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Social Norms Approaches Using Descriptive Drinking Norms Education: A Review of the Research on Personalized Normative Feedback

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Abstract

College students have been shown to consistently overestimate the drinking of their peers. As a result, social norms approaches are effective in correcting these misperceived norms to reduce alcohol consumption and alcohol-related problems. In this review of literature, the authors critically evaluated the effectiveness of personalized normative feedback. In addition, the authors reviewed personalized normative feedback interventions and provided suggestions for increasing the efficacy of these interventions by making better use of salient referent group data.

Keywords

alcohol; binge drinking; college students; social norms

Alcohol consumption among college students has been an area of extensive concern, largely based on widespread problems associated with college student drinking. Heavy-episodic drinkers (women who consume 4 or more drinks per occasion and men who consume 5 or more drinks per occasion), who consume up to 68% of all alcohol that students report drinking, account for most of these alcohol-related problems.[1] As a result, heavy-episodic drinking is of particular concern because it is associated with more negative consequences compared with drinking in general.[2]

We conducted a thorough literature search on social norms approaches by using PsycINFO (http://www.apa.org/psycinfo/), a psychology database collection. We included all published peer-reviewed articles that addressed personalized normative feedback approaches in college populations. In this review, we critically evaluated the effectiveness of personalized normative feedback in reducing alcohol consumption and alcohol-related problems among college students. Although social marketing approaches are often used, the focus of our review was personalized normative feedback. We also provide suggestions on how personalized normative feedback interventions can be made more effective.

SOCIAL NORMS INTERVENTIONS

One theory regarding the widespread use of alcohol among college students involves misperceptions of peer drinking norms. For the purposes of this review, we focused primarily on descriptive drinking norms. [3] Descriptive norms describe actual behavior rather than beliefs

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about others, approval or disapproval of behavior. A large number of studies have demonstrated that college students misperceive peer drinking norms. [4-6] College students specifically tend to overestimate heavy alcohol consumption by their peers.[5] Misperception of peer drinking among college students has been suggested as a causal factor of heavy drinking; as a result, a number of interventions seek to change misperceptions of peer drinking norms.[7-9] Social norms interventions can be divided into 2 general categories: social marketing and personalized normative feedback.

Social Marketing

Social marketing approaches provide actual drinking norms to college students using advertisements, flyers, posters, and e-mail messages. It is a universal, mass communication method for educating students about actual drinking norms. There is equivocal support for the effectiveness of social marketing approaches. For instance, a number of studies have suggested that social norms marketing is effective in reducing perceived norms as well as in reducing the proportion of students who report heavy drinking.[10-12] Other researchers report that social marketing approaches require further evaluation[13] and that this approach is not effective. [14, 15] Given that changes in drinking appear to be directly tied to changes in perceived norms, social marketing campaigns are likely to be successful to the extent that they correct normative misperceptions.[12]

Although there is mixed support for social marketing, this approach has the advantage of reaching a large segment of students at low cost. However, this approach is limited by being relatively impersonal and by assuming that students will both see and carefully process the information. For instance, social marketing is limited because it does not require students to make direct comparisons of actual drinking norms and perceived drinking norms. Also, students may not associate the norms information with their own drinking behavior. Interventions that personalize normative information and make certain that students receive the information are likely to be more effective in reducing heavy drinking behaviors.

Personalized Normative Feedback

Like social marketing, personalized normative feedback approaches use information designed to correct normative misperceptions to reduce heavy drinking. Based on this, personalized normative feedback has a few initial requirements. If personalized normative feedback is theoretically based on the premise of correcting normative misperceptions, then these misperceptions must be present. Three pieces of information are necessary when providing personalized normative feedback: information about a student's own drinking, information about the student's perceptions of others' drinking, and information about others' actual drinking. The presentation of this information is designed to change students' perceptions of "normal" drinking by exposing their misperceptions of the norm as well as by comparing their behavior with "normal" behavior. In contrast to social marketing interventions, normative feedback that is personalized and presented individually is likely to have a greater impact because it is more salient[3] and explicit in revealing discrepancies among individual behavior, perceived "typical" student behavior, and actual "typical" student behavior.

Multiple Components Versus Single Component Interventions

One of the methodological problems associated with personalized normative feedback is that prior intervention research has included additional components without evaluating the efficacy of each individual component (in this case, personalized normative feedback). Several researchers have purported that evaluating personalized normative feedback is an individual component intervention.[7-9-16] However, these studies have almost always included 1 or more other intervention components (eg, review of risk factors, such as family-history, review of negative consequences, expectancy challenge, and blood alcohol content [BAC] information)

without evaluating the effectiveness of single components. For example, the research of Agostinelli and colleagues[7] is often cited as evidence for the efficacy of personalized normative feedback. However, the feedback in this study also included information about personal risk as a function of tolerance and family history. Walters's[16] research has been referenced as a test of normative feedback, but the feedback also included didactic information regarding BAC, tolerance, and their relationships to risk. The work of Nye and colleagues[9] is 1 of the only examples not confounding normative feedback with other intervention components. However, in this study, the researchers measured alcohol problem recognition outcomes immediately after presenting normative feedback and therefore did not assess actual changes in behavior. Finally, Neighbors and colleagues [8] demonstrated that personalized normative feedback alone is sufficient to measurably reduce drinking behavior among heavy drinking college students for up to 6 months. In sum, research is needed to decompose and evaluate the unique contributions of other specific components in personalized normative feedback interventions.

Duration of Effects

The duration of effects of personalized normative feedback is currently unclear. Interventions including personalized normative feedback vary widely in timing and number of follow-up sessions employed in the study. Follow-up assessments vary from a few weeks[7,17] to several months after the initial intervention.[8-18,19] Furthermore, duration of effects may vary depending upon the targeted group of students (ie, heavy-drinking students, Greek members, athletes, etc) and which referent (ie, average student, gender-specific, etc) was employed in the study.[6,20]

TARGETS OF SOCIAL NORMS INTERVENTIONS

College students are the main target of social norms approaches as well as the main group used to assess the influence of norms on personal alcohol use. [21] The population of college students can be further broken down into several more specific targets of social norms interventions, such as Greek members, moderate to heavy drinkers, athletes, and freshmen.

High-Risk Drinkers

Prior research has shown that those students who engage in heavy-episodic drinking consume a considerably larger amount of alcohol (M = 17.9 drinks per week, SD = 15) compared with those students who infrequently engage in heavy-episodic drinking (M = 4.8 drinks per week, SD = 9.5) and with those students who do not engage in heavy-episodic drinking (M = .8 drinks per week, SD = 1.7).[1] Many interventions target moderate to heavy drinkers,[7,8,16] not only because they drink more heavily, but also because those students are more likely to have negative consequences from alcohol.

Greek Members—Students who belong to fraternities or sororities have higher heavy-episodic drinking rates than nonmembers.[19] In addition, members of a fraternity or sorority who live in the Greek house display higher rates of heavy-episodic drinking compared to members who live elsewhere.[22] The prevalence of drinking among Greek members also makes them a primary target for social norms interventions.

Dormitory Residents and Freshmen—Previous research has indicated that students aged 18–25 years and of all class levels are more likely to drink more heavily if they live in dormitories.[23] A majority of students who live in college dormitories are freshmen, and, on average, students entering college show increases in alcohol consumption. [24] These findings suggest that freshmen who live in dormitories are at higher risk for alcohol consumption and negative consequences of alcohol. As a result, this group of college students has previously been targeted by social norms interventions. [17]

Athletes—Athletes are a target of social norms interventions because previous research has shown that college students involved in athletics drink more than those not involved in athletics.[25] For example, Wechsler and colleagues [25] found that 29% of male and 24% of female college students involved in athletics engaged in heavy-episodic drinking 3 or more times in the previous 2 weeks and that 26% of male and 22% of female college students partly involved in athletics engaged in heavy-episodic drinking 3 or more times in the previous 2 weeks. This is in comparison with 18% of male and 15% of female college students not involved in athletics who engaged in heavy-episodic drinking 3 or more times in the previous 2 weeks. In this study, students defined as involved were those who spent 1 or more hours per day being active in intercollegiate sports and who thought participation in athletics was important. Students defined as partly involved were those who spent 1 or more hours per day being active in intercollegiate sports or who thought participation in athletics was important. In sum, targets of social norms interventions are generally moderate to heavy drinkers who are at higher risk for negative consequences of alcohol consumption.

REFERENTS OF SOCIAL NORMS INTERVENTIONS

Normative feedback interventions typically frame normative information by presenting actual norms for the "average" student on campus.[26] National norms[16] or campus norms [26] are provided to encourage students to compare their drinking with the drinking of the average or typical college student. The average or typical college student norms are the combined average drinking norms for male and female college students. But the "average" student may not be the ideal normative referent. Feedback that focuses on the typical student is more distal compared with feedback that is more specific (ie, best friends' drinking). More proximal, relevant referents may have stronger influence on drinking attitudes and drinking behaviors,[4,27,28] compared with more distal referents. As suggested by Keeling,[29] college students may better identify with those students who are similar to them than with the typical college student.

Proximal Versus Distal Referents

In general, more specific reference groups are likely to have stronger influence on behavior. According to Social Comparison Theory [30] and Social Impact Theory,[31] proximal comparison groups are more relevant and have greater influence than more distal comparison targets. In addition, relevant attitudes are better predictors of behavior [32] than are attitudes toward a general concept.[33] Prior research has also shown that people are more influenced by in-group than out-group sources.[34] In-group sources are more central to students' identities. This does not imply, however, that a more specific reference in normative feedback will necessarily be better for all groups of students because the degree of misperception is likely to be attenuated among more proximal referent groups. Normative feedback can become more proximal or more in-group for college students in several ways. For example, referents can be close friends, gender specific, group specific, or age specific.

Close Friends-Specific Feedback—Previous researchers have demonstrated that perceptions of close friends' or best friends' drinking are more salient to college students and are better predictors of alcohol consumption than are perceptions of typical student drinking norms.[27] However, Baer and Carney[35] did not find misperceptions of best friends' drinking. Although research has shown that the relative influence of close or best friends' drinking is large, additional research has demonstrated that misperceptions of best friends' drinking norms are not present.[27,35] This suggests that close or best friends' drinking is not a good choice as a referent for personalized normative feedback, based on the necessity of misperceptions of drinking norms.

Gender-Specific Feedback—Researchers have demonstrated that gender differences are present in some aspects of peer drinking norms. [36,37] For instance, women consistently report less alcohol consumption than do men.[38] Gender differences in alcohol consumption may be problematic to interventions using typical student normative feedback. Because women drink less than men do, women are being presented feedback that provides higher average alcohol consumption norms, whereas men are being presented feedback that provides lower average alcohol consumption norms. This may explain why some researchers [6] using the "average" student as a referent have found normative feedback to be less effective for women. For example, Prentice and Miller[6] showed that at an 8-week follow-up assessment, men had corrected perceptions of injunctive norms, whereas women showed no change. Drinking may have been perceived as being more of a male activity, causing women not to be affected by normative information. Consistent with this idea, Suls and Green [20] found that college students perceived men to have more social pressure to drink as well as to experience more embarrassment if they express drinking concerns.

Not only do men consistently report higher alcohol consumption than do women, but men also perceive more permissive social and institutional norms than do women.[36] In addition, perceived same-sex peer-drinking norms are better predictors of alcohol use[39] and negative consequences.[4] Furthermore, some research has found normative feedback to be less effective for women, at least for injunctive norms. [6]

Researchers have proposed that gender-nonspecific feedback may have a smaller effect on women's drinking because gender-nonspecific feedback (ie, the average student) may be thought of as primarily "male" by both men and women.[4,28] A recent meta-analytic integration found that women have greater self–other discrepancies than men do. [28] The researchers responsible for that integration suggested that normative information may need to be gender-specific to have a greater influence on women's drinking attitudes and behaviors. Prior research results have also shown (1) that women overestimate the drinking of their same-sex peers; (2) that perceived same-sex norms are better predictors of drinking than perceived gender-nonspecific norms are, especially for women; and (3) that actual norms for women are lower than actual norms for gender-nonspecific students.[4] In contrast, presenting male-specific normative feedback to men would describe more prevalent drinking than would presenting gender-nonspecific normative feedback to men.

Group-Specific Feedback—Researchers have presented normative feedback in terms of Greek-specific [19,35,40] and athlete-specific feedback. [41] For example, Larimer and colleagues[19] provided fraternity members with individual drinking norms and fraternity house-specific drinking norms. Their findings suggested that providing fraternity members with individual and house-drinking norms reduced alcohol consumption compared with that of other fraternity members who did not receive any feedback. Carter and Kahnweiler[40] showed that actual drinking norms and perceptions of drinking norms for Greek members are higher than actual drinking norms and perceptions for non-Greek members. The authors suggested that their findings provided support for the hypothesis that behavior is most closely related with the norms for one's own reference group. A critical point, however, is that Greek-specific feedback would produce smaller self-other discrepancies. Previous research has shown that self–other discrepancies become greater as reference groups become more distal.[28] Even with smaller self–other discrepancies, the specificity and relevancy of 'Greek-specific feedback may increase the effectiveness of normative feedback based on the proximity of the group. Clarification of the tradeoff between greater misperceptions and less influence for more distal groups versus smaller misperceptions but greater influence of more proximal groups is imperative for furthering the development of normative feedback interventions.

Prior researchers have similarly used the typical member of one's athletic team as a referent.[41] Student-athletes overestimate the alcohol consumption of their team members. However, student athletes also estimate that the typical college student drinks more than their typical teammate. This suggests that team-specific feedback may be more effective in reducing drinking and alcohol-related problems in student athletes for 2 reasons. First, the referent group of teammate is more proximal compared with a more distal group, such as the average college student. Second, team-specific feedback would provide students with more factual drinking norms for their proximal group. Again, even with smaller self–other discrepancies, team-specific feedback may increase the effectiveness of normative feedback based on the proximity of the group.

Age-Specific Feedback—Few interventions have used age-specific feedback. In research conducted by Cunningham, Humphreys, and Koski-Jannes,[42] the authors provided personalized normative feedback via the Internet. Participants in this study were not college students but rather were people from the general population. Feedback in this study was specific to each participant's age, gender, and country of origin (participants were from Canada and the United States). However, there was no follow-up assessment. Therefore, we do not know if age-specific and gender-specific feedback led to a change in drinking behavior or corrected perceptions of perceived norms. McShane and Cunningham[43] found no difference in readiness to change based on age-specific feedback, but participants received information in terms of Canadian population drinking patterns, Canadian university students' drinking patterns, and American university students' drinking patterns. There was no significant difference in readiness to change between both Canadian feedback groups, regardless of age. Age-specific feedback may still be influential; it may just have to be more relevant or more specific than it was in McShane and Cunningham's study,[43] such as exact age (eg, students who are aged 21 years). In addition, if age is employed in a personalized normative feedback intervention, it may be more useful to target younger college students, as prior research has shown that they consume larger quantities of alcohol, engage in more heavy-episodic drinking, and are more likely to abuse alcohol than are older college students.[44]

Research is needed to assess which reference groups are stronger predictors of alcohol consumption and alcohol-related consequences. It is also necessary to assess personalized normative feedback interventions that employ more specific referents. The careful selection of referents, whether it is group, gender. or age, may produce more effective personalized normative feedback interventions.

DISCUSSION

Implications for Future Research

Referents—In future research, investigators should focus on more proximal referents to produce a stronger influence on drinking behavior for some people, provided that misperception exists between the perceiver and the referent group. To date, evidence suggests that gender-specific feedback should be used for women. [4] Additional work is needed to determine the ideal level of specificity across a number of referent groups, including Greeks, athletes, and freshmen, and across demographic categories, including gender, ethnicity, and age.

Matched Participants—Prior research results have shown that personalized normative feedback works better for people who drink for social reasons.[8] Therefore, normative feedback interventions may be more effective if matched for those individuals who drink for social reasons as opposed to other reasons, such as coping. Thus, research is needed to identify other

"matching" factors that identify the best and worst candidates for personalized normative feedback interventions.

Self-Defined Referents—One potential problem with making referents more specific or potentially matching participants to more specific normative feedback is that researchers may be placing relevance on the wrong referent group or on a less important one. Future research should delve into how self-defined referents and norms compare with investigator-defined referents and norms when used in normative feedback interventions. Self-defined referents are those in which students indicate groups or referents with which they most closely identify. Normative feedback would use norms specific to those groups with which students indicated they most closely identify. For example, a student may indicate that she most closely identifies with other female student-athletes. Her self-defined norms would be drinking norms for female student-athletes. Self-defined referent groups may be more influential than investigator-defined norms because of the high level of relevancy placed on them by participants.

Recommendations for College Health Programs

Several recommendations can be drawn from this review. In particular, based on limited university budgets for alcohol education and prevention programs, college health program providers who wish to use personalized normative feedback should target students who are at higher risk for heavier alcohol consumption and alcohol-related problems. Research results suggest that students who are at higher risk are younger students, freshmen, athletes, and Greek members. [19,24,25] In addition, college health professionals should attempt to make personalized normative feedback more relevant by using feedback specific to groups that are more proximal yet where misperceptions are still present.

Conclusions

In sum, drinking among college students remains a concern because of the number and severity of campus problems associated with alcohol consumption. One approach to lowering alcohol consumption and alcohol-related problems is normative feedback. Normative feedback interventions target several groups to reduce drinking, specifically those groups at higher risk for negative consequences of alcohol. Personalized normative feedback has been successful at lowering drinking and negative consequences of alcohol consumption. In the future, researchers should evaluate the ideal referents for use in normative feedback interventions while paying particular attention to the balance between misperception and proximity of referent groups.

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