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## A Night to Remember: A Harm-Reduction Birthday Card Intervention Reduces High-Risk Drinking During 21st Birthday Celebrations

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### Abstract

**Objective**—In collaboration with Residence Life, the Heads UP research team developed a 21st birthday card program to help reduce the risky drinking often associated with these celebrations.

**Participants**—81 students (28 males, 53 females) completed a post-21st birthday survey. Of these, 74 reported drinking during their 21st birthday and were included in the analyses.

**Methods**—During the 2005–2006 school year, the authors assigned students celebrating 21st birthdays to either receive an alcohol risk-reduction birthday card or to a no-card condition. The students completed a survey after their birthday.

**Results**—Students who received the card consumed fewer drinks and reached lower blood alcohol content (BAC) levels on their birthday than did students who did not receive it. Female students who received the card consumed 40% fewer drinks and reached nearly 50% lower BAC levels than women who did not receive it.

**Conclusion**—This program is easily replicated, inexpensive, and may be used by universities to reduce risk related to celebratory alcohol consumption.

### Keywords

alcohol; birthday card; celebration drinking; college students; harm reduction; intervention; 21st birthday

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College students frequently report that the celebration of special events is one of the most important reasons to drink alcohol.<sup>1,2</sup> These celebratory occasions such as sporting events, holidays, graduation, home-coming, spring break, and birthdays often involve hazardous and sometimes fatal levels of alcohol consumption. In particular, the 21st birthday marks a transition to the legal age for drinking, and, as such, alcohol consumption is often considered a rite of passage during these events.<sup>3</sup> In a study investigating the prevalence of acute alcohol intoxication during 21st birthday celebrations, Neighbors and colleagues<sup>4</sup> found that 90.3% of students reported drinking alcohol, and 72.3% engaged in drinking behaviors that could be categorized as heavy episodic drinking (4 [for females] and 5 [for males] or more

drinks in a 2-hour period). More alarming, 1 in 4 students had achieved blood alcohol content (BAC) levels that frequently result in blackouts, coma, and death.

As a result, some colleges have initiated risk-prevention efforts such as 21st birthday card campaigns in which cards containing alcohol information, social norms, or responsible drinking messages are mailed to students with upcoming birthdays. The most widely used of these campaigns is the Be Responsible About Drinking (BRAD) card, which was inspired by the death of Michigan State student Bradley McCue, who died of alcohol poisoning on his 21st birthday. The BRAD card tells Bradley's story as a cautionary tale that provides information on the symptoms of alcohol poisoning and offers a reminder to celebrate responsibly. Although more than 100 institutions have distributed BRAD cards, research on its effectiveness has shown mixed results.<sup>1,5</sup> Evaluation of other 21st birthday card campaigns has been hindered by methodological limitations, most notably a lack of adequate comparison groups.<sup>5</sup> As a consequence, student health administrators in search of effective and empirically tested 21st birthday card campaigns have been met with limited data. Therefore, the present investigation aims to develop and test the efficacy of a harm-reduction 21st birthday card campaign in order to reduce risky drinking. We hypothesized that students receiving a 21st birthday card will drink at more moderate levels than will those who do not receive the birthday card.

## METHODS

The 21st birthday card program was inspired by a student resident advisor (RA) who came to Heads UP with an idea to create a 21st birthday card campaign for fellow students. Heads UP serves as the alcohol prevention and evaluation arm of the university and works campus-wide to raise alcohol awareness and prevent risky drinking.<sup>6</sup> The team administers and participates in various campus activities and programs during the academic year, such as social-norms feedback sessions in residence halls, dormitory poster campaigns, and clinical interventions mandated by Judicial Affairs. In addition, Heads UP continues to have a positive presence on campus by attending campus-community events as well as maintaining an easily approachable team and readily available resources.

The RA proposed ideas for a 21st birthday card that would contain an effective harm-reduction message that would be well received by the students. In an attempt to prevent immediate dismissal by students who planned on drinking during their celebration, the card did not promote 100% abstinence, but rather it encouraged moderate consumption for those who chose to drink. Consistent with the Heads UP program's ideals and objectives, it also provided helpful tips and protective behavioral strategies in hopes of reducing risky drinking during this event.

To evaluate the efficacy of the birthday card program, we piloted this program with students of 4 residence halls on campus. The local Institutional Review Board (IRB) approved this pilot study, and students in 2 residence halls were randomly chosen to receive the birthday card ( $n = 88$ ), with students in the other 2 serving as a comparison group that did not receive birthday cards ( $n = 104$ ). One week following their birthday, all students received an e-mail requesting their participation in a survey regarding their 21st birthday celebration. First, the

students received an IRB-approved informed consent form, which they electronically signed. Next, the survey assessed drinking behaviors during their 21st birthday celebration, such as the decision to drink or not, the quantity of alcohol consumed, and the amount of time spent drinking. To ensure that each student fully understood the operational definition of a standard drink, the survey included a chart detailing the amount in ounces of beer, wine, and liquor that equal a standard drink. It also included examples of how many standard drinks compose certain cocktails, such as margaritas or Long Island iced teas.

The front of the birthday card read, “Happy 21st Birthday! Make it a night to remember.” The inside of the card contained 8 location-specific ideas for celebrating a 21st birthday that were unrelated to drinking. Examples included seeing a movie at a nearby theater or attending a local team’s soccer game. The inside of the card also listed “10 Tips to Party Smart” for those students who planned to consume alcohol. Examples included “sip your drink,” “skip a drink now and then,” and “accept a drink only when you really want one.” The back of the card contained a campus-specific drinking norm, “18% of LMU students drink 5 or less drinks during a typical night of drinking/ partying. Where do you fit in?” (See the Appendix.) As social norms have been found to be among the strongest predictors of alcohol consumption by college students,<sup>7</sup> social normative information was included in an attempt to reduce misperceptions the students might have held about college drinking and partying and, thus, to decrease consumption. The card was embossed by Heads UP and Student Housing. Further, each card included a personal note from the individual’s respective RA.

## RESULTS

Of the 192 students included in the study, 81 (42%; 28 males, 53 females) completed the survey. Further, 39 of the 88 (44%) students who received a card (intervention condition) completed the survey, whereas 42 of the 104 (41%) students who did not receive a card (control condition) completed the survey. Seventy-four of the respondents (23 males, 51 females) reported consuming alcohol during their 21st birthday celebration and were included in the subsequent drinking analyses (see Figure 1).

Overall, there were significant differences between those students who received the card and those who did not regarding number of drinks consumed,  $F(1, 72) = 4.37, p < .05$ , and BAC level,  $F(1, 72) = 6.53, p < .05$ . Specifically, male students who received the birthday card reported consuming 23.4% fewer drinks (8.58 drinks vs 11.19 drinks) and had a 22.1% lower BAC level (.14% vs .18%) than did male students who did not receive the card. Females receiving the card experienced even greater reductions, consuming 40.2% fewer drinks (4.07 drinks vs 6.80 drinks) and reaching a 46.4% lower BAC level (.08% vs .17%), than did females who did not receive the card. It is interesting that 6 of the 7 students who chose not to drink on their 21st birthday were in the intervention group. Although this sample is small, it suggests that the intervention may have had some effect on students’ decision to drink, and it may warrant further implementation and evaluation.

## COMMENT

Our 21st birthday card program combined several components to create an innovative and effective card that differentiated it from other interventions. It incorporated a social norms statistic, provided ideas for birthday activities unrelated to alcohol, and suggested protective behavioral strategies for drinking moderately in the event that the student decided to drink.

Overall, students who received the card drank less and reached lower BAC levels than did those who did not receive the card. In all, 61% of students who did not receive the card achieved BACs above .15%, which is often associated with nausea/vomiting, impaired judgment, and blackouts. Furthermore, of those who exceeded that BAC, 23% exceeded a .25% BAC level, at which point severe sensory and motor impairment, comas, and even death by respiratory arrest can occur. In contrast, among students receiving the card, only 27% overall exceeded .15%, and only 8% drank to a BAC of .25%. This 21st birthday card not only reduced alcohol consumption, but most likely contributed to reductions in the alcohol-related negative effects associated with extreme BAC levels. Given that innate physiological differences place women at a greater risk for alcohol-related negative consequences at equivalent BAC levels than men, our finding of greater effectiveness in women is noteworthy. Although it is possible that this result was due to the relatively low number of males who took the follow-up survey, the finding is consistent with Grizzell<sup>8</sup> and suggests the need for future investigations to test whether these birthday card interventions are more effective for women than for men and, if this is the case, to devise ways of engaging men more effectively.

Our findings are tempered by certain limitations. First, although the response rate was consistent with response rates of other online surveys, many students who received cards or were in the control condition did not complete the post-21st birthday survey. The results might be more believable if more students had completed the survey. Additionally, the survey relied on student self-report, which might be prone to underreporting, especially with regard to major celebrations. However, previous research has shown that self-reports<sup>9</sup> are reliable and valid indicators of current alcohol use in college students. Future research might explore whether students can accurately report on their drinking behavior during major celebrations. Further, the card was created collaboratively by an RA and Heads UP staff without student input and included both harm-reduction and social norms information. Future birthday card programs may wish to utilize student focus groups to come up with messaging that is even more salient to students than the present card.

In conclusion, the overall efficacy of the card was most likely strengthened by the fundamental interrelationship among Heads UP, Resident Life, and the student population. Heads UP helped to craft an effective harm-reduction message. The personal note from each student's RA may also have helped to make the students more receptive to the message. The card is also cost-effective; each card costs less than \$.50 to create and can be produced in little time. Efficiency may be further improved through the use of electronically delivered e-cards, which could be created quickly, require no postage, and may reach more students than would traditional mail, although future research will need to investigate the efficacy of these cards. In the meantime, we encourage other universities to use this 21st birthday card

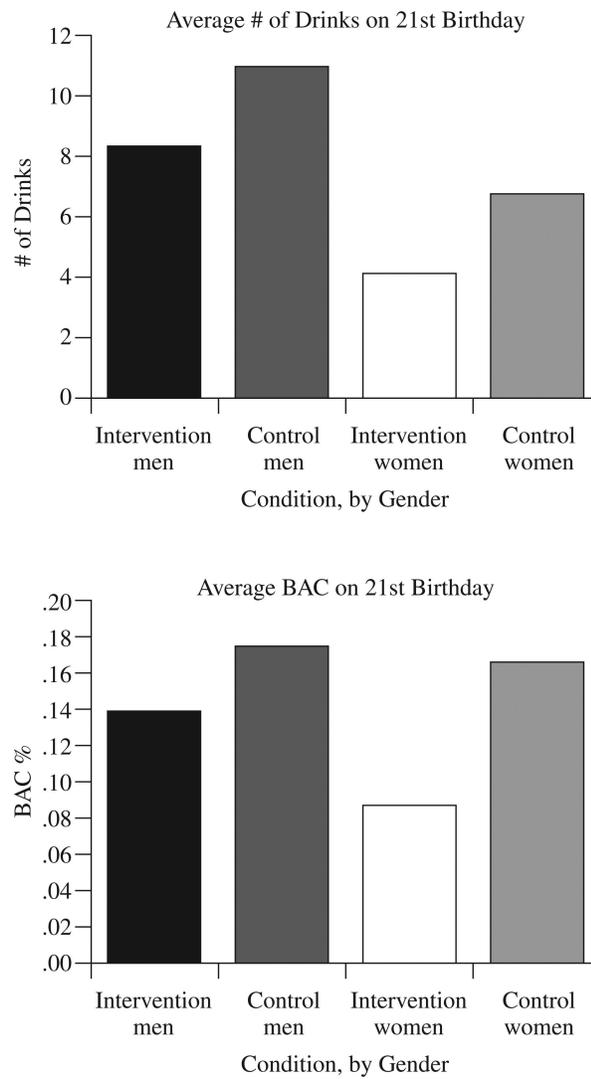
program because it is easily replicated, inexpensive, requires little effort, and has demonstrated success at reducing alcohol consumption among college students during the high-risk event of 21st birthday celebrations.

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**FIGURE 1.** Average number of drinks and percentage of blood alcohol content (BAC) on 21st birthday celebrations.