Layman MJ, Gidycz CA, & Lynn SJ (1996). Unacknowledged versus acknowledged rape victims: Situational factors and posttraumatic stress. *Journal of Abnormal Psychology*, 105, 124–131. doi:10.1037/0021-843X.105.1.124 [PubMed: 8666701]
- Littleton HL, Axsom D, Breitkopf CR, & Berenson A (2006). Rape acknowledgment and postassault experiences: How acknowledgment status relates to disclosure, coping, worldview, and reactions received from others. *Violence and Victims*, 21, 761–778. doi:10.1891/0886-6708.21.6.761 [PubMed: 17220018]
- Littleton H, Axsom D, & Grills-Tauechel A (2009). Sexual assault victims’ acknowledgment status and revictimization risk. *Psychology of Women Quarterly*, 33, 34–42. doi:10.1111/j.1471-6402.2008.01472.x
- Littleton HL, Rhatigan DL, & Axsom D (2007). Unacknowledged rape: How much do we know about the hidden rape victim? *Journal of Aggression, Maltreatment & Trauma*, 14(4), 57–74. doi:10.1300/J146v14n04\_04
- Martin SL, Fisher BS, Warner TD, Krebs CP, & Lindquist CH (2011). Women’s sexual orientations and their experiences of sexual assault before and during university. *Women’s Health Issues*, 21, 199–205. doi:10.1016/j.whi.2010.12.002 [PubMed: 21521622]
- Martin AD, Quinn KM, & Park JH (2011). MCMCpack: Markov Chain Monte Carlo in R. *Journal of Statistical Software*, 42(9), 1–21. doi:10.18637/jss.v042.i09
- McElreath R (2015). *Statistical rethinking: A Bayesian course with examples in R and Stan*. Boca Raton: Chapman and Hall/CRC.
- Mendes K, Ringrose J, & Keller J (2018). #MeToo and the promise and pitfalls of challenging rape culture through digital feminist activism. *European Journal of Women’s Studies*, 25, 236–246. doi:10.1177/1350506818765318
- Messman-Moore TL, Walsh K, & DiLillo D (2010). Emotion dysregulation and risky sexual behavior in revictimization. *Child Abuse & Neglect*, 34, 967–976. doi:10.1016/j.chiabu.2010.06.004 [PubMed: 21030084]
- Morita S, Thall PF, & Müller P (2008). Determining the effective sample size of a parametric prior. *Biometrics*, 64, 595–602. doi:10.1111/j.1541-0420.2007.00888.x
- Parker CE (12 13, 2017). Reports of sexual harassment at Harvard increase amid national movement. *The Harvard Crimson*. Retrieved from <https://www.thecrimson.com/article/2017/12/13/title-ix-harvey-weinstein/>
- Peterson ZD, Voller EK, Polusny MA, & Murdoch M (2011). Prevalence and consequences of adult sexual assault of men: Review of empirical findings and state of the literature. *Clinical Psychology Review*, 31, 1–24. doi:10.1016/j.cpr.2010.08.006 [PubMed: 21130933]
- Pfefferbaum B, Newman E, Nelson SD, Nitiéma P, Pfefferbaum RL, & Rahman A (2014). Disaster media coverage and psychological outcomes: Descriptive findings in the extant research. *Current Psychiatry Reports*, 16, 464. doi:10.1007/s11920-014-0464-x [PubMed: 25064691]
- Pfefferbaum B, Tucker P, Pfefferbaum RL, Nelson SD, Nitiéma P, & Newman E (2018). Media effects in youth exposed to terrorist incidents: A historical perspective. *Current Psychiatry Reports*, 20, 11. doi:10.1007/s11920-018-0875-1 [PubMed: 29504064]
- Plummer M, Best N, Cowles K, Vines K, Sarkar D, Bates D, ... Magnusson A (2018). coda: Output analysis and diagnostics for MCMC (Version 0.19–2). Retrieved from <https://CRAN.R-project.org/package=coda>
- R Core Team (2017). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>

- Rothman EF, Exner D, & Baughman AL (2011). The prevalence of sexual assault against people who identify as gay, lesbian, or bisexual in the united states: A systematic review. *Trauma, Violence & Abuse*, 12, 55–66. doi:10.1177/1524838010390707
- Smith SG, Chen J, Basile KC, Gilbert LK, Merrick MT, Patel N, Walling M, & Jain A (2017). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010–2012 State Report*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.
- Testa M, VanZile-Tamsen C, Livingston JA, & Koss MP (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, 256–265. doi:10.1111/j.1471-6402.2004.00143.x
- van Buuren S, & Groothuis-Oudshoorn K (2010). mice: Multivariate imputation by chained equations in R. *Journal of Statistical Software*, 45(3), 1–68. doi:10.18637/jss.v045.i03
- Wickham H, & RStudio. (2017). tidyverse: Easily install and load the “Tidyverse.” Retrieved from <https://CRAN.R-project.org/package=tidyverse>
- Wilson LC, & Miller KE (2016). Meta-analysis of the prevalence of unacknowledged rape. *Trauma, Violence, & Abuse*, 17, 149–159. doi:10.1177/1524838015576391
- Zhou X, & Reiter JP (2010). A note on Bayesian inference after multiple imputation. *American Statistician*, 64, 159–163. doi:10.1198/tast.2010.09109
- Zinzow HM, Resnick HS, Barr SC, Danielson CK, & Kilpatrick DG (2012). Receipt of post-rape medical care in a national sample of female victims. *American Journal of Preventive Medicine*, 43, 183–187. doi:10.1016/j.amepre.2012.02.025 [PubMed: 22813683]



**Figure 1.** Sexual assault prevalence and mean acknowledgment ratings over the course of the study period.  
*Note.* Horizontal dashed lines represent mean values for the pre and post #MeToo periods. Vertical lines and point color indicate the #MeToo movement period, beginning on October 15, 2017. Point size represents the total number of participants who took the survey on a given week.

**Table 1**

Regression Parameter Estimates

Term	Constant Prevalence Hypothesis (n = 2,566)				Increasing Acknowledgment Hypothesis (n = 596)				
	b	SE	Lower CI	Upper CI	OR	b	SE	Lower CI	Upper CI
Intercept	-0.727	0.186	-1.097	-0.367	0.483	0.829	0.396	0.070	1.597
Male (vs. female)	-1.562	0.150	-1.857	-1.272	0.210	-0.661	0.283	-1.222	-0.115
LGBTQ (vs. cisgender/heterosexual)	0.635	0.155	0.329	0.938	1.887	0.895	0.235	0.411	1.333
Racial/ethnic minority (vs. White)	-0.308	0.117	-0.535	-0.078	0.735	-0.183	0.193	-0.570	0.185
Verbal coercion						0.244	0.114	0.018	0.464
Incapacitation due to substances						0.533	0.088	0.361	0.707
Threatened or actual force						1.171	0.126	0.925	1.413
History of consent with perpetrator						-0.684	0.167	-1.005	-0.356
Study week	0.002	0.015	-0.027	0.032	1.002	-0.036	0.025	-0.085	0.013
Study week SQ	< 0.001	< 0.001	-0.001	< 0.001	1.000	-0.001	< 0.001	-0.002	< 0.001
Post #MeToo	-0.274	0.250	-0.771	0.205	0.760	0.403	0.401	-0.393	1.175
Post #MeToo X Study week	0.001	0.019	-0.035	0.039	1.001	0.035	0.031	-0.028	0.095
Post #MeToo X Study week SQ	< 0.001	< 0.001	< 0.001	0.001	1.000	0.001	< 0.001	< 0.001	0.002

Note. Values are derived from the entire posterior probability distribution for the model. Thus, b = mean of all slopes for that term in the Markov Chain Monte Carlo chain, SE = standard error of slopes for a term, CI = credibility interval (i.e., the region defining 95% of the posterior probability distribution), and OR = the mean odds ratio for each term. SQ = squared.



**Table 2**

Proportion of posterior distributions below, within, and above ROPE

Weeks after #MeToo	Constant Prevalence Hypothesis			Increasing Acknowledgment Hypothesis		
	Below ROPE	Within ROPE	Above ROPE	Below ROPE	Within ROPE	Above ROPE
10	.61	.29	.10	.03	.11	.86
20	.54	.22	.24	.03	.06	.91
30	.50	.16	.34	.04	.04	.92
40	.47	.12	.41	.04	.02	.93
50	.45	.09	.46	.04	.02	.94
60	.44	.07	.50	.04	.01	.94
70	.43	.05	.52	.04	.01	.95*
80	.42	.04	.54	.04	.01	.95*

*Note.* ROPE = Region of Practical Equivalence. Posterior distributions were probed at 10-week intervals after the #MeToo movement began. For the constant prevalence hypothesis, supporting evidence would include values of .95 or greater within the ROPE (never observed). For the increasing acknowledgment hypothesis, supporting evidence would include values of .95 or greater above the ROPE (which is observed beginning 70 weeks after the start of the #MeToo movement).

\* consistent with hypothesis

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