Research News Report

"Textsperimenting": A Norms-Based Intervention for College Binge Drinking

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Introduction

      Binge drinking among college students, and its related risky behaviors, have become a source of increasing concern for faculty and administrators across the country (Wechsler, Moeykens, Davenport, Castillo, & Hansen, 1995; Wechsler, Molnar, Davenport, & Baer, 1999). The statistics are truly sobering: every year binge drinking is associated with 1,700 deaths, 599,000 injuries, 696,000 assaults, 97,000 sexual assaults, 400,000 reports of unsafe sexual activity, and adverse academic consequences for 25% of college students (Hingson, Heeren, Zakocs, Kopstein & Wechsler, 2002). Effective interventions to reduce these behaviors, however, have remained elusive. Finding such interventions is difficult given the myriad factors that influence an individual's drinking habits, including genetic and biological predispositions, anticipated positive outcomes associated with drinking, accessibility, and experiences of parental and peer use. By the time young adults reach college, many of these factors are highly resistant to change. One influence that remains malleable, and therefore represents a promising target for intervention, is a person's perception of drinking norms. Norms are the beliefs people hold about what they perceive as normal or expected behavior. While norms are formed based on information from many sources, such as the media's portrayal of college drinking, peer behaviors are often the most powerful influence on a person's perception of normative behavior. Interestingly, studies have shown that college students consistently overestimate the alcohol use of their peers, and that the actual frequency and quantity of drinking among college students is much less than the perceived norm (Martens et al., 2010). Research also shows that a positive correlation exists between actual behaviors and perceived peer norms; therefore, if students perceive binge drinking as the norm at their school, they are more likely to engage in binge drinking themselves. The purpose of a norms-based intervention is to highlight the discrepancy between perceived norms and actual behaviors, which can cause individuals to reassess their own behavior. Because drinking norms have a direct impact on alcohol usage, making

students aware of the actual—and more modest—drinking habits of their peers can be a powerful tool in reducing binge drinking.
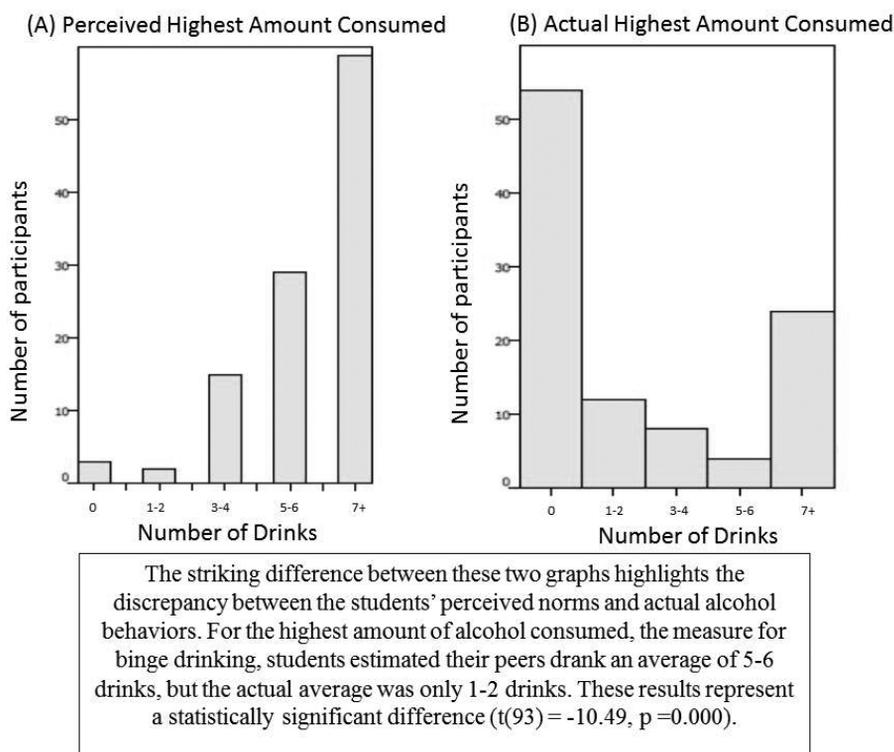
Study

During the fall 2013 semester, the Methodist University Psychology Club designed an intervention to reduce binge drinking among the incoming freshmen class. The student researchers who designed and conducted the experiment were Chelsea Smith, Lindsay Stinson, and Rebekah Thompson. The intervention combined traditional norms-based intervention techniques with current technology. Using a smart phone application called Socrative Student Clicker, the researchers surveyed students on both their beliefs about peer drinking norms and their own actual alcohol usage, and then compared the results. During the intervention, the participants answered survey questions on their phones using the Socrative app, and that data was instantly displayed
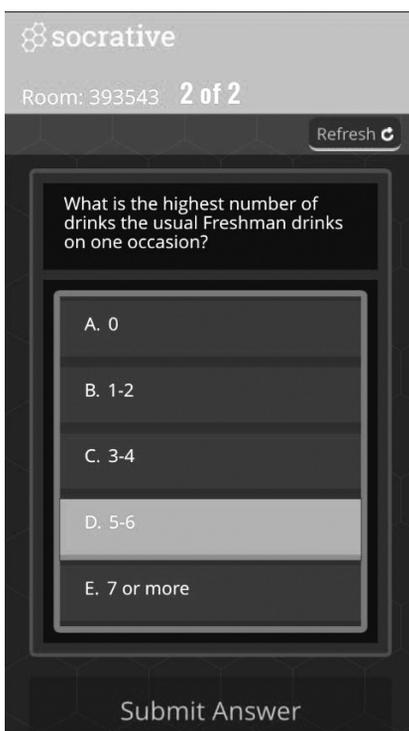
as a live bar graph that changed and grew in real time as their answers streamed in. This created an interactive environment that was highly engaging to participants and provided them with immediate, personalized feedback on the questions being asked. While the effectiveness of norms-based interventions has been debated by some (Wechsler et al., 2003), research has shown that those interventions that provide participants with personalized feedback are the most successful (Martens et al., 2010; Bewick, Trusler, Mulhern, Barkham, & Hill, 2008).

The "textsperiment" itself was divided into two sets of three questions. Participants were asked to measure (a) frequency of alcohol usage in days per week, (b)

highest amount of alcohol consumed on any one occasion, which served as the measure for binge drinking, and (c) usual amount of alcohol consumed on any one occasion. During the first set of questions participants were asked to answer based on the behavior of their peers, or how much and how frequently they thought the "average" college freshman drank. Once that data was collected and displayed via live bar graphs, participants were asked the same three questions again but were told to answer based on their own actual alcohol usage over the past week. The students were surprised to see how greatly the graphs of their perceived peer norms and their actual alcohol consumption differed. Indeed, not only did the participants overestimate the alcohol use of their peers, but statistically significant differences were found between the students' perceived norms and their actual behaviors on all three measures. The textsperiment

(A) Perceived Highest Amount Consumed   (B) Actual Highest Amount Consumed

The striking difference between these two graphs highlights the discrepancy between the students' perceived norms and actual alcohol behaviors. For the highest amount of alcohol consumed, the measure for binge drinking, students estimated their peers drank an average of 5-6 drinks, but the actual average was only 1-2 drinks. These results represent a statistically significant difference ($t(93) = -10.49$, $p = 0.000$).

was then followed up with an email survey one month later that collected data on the same three measures from a total of 195 freshman, including students who did not participate in the intervention.

Results

The effectiveness of the textsperiment intervention can be seen in both the change in behavior of participants after the intervention, as well as the difference in behaviors between those who attended the intervention and those who did not. After comparing the data from attendees at Time 1, which was the data collected during the intervention, and Time 2, which was the follow-up survey given one month later, the

researchers found a statistically significant reduction in drinking in all three measures among study participants. This means that students who attended the intervention exhibited reductions in both the frequency and the amount of alcohol they consumed. While this suggests that the intervention was successful, it was also possible that non-attendees had similar reductions in drinking over the same period of time due to some third variable, such as academic pressures. Therefore, the researchers also went through the survey data to compare the drinking habits of attendees and non-attendees at Time 2, after the intervention. A finding of a significant difference between the drinking habits of the two groups would provide even more compelling evidence that the intervention was effective in causing a reduction in binge-drinking behaviors for attendees.

When the researchers compared the survey answers of attendees and non-attendees, they found a statistically significant difference in frequency, with attendees drinking less frequently than non-attendees (0-1 days per week for attendees vs. 1-2 days per week for non-attendees). No statistically significant difference between the two groups was found for the highest amount of alcohol consumed, which was the measure for binge drinking. There was, however, a strong trend toward significance, with attendees drinking much less (1-2 drinks) than non-attendees (5-6 drinks). This finding suggests that the intervention was in fact successful in reducing binge drinking, and that statistical significance would have been achieved if only the sample size had been larger. Finally, no statistically significant difference was found between the two groups for the usual amount of alcohol consumed. Unlike the measure for the highest amount of alcohol consumed, however, there was very little difference between the two groups, with both attendees and non-attendees drinking an average of 1-2 drinks per week. This

Attendees Vs. Non-Attendees	T scores
Frequency	$t(198) = -2.26$, $p = 0.03$*
Highest	$t(198) = -1.89$, $p = 0.06$
Usual	$t(198) = -.79$, $p = 0.43$
Time 1 vs. Time 2 for Attendees	
Frequency	$t(157) = 2.87$, $p = 0.005$**
Highest	$t(152) = 2.16$, $p = 0.03$*
Usual	$t(159) = 2.08$, $p = 0.04$*

* = $p < 0.05$, ** = $p < 0.01$

Although both the highest and usual amounts of alcohol consumed failed to meet statistical significance ($p < 0.05$) for the attendees vs. non-attendees, the highest amount consumed ($p = 0.06$) was considerably closer to reaching significance than the usual amount consumed ($p = 0.43$), illustrating how binge drinking was specifically targeted.

suggests that responsible drinking behaviors, or the consumption of small amounts of alcohol, were not affected by the intervention. It is important to note that the purpose of the intervention was not to eliminate drinking altogether, but to encourage responsible drinking behaviors by decreasing binge drinking and excessive alcohol consumption. The fact that the highest amount of alcohol consumed was reduced for attendees compared to non-attendees, while the usual amount of alcohol consumed remained approximately the same between the two groups, shows that the intervention was successful in specifically targeting binge drinking versus responsible drinking behaviors, thus accomplishing its goal.

Conclusion

Based on the data analysis comparing the drinking behaviors of, first, attendees at Time 1 versus Time 2 and, second, attendees versus non-attendees, the researchers conclude that the textsperiment was a successful intervention for reducing college binge drinking. Indeed, the results were so compelling that the university asked the MU Psychology Club to perform the textsperiment again during the fall 2014 semester as part of the freshman class orientation program.

What is remarkable about this study is that the researchers were able to affect measurable change in students' drinking behaviors—changes that continued even 30 days later—with an intervention that lasted less than 30 minutes. The success of this intervention highlights the powerful effect of perceived peer norms on students' behavior, the ability to change those norms to make them more realistic, and the promising application of interactive technology as a platform for norms-based interventions.

References

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