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Associations between social media displays and event-specific alcohol consumption by college students

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Abstract

Background—Mifflin Street Block Party is a yearly Wisconsin event known for high levels of alcohol consumption and previous negative outcomes. This study investigated displayed Mifflin references on Facebook and their association with alcohol consumption at Mifflin.

Methods—Participants included first-year college students who were enrolled in a longitudinal study involving Facebook profile assessments and interviews. We identified a subset of participants who were interviewed within 28 days following Mifflin. Participants were categorized as “Mifflin Displayers” or “Non-Displayers” based on Facebook profile content. Interviews included the TimeLine FollowBack to assess alcohol use in the past 28 days. Analysis included logistic and linear regression.

Results—Among the 66 participants included in this study, 45 (68.2%) were female and 38 (50%) were Mifflin Displayers on Facebook. Among the Mifflin Displayer participants, 18 (27.2%) displayed prior to Mifflin, 11 displayed the day of Mifflin (16.7%) and 19 (28.8%) displayed after. Some participants displayed in more than one time frame. A total of 40 (60.6%) reported alcohol use on the day of the Mifflin Street Block party. The mean number of drinks reported on the day of Mifflin was 8.8 (SD=6.1), with a range of 1 to 35. Displayed references to Mifflin on Facebook were positively associated with reporting alcohol use at Mifflin (OR=20.9, 95% CI 5.6–78.8).

Discussion—Displaying Facebook references to Mifflin was associated with alcohol consumption on the day of the event. Future prevention efforts could consider creating Facebook advertisements with safety messages triggered by Mifflin displays.

INTRODUCTION

Although common, alcohol use is a major cause of both morbidity and mortality among US college students.[1] Approximately half of students who use alcohol report direct alcohol-related harms and as many as 1700 college student deaths each year are alcohol-related.[2, 3]

While rates of daily drinking are low in this population, many college students report drinking heavily on particular occasions such as weekends or holidays.[4] Previous work has examined large alcohol-themed events and parties such as New Year’s Eve, St Patrick’s Day, spring break or Halloween.[5] These events have been associated with heavy alcohol use, even among students who do not ordinarily drink.[6, 7] Previous work has illustrated

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associations between heavy alcohol at these events and negative health and behavioral consequences including: drinking and driving, and committing acts of theft or vandalism.[8] The risk of attending such events may be particularly salient among the first-year college student population. Approximately 20% of students who did not drink heavily in high school initiate this behavior upon arrival at college, initiation at a large-scale event may present additional risks given these students' lack of experience with drinking.[9] For other first-year students, arrival at college is associated with a move from experimentation to frequent alcohol use that may be influenced by large alcohol-themed events.[10]

One event with significance to alcohol use on the University of Wisconsin-Madison campus is the Mifflin Street Block Party. This party is an annual celebration held on Mifflin Street on the first Saturday of May which includes widespread consumption of alcoholic beverages. In 2011, the Mifflin Street Block party had a larger and more intoxicated crowd. This was the first year that open containers were allowed on sidewalks and front yards if the attendee had a wristband. Police reports from the 2011 Mifflin party showed increased crime and violence including stabbings, sexual assaults, thefts and drug dealing. In total, the Madison Police Department arrested 162 people on 204 tentative charges.[11] In 2012, no drinking was allowed on sidewalks or the street, and crowds were back to the normal level of approximately 5000. However, the number of arrests was higher, likely related to arrests for open containers and underage consumption.[12] While many feel that control over Mifflin improved after the negative outcomes from 2011, this event remains a time of high alcohol consumption and risks for negative health, legal and social outcomes.

These alcohol-themed events present unique challenges for both universities and parents in providing appropriate guidance and promoting safety. Universities face challenges in anticipating attendance rates and sending appropriate prevention messages to students prior to the event, as well as ensuring safety during the event. Parents face challenges in understanding these events and providing guidance appropriate to their college students' life stage. New approaches for understanding these alcohol-themed events and providing event-specific anticipatory guidance to potential attendees are needed.

One novel approach to consider when investigating alcohol-themed events among college students may be social networking sites (SNSs), such as Facebook. These websites are popular among and consistently used by college students; up to 98% of college students use Facebook.[13, 14] References to alcohol use are common on SNSs; up to 83% of college students' profiles reference alcohol.[15] Our previous work investigated college students' displayed references to alcohol use and problem drinking.[16] We found that college students who referenced intoxication or problem drinking on their Facebook profiles were more likely to score as at risk for problem drinking using the Alcohol Use Disorders Identification Test (AUDIT).[17] It is unclear how students use social media to display their attitudes, intentions or behaviors regarding alcohol-themed events. It is possible that Facebook may provide novel opportunities to identify students planning to attend such events towards providing anticipatory guidance.

The purpose of this study was to investigate references to the Mifflin Street Block Party on Facebook. For this study we chose to focus on first-year students, as they are at high risk if attending this event given that they are underage and generally have less experience with alcohol use compared to their upperclassmen peers. Our goals were to describe displayed references to Mifflin on Facebook and understand associations between this displayed content and alcohol behaviors on the day of the Mifflin event.

METHODS

Data for this study was collected between April 16, 2012 and June 2, 2012 and received approval from the Institutional Review Board of the University of Wisconsin – Madison.

Setting and participants

Participants were selected from an ongoing study of 199 first-year college students from the University of Wisconsin-Madison that involved monthly Facebook profile evaluations for displayed references to alcohol and yearly interviews. The participants in the ongoing study were randomly selected from the registrar list of incoming first-year students and recruited the summer prior to enrolling in college. Potential participants received a pre-announcement postcard and then were contacted through email, phone calls and Facebook messages over a period of three weeks. Eligibility was based on being 18 or 19 years old and being enrolled as first-year fulltime students for fall 2011. Response rate was 52.8%.

From this larger study population, we identified a subset of participants for the present study. Inclusion criteria for this study included completing a phone interview within 28 days of Mifflin so that quantity and frequency of alcohol use on the day of Mifflin could be assessed using the validated TimeLine FollowBack procedure described below.[18] We then reviewed the Facebook coding data and interview data collected during that time period for this subset of participants.

Consent process and Facebook friending

During the consent process for the ongoing study, potential participants were informed that this was a longitudinal study involving intermittent phone interviews as well as evaluation of Facebook profiles, and that linking to our research team profile via “friending” was a requirement of the study. Participants were informed that Facebook content would be viewed, but that no one on the research team would post any information to the participant’s profile. Participants were asked to maintain open security settings with our research team.

Coding procedure

The Facebook profile of each participant was evaluated during the time period including one month prior to and one month after Mifflin. During this profile evaluation, a trained coder recorded displayed references to alcohol as well as specifically to Mifflin using a codebook specific to evaluating social media alcohol displays.[19] Data included the coder’s typewritten description of any image references (i.e. photographs or graphics) or verbatim text from profile (i.e. status updates, wall posts, likes/groups or comments). If present, identifiable information was removed from text references. Sections of the Facebook profile that were evaluated included the wall, photographs, likes/groups and events.

Codebook and variables

For the purposes of this study, we evaluated displayed Facebook references to the Mifflin Street Block Party. Image references included photos of participants attending Mifflin or wearing shirts or other apparel that referenced Mifflin. Text references included any status updates, wall posts or comments that referenced Mifflin. An example of a text reference to Mifflin would be a status update saying “Only three more days till Mifflin!” References to Mifflin also included “liking” the Mifflin Street Block Party Facebook page. Facebook users also have the option of using an “events” function to indicate their attendance at a particular event. When participants used this Facebook function to indicate that they were attending the Mifflin Street Block Party event it was recorded as a Mifflin reference. Details for the first three displayed references by each Mifflin Displayer participant included the format of these references (e.g. status update, photograph, like/group or event).

Interview procedure

The ongoing study included two types of interviews: yearly phone interviews conducted with all participants near the end of each academic year, and prompted phone interviews conducted if the participant displayed alcohol references on the profile. Interviews were scheduled at the participants' convenience. The present study included participants who had a yearly or prompted interview within 28 days of the Mifflin event. Interviews lasted between 40 and 60 minutes on average, data collection during interviews was done with a spreadsheet and written notes were taken for qualitative questions. Participants were provided $35 for completion of their interviews.

Interview variables

Interviews assessed alcohol behaviors including current use (past 28 days). For participants who reported current use of alcohol, we used the TimeLine Follow Back (TLFB) method to assess quantity and frequency of alcohol use.[18] During this validated procedure the interviewer works with the participant to review each day of the past 28 days to assess how many standard alcohol drinks were consumed. Standard alcohol drinks were defined as per National Institute of Alcohol Abuse and Alcoholism) guidelines which includes a 12 ounce serving of beer.[20] This procedure leads to the following measured outcomes: total number of alcoholic drinks, total number of drinking episodes and total calculated number of binge drinking episodes in the past 28 days. This procedure also allows identification of whether alcohol use took place on a particular day, such as the day of the Mifflin Street Block Party.

Analysis

Descriptive statistics were calculated for displayed references to Mifflin on Facebook. To calculate number of drinks on Mifflin, TLFB data for each participant on the date of the Mifflin party was used. We used logistic regression to determine associations between Mifflin displays on Facebook and self-reported alcohol use on Mifflin via the TLFB. We used linear regression to determine associations between number of displayed Mifflin references on Facebook and number of reported drinks at Mifflin. Both models were adjusted for gender and analyses stratified by gender were also conducted. All P values were 2-sided, and $P < .05$ was used to indicate statistical significance. Statistical analyses were performed using Stata version 10 (StataCorp: College Station, TX).

RESULTS

A total of 66 participants were identified and included in this study, among whom 45 (68.2%) were female and 96% were Caucasian. Table 1 illustrates this data. The sample included participants who had a yearly (N=39) or prompted interview (N=27) within 28 days of the Mifflin event. Of the prompted interviews, 13 interviews were prompted by displayed references to Mifflin, 14 were prompted by other non-Mifflin displayed references to alcohol use. Reviewing Facebook coding data for this sample, 38 (50%) had displayed about Mifflin on Facebook by 28 days after the event.

Displayed Mifflin references on Facebook

Among the participants who displayed references to Mifflin on Facebook, 18 (27.2%) displayed prior to Mifflin, 11 displayed the day of Mifflin (16.7%) and 19 (28.8%) displayed after the event. Some participants displayed in more than one time frame.

The mean number of displays was 4.5 (SD 7.4), with a median of 1, range of 1 to 37. References were displayed on Facebook in all areas of the profile, including status updates, pictures, likes/groups and events. Table 2 illustrates examples of such references.

Alcohol behaviors at the Mifflin Street Block Party

Among the 66 participants, 51 (77.2%) reported alcohol use in the past 28 days at the time of their interview. A total of 40 (60.6%) reported alcohol use on the day of the Mifflin Street Block Party. The mean number of drinks reported on the day of Mifflin was 8.8 (SD=6.1), with a range of 1 to 35. Among women, the mean number of drinks was 7.4 (SD 4.4) with a range of 1 to 20 while among men the mean was 12.3 (SD 8) with a range of 6 to 35.

Associations between Mifflin Facebook display and alcohol behavior at Mifflin

Displayed references to Mifflin on Facebook were positively associated with reporting alcohol use at Mifflin (OR=20.9, 95% CI 5.6–78.8). When examining these results stratified by gender, for both women (OR=32, 95% CI: 5.6–183.1) and men (OR=10.5, 95% CI: 1.3–81.1) the relationship was significant.

The number of displayed references to Mifflin on Facebook was also positively associated with the number of drinks reported at the Mifflin Street Block Party (B=5.4; 95% CI: 0.4–10.4). Examining this relationship by gender illustrated that for females, the relationship remained significant (B=5.5, 95% CI: .28=10.8). For males, this relationship was not significant (B=5.2, 95% CI: −6.7–17.1).

CONCLUSION

Findings from this study suggest that among our sample of first-year college students, references to Mifflin were displayed on Facebook in a variety of different multimedia formats including text, images and planning tools. Participants displayed Mifflin references before, on the day of, and following the event. These references were associated with a high likelihood of drinking on the day of the event, and increased references were associated with higher number of drinks reported.

Many participants displayed references to Mifflin in the month prior to the event. These references included responding to a Facebook event invitation and displaying text suggesting excitement about or anticipation of the event. A high prevalence of displayed Mifflin content prior to the event warrants concern and represents potential opportunity. One concern regarding Mifflin displays on Facebook pre-event is that these messages could raise awareness of this event and encourage other students to attend. Peers are well understood to be a source of influence among adolescents, including older adolescent college students.[21] At its most extreme, these peer displays could result in peer pressure to attend.

Mifflin references that were displayed prior to the event also represent an area of opportunity. It is possible that these references could be linked to prevention messages via Facebook advertisements. Advertisements on Facebook are triggered by keywords displayed on the profile. For example, displayed text references to terms such as “diet” will trigger advertisements for weight loss services displayed next to the profile. It is possible that universities could choose to place safety or prevention messages targeted to keywords such as “Mifflin” in the month leading up to this event. This approach would be limited in that it would only work for displayed text related to Mifflin, and would not provide linked messages tied to photographs which made up many Mifflin references in this study. However, it may provide a way to deliver targeted, inexpensive messages in a setting in which college students are discussing and making plans for Mifflin.

Before such efforts can move forward, a better understanding of what type of messages would be acceptable to the college population as “pop up” advertisements should be undertaken. In 2012, social media was used as a venue in which to spread messages directing students to avoid Mifflin. The “don’t go” YouTube video created by Dean of

Students Lori Berquam was altered into humorous versions set to music and spread virally, one video had over 80,000 views.[22] It is unclear whether these well-intentioned efforts were successful in deterring students from attendance at Mifflin.

Study findings illustrated that among female college students, an increasing number of references to Mifflin were positively associated with number of drinks reported on the day of Mifflin. This relationship was not significant among males. This may be related to gender differences in how, and how often, Facebook is accessed by females compared to males. Previous work has illustrated that women are more frequent social networking site users compared to men.[23] It is possible that if advertisements were created to disseminate prevention messages to students triggered by Mifflin displayed content, that these should be targeted by gender. Much is understood about the different motivations and expectancies that males and females have towards alcohol, so it is likely that this previous work could guide the creation of a gender-specific message.[7]

It is also important to note that the study participants represent first-year college students, all of whom were underage at the time of Mifflin. Approximately 60% of interviewed students reported alcohol use on the day of Mifflin. The heavy alcohol consumption reported by this group at this event is thus worrisome; the mean number of drinks reported was 9 which is well above standard definitions for a binge drinking event.[24] It is unclear what motivates these underage first-year students to attend this party. It is possible that after almost a year of experience at the University that some students have accepted the common social norm of the University of Wisconsin-Madison being a “party school.” UW Madison has repeatedly been in the top listed “party colleges” in the US.[25] This reputation, along with the reinforcement of this reputation through displayed alcohol references on Facebook such as the ones found in this study, could lead some first-year students to accept alcohol use as a normative and part of the college experience. Regardless of the motivations to attend, our study findings suggest that the event was attended by first-year college students, among whom drinking rates were high and the frequency of displayed references to Mifflin on Facebook were common.

Limitations to our study include a small sample size drawn from a larger study not explicitly designed to evaluate Facebook displays related to the Mifflin event. Though the participants in the larger study represent a random sample of undergraduates from UW Madison, this study included participants who had an interview within 28 days of the Mifflin event, which was not a random sample. However, these participants’ involvement in an ongoing study that included Facebook profile evaluation in the time period surrounding the Mifflin event, as well as use of a validated quantity/frequency measure (TiimeLine Follow Back) to assess alcohol use on the day of Mifflin provided an unique opportunity to use existing data to address an event of important local concern. Another limitation is that while we used the TimeLine Follow Back to achieve a validated measure of the number of drinks consumed on the day of Mifflin, we did not clarify with participants that their drinking took place at that event. Yet, given the numerous photographs displayed on Facebook at Mifflin it seems likely that many if not most of the participants who reported alcohol use on that day were in attendance at this event.

Despite these limitations, our small study suggests important implications. Facebook may present new opportunities for universities such as UW Madison to create prevention messages and target them to students displaying this content. These advertisements could be targeted at students, it is also possible that these study findings could be used towards educational messages directed at parents of these first-year students. Parents are increasingly on Facebook, and many are likely “friends” with their college student child.[26] This group

may be interested partners in reinforcing prevention messages if references to Mifflin are noted on their child's profile.

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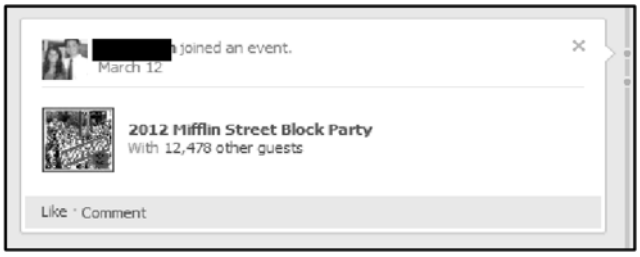
Table 1

Demographic information for participants

N=66	N (%)
Gender	
Female	45 (68.2%)
Male	21 (31.8%)
Ethnicity	
Caucasian/White	63 (96%)
Non-Caucasian/White	3 (4%)

Table 2

Examples of displayed Mifflin references on Facebook and estimated prevalence of these displayed in the time period of one month prior through one month after the Mifflin Street Block Party

Examples of Mifflin References		Estimated proportion of displayed Mifflin references
Status Updates	"Let Mifflin begin" "Here we go…MIFFLIN!!"	20.8%
Photos	 	66.7%
Likes/Groups		10.4%
Event*		2.1%

*Note regarding the Mifflin event function on Facebook: For this study we only included displayed Facebook references to Mifflin in the time period of one month prior to one month after Mifflin, however, many participants joined this event on Facebook months prior to that time period, so this number is likely a very conservative estimation, also illustrated by the 12,478 other guests who also joined this event noted in the screen shot.