

Recruiting U.S. and Canadian College Students via Social Media for Participation in a Web-Based Brief Intervention Study

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ABSTRACT. Objective: Recruiting young adults for health research is challenging. Social media provides wide access to potential research participants. We evaluated the feasibility of recruiting students via free message postings on Facebook and Twitter to participate in a web-based brief intervention study. The sample comprised students attending U.S. and Canadian universities. **Method:** During three semesters, institutional review board–approved recruitment messages were posted in 281 Facebook groups, 7 Facebook pages, and 27 message “tweets” on Twitter. **Results:** A total of 708 eligible participants were recruited from Facebook. The mean enrollment rate per Facebook group was 0.21%; the rate was higher for host university groups (1.56%) compared with groups at other universities (0.10%). We recruited seven participants from Twitter. The sample was predominantly female (70%) with a mean age of 20.0 years. There were no significant differences between host university

participants recruited through social media and traditional methods. The web-based intervention completion rate was 65%, and participants from the host university were more likely to complete the intervention than were groups at other universities ($p = .01$). **Conclusions:** Social media provides access to a large number of potential participants, and social media recruitment may be useful to researchers who can harness this broad reach. Facebook recruitment was feasible and free and resulted in a large number of enrolled participants. Social media recruitment for researchers at their own universities may be particularly fruitful. Despite wide access to students with Twitter, recruitment was slow. Social media recruitment allowed us to extend web-based intervention access to students in the United States and Canada. (*J. Stud. Alcohol Drugs*, 76, 127–132, 2015)

RECRUITING YOUNG ADULTS for health-based research has long been a challenge (Bost, 2005; Faden et al., 2004; Davies et al., 2000; Sixsmith et al., 2003). Barriers to recruiting college students include student schedules, participants not wanting to travel to research appointments, and lack of interest (Bost, 2005).

Web-based research studies are a potential solution to some of these barriers. Social media sites offer wide access to potential study participants and may facilitate participation in web-based research; however, social media recruitment has been underused in web-based brief alcohol intervention (WBI) studies. WBI studies have generally used traditional methods to recruit college students, including flyering (Hester et al., 2012; Voogt et al., 2013), getting referrals from university health/counseling centers (Denering & Spear, 2012; Kypri et al., 2004), and recruiting psychology course enrollees (Kulesza et al., 2013).

Some researchers have recruited participants through study invitation emails (Bendtsen et al., 2012; Ekman et al., 2011; Graham et al., 2008; Kypri et al., 2009; Lee et al., 2014; Martens et al., 2013; McCambridge et al., 2013; Palfai et al., 2014; Saitz et al., 2007). This recruitment method allows for wide reach to the university community; however, some institutional review boards (IRBs) may require participants to initiate contact with a study.

Surprisingly, recruiting college students to WBI studies using social media has not been reported in the literature. Social media websites are extensively used by college students. Researchers have found that 93%–99% of students sampled used Facebook (Roblyer et al., 2010; Sheldon, 2008; Sponcil & Gitimu, 2013), and 57% had accounts on multiple sites (Quan-Haase & Young, 2010).

Social media recruitment has been used for health behavior research using paid advertisements that target certain user profiles (Chu & Snider, 2013; Gordon et al., 2006; Graham et al., 2008; Ramo & Prochaska, 2012; Temple & Brown, 2011). Although advertising allows for wide reach to potential participants, recruiting with paid advertisements requires adequate financial resources. Advertising costs per study participant are relatively low (range: \$4.28 [Ramo & Prochaska, 2012] to \$20.00 [Fenner et al., 2012]), but the accumulated recruitment costs can be prohibitive for projects with small budgets and/or projects that require large samples.

Some researchers posted recruitment messages to online discussion websites (that were not part of Facebook/Twitter)

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as part of multifaceted recruitment (Quach et al., 2013; van Uden-Kraan et al., 2008). Posting recruitment messages on Facebook and Twitter has not previously been tested. This strategy is free of charge and allows for targeted recruitment of college students nationally and internationally. The purpose of the current study was to test the feasibility of recruiting college students in the United States and Canada through Facebook and Twitter to participate in a WBI study. Further, we investigated (a) whether host university participants recruited through social media and those recruited by traditional methods differed on demographic characteristics and baseline alcohol consumption and (b) what recruitment and demographic factors contributed to WBI completion.

Method

All social media recruitment techniques were approved by the host university's IRB. The posted recruitment text was also IRB approved.

The study was conducted completely online and allowed undergraduate students in the United States and Canada to participate. The purpose of the parent study was to test whether there was an additive effect of baseline research assessments to a WBI on participant alcohol consumption at 1-month follow-up. Participants were randomized to completed baseline research assessments and WBI or only the WBI. Eligibility criteria consisted of (a) being 18–26 years old, (b) being an undergraduate student in the U.S. or Canadian college/university, and (c) exceeding National Institute on Alcohol Abuse and Alcoholism (NIAAA) guidelines for low-risk drinking at least once in the past month (four [five] or more drinks in 1 day for women [men]).

Incentives were provided as follows: for completing the WBI, participants were entered in up to three drawings for an iPad mini; the sooner they signed up relative to our recruitment, the more drawings in which they were entered. For completing a 1-month follow-up survey, participants were entered in one of four \$500 Amazon.com gift card drawings.

Recruitment

Recruitment was conducted during the spring 2013, fall 2013, and spring 2014 semesters. No paid advertisements were used.

Facebook description

Messages were posted on Facebook pages and in Facebook groups. Facebook pages are created by an individual or institution about a specific topic, and messages can be posted by the administrator.

Facebook groups can be created by any individual or institution and consist of members who share the group

interest. Membership in open groups is available to the Facebook public. In closed groups, membership is only available to users who meet the group administrator's specified criteria.

Facebook recruitment

Recruitment was conducted by posting recruitment text to university-related open groups and pages. The following is the IRB-approved recruitment text posted on Facebook: "Help a University of Vermont research study test a brief online alcohol feedback program. It will take about 20–30 minutes to complete. For completing the program, you will be entered in up to three drawings to win a new iPad mini (the sooner you sign up relative to our recruitment, the more chances you have to win). You will also be asked to complete online assessments 1 month later, for which you will be entered into one of four drawings for a \$500 Amazon.com gift card. For more information and to participate, please visit the study website at www.uvmresearchstudy.org. For additional questions, please contact Tera at tfazzino@uvm.edu."

Initially, we posted in groups 7 days a week to determine the best times for recruitment. Monday and Tuesday evenings were observed to yield the highest number of participant enrollees compared with the other days of the week; therefore, we formed a recruitment schedule of Monday and Tuesday evenings between 7 P.M. and 10 P.M. in the group's time zone. The number of members in each group was systematically recorded in the third semester of recruitment, which allowed us to compute enrollment rate by group.

We posted to Facebook groups open to the public and where we were granted access by group administrators. Although we searched for many groups from different locations, our postings were largely based on which group administrators provided us access to their groups.

We sent private Facebook messages to U.S. and Canadian university page administrators asking them to post our recruitment text on their page. We selected a sample of page administrators based on their university's location and number of followers, with a preference for pages with large followings and universities from geographic areas not already represented in our sample.

Twitter

Twitter requires messages, called "tweets," to be 140 characters or less. Our IRB approved the following version of our recruitment text for Twitter: "UVM study of brief online alcohol feedback program. Incentives: entry into drawings for an iPad mini & \$500 Amazon gift cards. www.uvmresearchstudy.org." Recruitment consisted of tweeting recruitment text from individual accounts and asking followers to retweet the message.

Study website

The recruitment messages included a link to the study website information page, from which students could click a button to reach the consent. To consent, students could check a box indicating they were at least 18 years of age and then click the button confirming that they wanted to participate.

Consenting participants were directed to a screening page where they reported the highest number of drinks they consumed in a single day in the past month, with beer, wine, shots, and mixed drinks asked separately. The study website determined eligibility.

Eligible participants provided basic demographic information, the date they heard about the study, and the recruitment source from which they heard about the study, with the following answer options: flyer, student health center, university newsletter, Facebook, Twitter, or friend. Participants who completed the demographics information were automatically randomized and given a link to the research assessments/WBI.

All participants were sent an email 1 month following WBI completion with a request to complete the online follow-up questionnaire.

Traditional recruitment

Traditional recruitment was used at the host university and consisted of posting flyers in areas frequented by undergraduate students and listing the recruitment message in the university email newsletter. This allowed us to compare the success of both recruitment techniques at our host campus.

Communication with participants

Although most participants were recruited via social media, we only contacted them on their university email accounts that they provided when they enrolled. This protocol was in place to protect their confidentiality. If study participants contacted us using social media with questions after they enrolled, we responded by emailing their university account.

Web-based brief intervention

The WBI used in the current study was the eCHECKUP TO GO (e-CHUG), a commercially available brief intervention program for alcohol with demonstrated efficacy in a wide range of college students (Doumas & Andersen, 2009; Doumas et al., 2010, 2011; Hustad et al., 2010; Walters et al., 2007, 2009). E-CHUG collects information about student drinking and presents a personalized feedback report. The program takes about 20 minutes to complete.

Data analysis

Analyses were conducted using statistical program R (R Development Core Team, 2012). Participant enrollment rate by Facebook group was calculated by dividing the number of participants who enrolled from each university at the time of the posting by the corresponding Facebook group n .

Independent samples t tests and chi-square tests of independence were used to compare whether participants recruited through social media and traditional methods differed in age, gender, racial/ethnic minority status, and the highest number of drinks consumed in the past month at baseline.

Exploratory analyses were run to examine whether demographic and recruitment characteristics were associated with WBI completion. We evaluated whether gender, time point in which participants enrolled in the study, randomization group assignment, and host university attendance contributed to WBI completion rates using multiple logistic regression. The variable that represented the time in which participants enrolled was the day of the study year that participants signed up (1–365), with Day 1 being the first day of recruitment.

Results

Facebook

We posted recruitment messages to 281 Facebook student- and university-related groups. Group sizes ranged from 42 to 8,784 members. The total number of eligible participants recruited from Facebook was 708.

During the third recruitment semester, the number of members in each Facebook group was systematically recorded at the time we posted. That semester, we posted in 90 groups containing a mean of 1,714 members each. The mean enrollment rate was 0.21%. A substantially higher mean enrollment rate of 1.56% was observed from host university groups compared with non-host university groups (0.10%).

We sent 35 messages to Facebook page administrators at U.S. and Canadian universities with page topics on student health/resources. Five administrators (14%) posted our recruitment text. Two administrators requested that we post the message on their pages, and two declined to post. All Facebook page posts were made in the first two recruitment semesters.

Twitter

Four accounts tweeted eight recruitment messages and asked others to retweet the message to their followers. Nineteen accounts retweeted our recruitment text. The accounts that retweeted our recruitment text had a range of 54–1,000 followers each. The number of eligible participants recruited from Twitter was seven.

TABLE 1. Demographic characteristics of participants

Demographic characteristic	Value
Age, in years, <i>M</i> (<i>SD</i>)	20.00 (1.23)
Gender	Female = 70% Male = 30%
Year in school	Freshman = 11% Sophomore = 29% Junior = 36% Senior = 24%
Country in which attending college	United States = 80% Canada = 20%
Host university students	39% of total sample
Race, ethnicity	White, non-Hispanic = 82% Asian = 6% Black/African American = 2% Multiple races = 6% Hispanic = 4%

Participant flow and location

Potential participants ($N = 1,583$) enrolled by visiting the study website and consenting online. Most (86%; $n = 1,368$) completed the screen. Of those screened, 60% ($n = 816$) were eligible and enrolled. The majority of eligible participants (88%, $n = 715$) were recruited from social media. Of those, 80% were attending universities in the United States, and 20% were attending Canadian universities. Participants were from 30 U.S. states and 4 Canadian provinces. Locations with the highest number of participants were Vermont ($n = 321$), Ontario ($n = 109$), New York ($n = 46$), and Quebec ($n = 41$).

Demographics

Demographic characteristics of the sample are presented in Table 1. The mean highest number of drinks consumed in 1 day in the past month was 10.28 ($SD = 6.40$). For women, the mean highest was 9.11 (median = 7.5, $SD = 5.92$), and it was 12.84 for men (median = 11.00, $SD = 7.76$).

Host university recruitment

A total of 319 participants (39%) were from the host university. A comparison of host university students recruited through social media with those recruited through traditional strategies is presented in Table 2.

Web-based brief alcohol intervention study completion rate

The rate of WBI completion among study participants was 65%. Results of the multiple logistic regression revealed

TABLE 2. Comparison of host university participants recruited through social media and traditional methods

Demographic characteristic	Recruits from social media	Recruits from traditional methods	<i>p</i>
Gender, % female	70%	69%	.90
Mean age, in years	20.3	19.9	.07
Race, % White	91%	91%	.89
Baseline highest number of drinks consumed in the past month	9.5	9.2	.69
Web-based intervention completion	71%	86%	.01

Note: Two-tailed independent samples *t* tests were conducted for continuous variables, and chi-square tests of independence were conducted for dichotomous variables.

that host university participants were significantly more likely to complete the WBI than those who were attending other universities, when we controlled for randomization group, gender, recruitment method, and the day of the study year participants enrolled (74% vs. 59%; OR = 1.63, 95% CI [1.17, 2.29], $p = .01$). Participants in the WBI-only control group were significantly more likely to complete the WBI (74% vs. 54%; OR = 2.52, 95% CI [1.88, 3.39], $p = .0001$). Day of enrollment and gender did not significantly predict WBI completion when controlling for covariates (gender: OR = 0.89, 95% CI [0.65, 1.22], $p = .46$; day: OR = 0.999, 95% CI [0.997, 1.001], $p = .16$).

Discussion

The purpose of the current study was to test the feasibility of recruiting participants via social media sites Facebook and Twitter to participate in a WBI study. Exploratory analyses were conducted to compare those recruited through social media with participants recruited through traditional methods and to determine what factors were associated with the likelihood of WBI completion. Recruitment using social media allowed us to expand WBI access to a large number of undergraduate college students in the United States and Canada. Recruiting was completely free of charge.

Facebook recruitment yielded a large number of eligible participants who enrolled. Although the mean enrollment rate per group was low (0.21%), we had access to thousands of students, which resulted in a large study *N*.

Twitter recruitment resulted in a low number of enrolled participants. The striking difference in participant yield from Facebook versus Twitter was likely attributable to the pace of message posting on these sites; posting frequency on Facebook is much slower than Twitter. A message posted on Facebook would likely be seen by a user one to several days after the post; a tweet would likely only be viewed by users looking at their feed immediately following the tweet. It may be necessary for researchers to name specific accounts when

requesting retweets, a technique that O'Connor et al. (2013) recently used with success.

The majority of the study sample recruited through social media was female (70%) and White (82%). Our female enrollment rate was higher than that of some other WBI studies (e.g., 57%: Doumas et al., 2010; 51%: Hustad et al., 2010; 48%: Walters et al., 2007). It is not clear whether the higher rate of female participation was a function of recruitment method or some other factor. The vast majority of college student samples (both men and women) have reported having a Facebook account (Sheldon, 2008), but recent research has demonstrated that those who use Facebook are significantly more likely to be White women (Wells & Link, 2014). However, in this study, there were no significant demographic differences between those recruited from traditional methods versus social media at the host university. More research is needed to determine whether the bias in the sample is characteristic of those recruited from Facebook or may be random and sample specific.

The percentage of consenting participants who reported on the eligibility screen that they exceeded NIAAA guidelines for low-risk drinking at least once in the past month was higher (60%) than rates documented in nationally representative surveys of college student alcohol use (44%; Wechsler et al., 1998, 2000, 2002). The study asked about past-month alcohol use, whereas the national surveys asked about the past 2 weeks; the difference in reporting periods may have contributed to higher eligibility rates in the current sample. It is also possible that heavy drinkers are more willing to volunteer for an online alcohol study than their lighter drinking peers; the recruitment strategy may have attracted a higher proportion of heavy drinkers than the national samples.

Sixty-five percent of enrolled participants completed the WBI. This was relatively high compared with other online survey research (Chu & Snider, 2013; Fenner et al., 2012; Koo & Skinner, 2005). The majority of WBI efficacy studies do not report WBI completion rates; however, the rates in the current study are lower than those who did provide this information (100%; Hester et al., 2012; Kypri et al., 2004; Walters et al., 2007). The discrepancy may be that students in the current study were not required by their universities to participate and did not receive monetary rewards for participating (only entry into drawings). Also, the study's control condition required less time because it did not include research assessments. Not surprisingly, control participants completed the intervention at substantially higher rates than those in the experimental condition. Host university participants were more likely to complete the WBI than non-host university students, suggesting that social media recruitment may be particularly advantageous for researchers when used at their own universities.

A limitation of the study was that only eligible participants were asked where they heard about the study. Also, it

was only during the third semester of recruitment that we systematically recorded the number of members in each group. We did not recognize the value of computing participant enrollment rate per Facebook group until after the second semester when the strength of the response through Facebook was evident. We were unable to retrospectively obtain data from Facebook on the size of each group at the time of our recruitment posts. However, all Facebook page posts were done in the first two semesters of recruitment only, which allowed us to determine the success of Facebook postings alone in the third semester.

Implications

Social media provides access to a large number of potential participants, and social media recruitment may be useful to researchers who can harness this broad reach. Recruiting via free message posts on Facebook is feasible and was successfully used to expand WBI access to students at universities in the United States and Canada. Twitter has potential as a recruitment tool because it also provides wide access to a large number of students; however, a different strategy is required than simply tweeting recruitment messages.

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