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#MeToo and Google Inquiries Into Sexual Violence: A Hashtag Campaign Can Sustain Information Seeking

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Abstract

The #MeToo Movement has brought new attention to sexual harassment and assault. While the movement originates with activist Tarana Burke, actor Alyssa Milano used the phrase on Twitter in October 2017 in response to multiple sexual harassment allegations against Hollywood producer Harvey Weinstein. Within 24 hours, 53,000 people tweeted comments and/or shared personal experiences of sexual violence. The study objective was to measure how information seeking via Google searches for sexual harassment and assault changed following Milano's tweet and whether this change was sustained in spite of celebrity scandals. Weekly Google search inquiries in the United States were downloaded for the terms *metoo*, *sexual assault*, *sexual harassment*, *sexual abuse*, and *rape* for January 1, 2017 to July 15, 2018. Seven related news events about perpetrator accusations were considered. Results showed that searches for *metoo* increased dramatically after the Weinstein accusation and stayed high during subsequent accusations. A small decrease in searches followed, but the number remained very high relative to baseline (the period before the Weinstein accusation). Searches for *sexual assault* and *sexual harassment* increased substantially immediately following the Weinstein accusation, stayed high during subsequent accusations, and saw a decline after the accusation of Matt Lauer (talk show host; last event considered). We estimated a 40% to 70% reduction in searches 6 months after the Lauer accusation, though the increase in searches relative to baseline remained statistically significant. For *sexual abuse* and *rape*, the number of searches returned close to baseline by 6 months. It appears that the #MeToo movement sparked greater information seeking that was sustained beyond the associated events. Given its recent ubiquitous use in the media and public life, hashtag activism such as #MeToo can be used to draw further attention to the next steps in addressing sexual assault and harassment, moving public web inquiries from information seeking to action.

Keywords

sexual misconduct; sexual abuse; rape; #MeToo; social media; hashtag activism; Google inquiry

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Use of social media by public health campaigns can produce rapid, cost-effective ways of raising awareness about a health topic (Ayers et al., 2016). Celebrity discussion of health issues via social media channels can further amplify this effect by driving media coverage and public engagement with a given health topic (Noar, Althouse, Ayers, Francis, & Ribisl, 2015). For instance, Charlie Sheen's disclosure of his HIV-positive status correlated with large increases in HIV-related search inquiries (Ayers et al., 2016), as well as subsequent increases in HIV testing (Allem et al., 2017). Social media also allows ordinary people to share personal health stories that may engage the public in a meaningful way. Tawny Willoughby, a 27 year old from Kentucky who was first diagnosed with skin cancer at the age of 21, posted a selfie on her Facebook page after receiving skin cancer treatment, warning her followers to stay away from tanning beds and direct sunlight. Her post went viral and engaged the public in a manner typically only seen by celebrities (Noar et al., 2018). Studies have documented the short-term effect of these events on information seeking; however, less is known about whether information-seeking changes can be sustained long term and about the impact on related behaviors.

The #MeToo Movement

Sexual violence affects approximately 1 in 3 women and nearly 1 in 6 men during their lifetimes in the United States (Smith et al., 2017). Furthermore, an alarming 81% of women and 43% of men have experienced sexual harassment, including both workplace and nonworkplace incidents (Kearl, 2018).

The #MeToo Movement has brought new attention to sexual harassment and sexual assault and created an environment where these issues are talked about with regularity in public discourse. While the movement dates back 10 years to activist Tarana Burke (Vagianos, 2017), actor Alyssa Milano used the phrase on Twitter on October 17, 2017 in response to multiple allegations of sexual harassment against Hollywood producer Harvey Weinstein (Kantor & Twohey, 2017). Her tweet read, "If you've been sexually harassed or assaulted write 'me too' as a reply to this tweet." Within 24 hours, 53,000 people, including many other prominent female celebrities, tweeted comments and/or shared stories of their own experiences with sexual violence. Since then, more than 70 additional male public figures were accused of sexual misconduct, resulting in many firings and resignations (Almukhtar, Gold, & Buchanan, 2017).

Milano's tweet is an example of "hashtag activism" in that individuals called out sexual violence (as was the objective of Burke's original movement) in a way that is very public. The "me too" phrase went viral, as did the details of celebrity sexual violence and harassment cases (Xiong, Cho, & Boatwright, 2019). The hashtag attaches a unifying phrase that allows marginalized individuals to come together in discursive protest via social media (Yang, 2016). When hashtags are used to protest issues of marginalized women, it is often referred to as hashtag feminism (Khoja-Moolji, 2015). While #MeToo has become the most well-known example of hashtag feminism, #NotOkay was a form of resistance seen during the 2016 presidential campaign when Donald Trump's public discourse promoted a culture of rape (Maas, McCauley, Bonomi, & Leija, 2018). Tweets using this hashtag acknowledged and/or condemned rape culture, brought attention to Donald Trump's behaviors and the state

of sexual violence in the country, and called for boys and men to also fight against sexual violence (Maas et al., 2018).

Study Objective

This study assesses how an example of hashtag feminism is related to information seeking on topics related to sexual violence. One measure of the effect of the #MeToo campaign is the change in online information seeking, particularly Google inquiries (Ayers et al., 2016). Individuals looking for related information online may be seeking specific advice on how to respond to sexual violence or for general information about the topic. The objective of this study was to measure how information gathered via Google searches for sexual harassment and sexual assault changed after the initial #MeToo tweet and whether this change was sustained in spite of celebrity scandals. Specifically, we sought to answer the following questions: (a) Did the #MeToo social media campaign coincide with an increase in Google queries related to sexual assault, violence, and harassment? (b) Was the increase in inquiries sustained beyond the immediate aftermath of the social media campaign? (c) For how long was the increase in inquiries sustained, even when accounting for spikes in inquiries during scandals?

Method

Google-search trends ([google.com/trends](https://www.google.com/trends)) were provided through an application programming interface (API) to download inquiries by week in the United States for the following terms: *metoo*, *sexual assault*, *sexual harassment*, *sexual abuse*, and *rape*. These keywords satisfied the inclusion criteria of having at least one measurement equal to or larger than 100 in a week during the data-collection period. Search terms such as “sex violence,” “sexual coercion,” “sexual misconduct,” and “interpersonal violence” did not meet a sufficient number of inquiries and so were not included in the analysis. If multiple search terms were used in one inquiry, they would appear in the counts for a given week. For instance, if someone typed in “sexual violence harassment,” we would see a hit for both “sexual violence” and “sexual harassment.” The collection period was between January 1, 2017 and July 15, 2018 (second round of Weinstein indictments), and each data point represented the number of search queries that contain the keywords we provided per 10 million queries in the United States. To assess the number of search queries in spite of celebrity scandals, we considered a total of seven related events focused on perpetrators during this time: the original accusations against Harvey Weinstein (film producer; October 05, 2017), Kevin Spacey (Hollywood actor; October 29, 2017), Louis CK (comedian), and Roy Moore (politician, former Chief Justice of the Supreme Court of Alabama; both November 09, 2017), Al Franken (comedian and politician, former U.S. Senator from Minnesota; November 16, 2017), Russell Simmons (record and film producer; November 19, 2017), Matt Lauer (morning television talk show host; November 29, 2017), and finally, the initial indictment of Harvey Weinstein (May 31, 2018). We chose to focus on news events related to perpetrators because they were indicative of victims taking the risk of accusing powerful public figures to make their stories known.

To quantify the increase in search queries, we considered a reference or baseline period of 9 months between January 1, 2017 and October 1, 2017 (the week before the original accusation against Weinstein). The observations in the baseline period were assumed to follow a distribution with a given mean and standard deviation. The increase in the number of searches was calculated in two ways: (a) as percent increase relative to the mean searches during the baseline period: $[(search_{current\ week} - mean_{baseline}) / mean_{baseline}] \times 100\%$ and (b) as number of standard deviations of the baseline distribution from the baseline mean: $[(search_{current\ week} - mean_{baseline}) / sd_{baseline}]$. This latter measurement was obtained by subtracting the baseline mean and dividing by the baseline standard deviation from every observation during the period of interest. All analyses were conducted in R version 3.3.3.

Results

Relative to the mean baseline searches, the weekly mean search volume on the second week event (Kevin Spacey) increased by 1428.6% (33 sigma) for “metoo,” 134.2% (6.7 sigma) for “sexual assault,” 254.3% (8 sigma) for “sexual harassment,” and 59.7% (4.6 sigma) for “sexual abuse.” Comparatively, the searches for the keyword “rape” saw an increase of only 1% (0.1 sigma) from the baseline distribution.

To quantify how well the search volume was sustained, we investigated the search volumes after the last accusation event (Matt Lauer - November 29, 2017). The month of December 2017 showed a strong reduction in the number of searches for all keyword searches, especially during the last 2 weeks. However, in January 2018, searches for all keywords rebounded to a level above the baseline distribution. To investigate the lasting effects of the events, we focused on the months of March and June of 2018, which are 3 and 6 months after the last accusation event. In addition to the change relative to the baseline, we also report the percent change between these months and the week of November 29, 2017 (see Table 1). Thus, in March 2018, the number of searches increased 7,015.6% (162.2 sigma) relative to baseline and 47.58% relative to November 29, 2017 for “metoo,” 36% (1.8 sigma) relative to baseline and -47% relative to November 29, 2017 for “sexual assault,” 89.2% (2.8 sigma) relative to baseline and -62.28% relative to November 29, 2017 for “sexual harassment,” 13.4% (1 sigma) relative to baseline and -27.7% relative to November 29, 2017 for “sexual abuse,” and -19.5% (-1.7 sigma) relative to baseline and -24.8% relative to November 29, 2017 for “rape.” These trends were maintained at 6 months after November 29, 2017. In June 2018, the number of searches increased 6,642.6% (153.5 sigma) relative to baseline and 39.8% relative to November 29, 2017 for “metoo,” 5.7% (0.3 sigma) relative to baseline and -58.8% relative to November 29, 2017 for “sexual assault,” 28% (0.9 sigma) relative to baseline and -74.5% relative to November 29, 2017 for “sexual harassment,” 6.5% (0.5 sigma) relative to baseline and -32.1% relative to November 29, 2017 for “sexual abuse,” and -20.6% (-1.8 sigma) relative to baseline and -25.9% relative to November 29, 2017 for “rape.”

Figure 1 shows the percent change in searches from the baseline mean for each keyword inquiry, with each news event highlighted on the timeline. These events might have caused temporary spikes in query levels; however, overall, the query volume remained above the baseline levels, even if they decreased between news events.

Discussion

Google searches for “metoo” increased dramatically after the accusation against Harvey Weinstein and stayed much higher during the subsequent accusations through November 29, 2017 (the accusation of Matt Lauer). A small decrease in searches for “metoo” followed, but the number of searches remained very high relative to baseline. Searches for “sexual assault” and “sexual harassment” notably increased immediately after the accusation of Harvey Weinstein, stayed high during the various subsequent accusations, and saw a larger decline after the last accusation. The decrease in searches observed in December 2017 is possibly associated with end of the year holiday celebrations. We estimated a 40% to 70% reduction in searches from the accusation of Matt Lauer in 6 months, though the increase in these searches relative to baseline for these keywords remained statistically significant above the baseline distribution of searches. For “sexual abuse” and “rape,” the number of searches returned close to the baseline distribution by 6 months after the accusation of Matt Lauer. Overall, it appears that the #MeToo movement sparked greater information seeking that was sustained beyond the associated events. This social media campaign is associated with significantly increased information seeking, which was sustained for months after the events.

Social media is an effective way to increase awareness about health and social issues, including those issues that are stigmatized. Through the #MeToo movement, prominent female celebrities demonstrated they could publicly talk about their experiences of sexual violence and harassment with fewer repercussions. Perhaps other women saw this as an opportunity to seek out further information to address their own victimization. The movement may have also prompted men to seek information if they experienced victimization or to learn more about how to avoid perpetration. In fact, a response to the #MeToo movement intended to engage men and boys in the discussion of sexual violence soon followed. The #HowIWillChange movement prompted males to examine their own role in sustaining rape culture (PettyJohn, Muzzey, Maas, & McCauley, 2018). Specifically, a study of tweets using this hashtag revealed that Twitter users expressed commitment to examining personal engagement in toxic masculinity, teaching the next generation about consent and respect for women, calling out other men who engage in rape culture behavior, listening to women’s experiences of victimization, and promoting gender egalitarianism (PettyJohn et al., 2018).

Limitations

The fundamental limitation of search engine studies is that they can only track information seeking; they do not reveal who conducted the searches, the motives of the searches, or what information was found. Were searchers individuals who were victims of sexual violence, or general information seekers? What types of information did people find, and what follow-up actions were taken, both online and offline? While we cannot answer these questions with this type of data, the increases in key word inquiries are suggestive that the news events and social media campaign impacted behavior in the U.S. population. In the case of the #MeToo movement, queries into sexual assault and rape may foreshadow greater reporting rates or seeking forensic and/or psychological support services for those who have been the victims

of sexual misconduct. The main strength of such a study is that we can assess the timeline for interest in key terms through online inquiries and determine whether it appears to follow key events in the media, including social media. Further studies are warranted to better understand these reactions. It would also strengthen the evidence to look at the long-term impact of the #MeToo hashtag (such as multiple years after the initial tweet) and to assess how the social media campaign impacted behavior. An investigation into the global reach of this example of hashtag feminism is also warranted, but this was beyond the scope of this study.

The #MeToo campaign, especially given its recent ubiquitous use in the media and public life, can be used to draw further attention to the next steps needed in addressing issues around sexual assault and harassment, moving public web inquiries from information seeking to action. These could include attaching the hashtag to coping resources available for victims (or the lack thereof), resources for reporting incidents to authorities or workplace management, policies and laws currently in place or under review, and fostering a feeling of community among those who have survived such experiences. The National Sexual Assault Conference held in August 2018 is one example of how the hashtag has been turned into action. The conference's opening plenary featured Tarana Burke talking about where the #MeToo movement needs to go next (National Sexual Violence Resource Center, 2018; North, 2018). The #HowIWillChange follow-up movement is another example of hashtag activism resulting in clear ways to change behavior, although whether social media users actually engage in these promised behaviors is unknown. While a hashtag seems simplistic, and the #MeToo movement has been accused of being unfocused, without a clear purpose, and at times a threat to men falsely accused (North, 2018), the movement has upended public conversation about this health issue for women and others globally. How the sustained attention on the movement and related issues is used for addressing these women's health, safety, well-being, and policy change remains to be seen.

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Figure 1.
Percent change in Google inquiries regarding sexual misconduct from baseline with key news events connected to #MeToo.

Table 1.

Percentage Change from Baseline Mean and First News Event (Weinstein Accusations) to 3 and 6 Month Inquiry Levels.

	3 Months		6 Months	
	% Change From November 29, 2017	% Change From Baseline Mean	% Change From November 29, 2017	% Change From Baseline Mean
“metoo”	47.58	7,015.6	39.8	6,642.6
“Sexual assault”	−47	36	−58.8	5.7
“Sexual harassment”	−62.28	89.2	−74.5	28
“Sexual abuse”	−27.7	13.4	−32.1	6.5
“rape”	−24.8	−19.5	−25.9	−20.6