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## Alcohol Use in the Greek System, 1999–2009: A Decade of Progress

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### Abstract

This review examines the empirical literature on fraternity and sorority drinking published during the last decade. This body of 69 research studies indicates that both socialization and selection influence alcohol use in the Greek system, as do normative perceptions and the enabling environment of Greek housing. This review also details the individual and chapter-level interventions that have been implemented to address drinking in the Greek system. Limitations of the current survey and intervention literature suggest several promising directions for future research.

### Keywords

College; alcohol use; Greek system; intervention; prevention

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The Greek system plays an influential role on modern day college campuses where there are over 12,000 chapters of fraternities and sororities in the U.S. and Canada, with over 750,000 members [1]. While Greek organizations have been associated with positive benefits, such as engagement in the campus community, critical thinking, and other benefits [2, 3], the Greek system is also associated with heavy alcohol use that often tragically results in severe injury or death [4, 5]. Research reviews conducted over the past ten years have consistently found that members of fraternities and sororities consume more alcohol and experience more alcohol-related problems than non-members [6–9]. For example, a recent survey of one national fraternity with 3400 members in 98 chapters across 32 states revealed that 97% of the members were drinkers, and 64% were frequent heavy episodic (or “binge”) drinkers, defined as consuming 5 or more drinks on at least 3 occasions in the past two weeks [10].

In 1999, Borsari and Carey published a review of the literature on alcohol use in the fraternity system published between 1980 and 1998 [6]. They identified five factors consistently associated with alcohol use in fraternities, which were also identified in a subsequent comprehensive review [9]. First, there was a continuity of heavy alcohol use from high school to college in students who joined fraternities. Second, fraternity members seemed to seek out heavy drinking environments, thus self-selecting into the fraternity system. Third, alcohol played a central role in fraternity socialization and was often an integral part of hazing and pledging rituals. Fourth, fraternity members demonstrated

misperceptions of the drinking norms of their fellow members. Finally, the fraternity house provided an enabling environment for heavy alcohol use.

The research that has been conducted in the past decade makes it clear that alcohol use continues to be a major problem in the Greek system. We had three goals in reviewing this literature. First, we wanted to examine advances in understanding alcohol use in the Greek system. Second, as few interventions had specifically addressed alcohol use in the Greek system when the first review was written, we wanted to review the empirical support for several interventions that have been developed and implemented with this high-risk population. Third, we wanted to suggest promising areas of future research with members of the Greek system.

## CURRENT REVIEW

Standard literature search techniques were utilized to conduct an exhaustive search for studies on alcohol involvement in the Greek system at American colleges. Online computer searches of databases (e.g., Medline, ERIC, PsycINFO, Sociological Abstracts) used combinations of the words *college, fraternity, sorority, Greek, alcohol, intervention, and drinking*. We also used ancestry and descendancy approaches, as well as correspondence with researchers active in the domain [11]. Studies were included if they were published in peer-reviewed journals after 1998 (the cutoff of Borsari & Carey, 1999): Studies available as of February 2009 were eligible for inclusion. Our review of the literature found 69 studies that had specifically addressed alcohol use in the Greek system. We excluded eight studies due to response rates below 40% [12], which used inappropriate analysis strategies, and/or were not published in peer-reviewed journals [13–20].

## RESEARCH ON ALCOHOL USE IN THE GREEK SYSTEM

In the past ten years, 61 studies have addressed alcohol use and problems in the Greek system. For parsimony, we condensed the five themes in the previous review into three categories prevalent in this body of research: selection and socialization into the Greek system, misperception of norms, and the enabling environment of the Greek house. Additionally, we have also reviewed the research incorporating sorority members.

### Selection and Socialization into Greek system

The role of selection and socialization has received considerable study. To briefly review, students who come to college with established drinking patterns seek out peers who drink in the same fashion, often joining the Greek system [21]. This process is termed *selection*. This pattern was identified by Borsari and Carey as the continuation of high school alcohol use, and research in the last decade has continued to find that students who were heavy drinkers in high school tend to join fraternities [22]. For example, in one study, 60% of fraternity members had established their drinking patterns by the age of 16 [23].

On the other hand, *socialization* proposes that students immersed in the college social environment, in which alcohol use and misuse are accepted, prevalent, and normative, will increase their own use in order gain peer approval. It is important to clarify that selection implies that becoming a member of the Greek system, while socialization can occur without becoming a member *per se* (e.g., attending fraternity parties). In addition, both socialization and selection can be present at once, and the concept of *reciprocal determinism* [24] captures the dynamic interplay of selection and socialization processes over time [25]. A good example of such reciprocal influence is demonstrated by the ownership of fake identification (IDs), which are linked to heavy drinking [26]. Before matriculation, future Greek members

are more likely to own fake IDs (selection); after matriculation, a greater percentage of Greek members obtain fake IDs than non-members (socialization).

One of the limitations of the research published on or before 1999 was that it was primarily cross-sectional, making it difficult to identify which process is most influential. To be sure, quality cross-sectional research has continued to indicate the strong association between Greek membership and personal alcohol use [27, 28], and a recent re-analysis of the 1995 National Health Risk Behavior Survey found fraternity membership to be predictive of binge drinking intensity and frequency, even after accounting for several endogenous variables [29]. This effect appeared to be driven by underage drinkers, further suggesting that fraternity membership plays a role in the development of binge drinking (socialization).

Longitudinal research has greatly improved our understanding of selection and socialization in the Greek system by evaluating changes in alcohol use after joining the Greek system. When students are heavy drinkers before joining and continue to drink in this fashion, this suggests that selection has occurred. If the students' drinking increases significantly after joining the Greek system, socialization may be present. For example, one longitudinal study found evidence of a selection effect – students who were not members of the Greek system during the first year of college, but later joined the Greek system, tended to be heavier drinkers compared to those who did not affiliate [30]. Thus, entering college as a heavy drinker may make the Greek system more appealing as a way to continue drinking patterns already established in high school. Unfortunately, a small sample size made these analyses underpowered and this conclusion tentative. Furthermore, it was possible that these individuals socialized and drank heavily at Greek functions, which influenced their decision to pledge.

Other longitudinal research has also found evidence of a socialization effect: although students who joined the Greek system tended to be heavy drinkers (selection), Greek membership appeared to play a contributing factor in the development of alcohol dependence [31]. Specifically, the interaction between Greek membership and the personality construct behavioral undercontrol (operationalized as a composite measure of sensation seeking, impulsivity, aggressiveness and antisociality) was a risk factor for developing alcohol dependence symptoms. Particularly relevant to the process of socialization, however, was that this relationship emerged during the second semester during their freshman year, suggesting that the Greek system does not fully influence personal alcohol use until the individual has established a network of friends and/or moved into Greek housing. Furthermore, the interaction between Greek membership and behavioral undercontrol remained significant after controlling for the main effects of these two variables, as well as pre-matriculation drinking, suggesting the mechanism by which socialization in the Greek system fosters the adoption of heavy alcohol use. This process has been suggested by other research in which even those members of the Greek system who endorse a variety of reasons to limit their alcohol use still demonstrate elevated levels of drinking compared to non-members [32]. Thus, Greek members may find it difficult to reduce their alcohol use in an environment that supports excessive alcohol use.

The influence of socialization may start early; a study of over 1500 roommates who were randomly assigned to live together during their freshman year found that a student was significantly more likely to pledge a Greek house if his/her roommate did so [28]. When both students in a room joined the Greek system, 27% joined the same house. Therefore, being exposed to the social environment of the Greek system by a roommate appears to influence the decision to join a the Greek system. If selection was at work, then the decision to join a fraternity would be determined by pre-matriculation alcohol use, as students would come to school with established drinking patterns and seeking out an environment in which

to continue this pattern of use. Subsequent research has demonstrated the same trend – 21% of first year students with roommates who drank heavily in high school joined fraternities, compared to only 16% of first year students with roommates who did not drink in high school [33]. As roommates were assigned randomly in this sample, it appears that the drinking behavior of the roommate can influence the decision to join a fraternity in the other roommate. In sum, socialization appears to play a significant role in the development and maintenance of heavy drinking in the Greek system.

Three prospective studies published over the past 5 years that have examined both selection and socialization indicates that the two may act reciprocally. One study assessed over 4,000 high school students before they entered college (wave 1), during their first or second years in college (wave 2), and during their third or fourth years (wave 3) [34]. Students who joined the Greek system exhibited significantly higher rates of alcohol use and problems before entering college (selection). However, socialization was also evident in that heavy episodic drinking occurred in members of the Greek system, but not in non-members. Selection and socialization effects also appear to be more powerful for men than for women members of the Greek system, as fraternity members' alcohol use increases more than sorority members' use during the college years. The influence of socialization was perhaps best demonstrated by the finding that college men who joined fraternities, but then became inactive after wave 2, reported decreased heavy episodic drinking at wave 3. In contrast, men who joined fraternities later in their college careers (members during wave 3 only), reported increases in heavy episodic drinking.

A second study examined alcohol use and problems of Greek members before they entered college, assessing them the summer before matriculation or during their senior year in high school [35]. Students who later joined the Greek system, especially men, drank more and experienced more alcohol-related problems in high school than students who did not join (selection). However, students' association with the Greek system once on campus was linked to increased alcohol use and problems (socialization). A socialization effect was also evident in non-members: students who partied in the Greek system, but were not members, exhibited a greater increase in use and problems than those who did not attend Greek activities. As a further step to disentangle socialization and selection effects, the authors examined both active (offers of alcohol) and passive (social modeling and perceived norms) social influences on personal alcohol use. Results indicated that pre-matriculation social influences were most influential on drinking, suggesting that selection may play a greater role than socialization in alcohol use and consequences in the Greek system.

The third study found that students who are heavier drinkers, more extraverted, and report higher motivation to play sports and party are more likely to join the Greek system (selection) [36]. However, students who joined after their first year in school demonstrated significant increases in drinking and alcohol-related consequences compared to those who did not join (socialization). Further indicative of socialization, students who dropped out of the Greek system demonstrated reductions in drinking and alcohol-related consequences. Taken together, these three prospective studies indicate that both selection and socialization appear to be co-occurring and reciprocal influences that significantly contribute to alcohol use and consequences in the Greek system.

### **Misperception of norms**

The social norms approach posits that students perceive their peers as drinking more (descriptive norms) and being more approving of alcohol use (injunctive norms) than they actually are [37, 38]. As a result of these misperceptions, students are more likely to drink heavily themselves, adapting their behavior to match these perceived norms. Normative perceptions of fraternity and sorority members have received a great deal of research

attention in the past decade, commensurate with research evaluating social norms campaigns on college campuses [39]. A meta-analysis of perceived injunctive and descriptive norms revealed that fraternity and sorority members often perceive their fellow members as being heavy drinkers and very approving of alcohol use [40], an effect has been replicated in subsequent studies [32, 41–45]. In fact, one of the consistent findings of the 1999 review was that members of the Greek system recognize (and often revel in) the fact that they are the heaviest drinkers on campus [46].

Regarding the origin of these normative perceptions, it appears that the close bonds forged in the Greek system may foster an environment in which heavy drinking is regularly discussed and promoted. An examination of college social networks found that talking about alcohol use and its consequences was related to heavier drinking [47]. Fraternity members have also reported drinking for extrinsic reasons (e.g., because people like me more when I have had a few drinks), reported more peer pressure to drink, and felt more controlled (regulating their behavior to external cues) than non-fraternity members [48]. While fraternity members appear to be especially susceptible to external influences, leaving this environment has been linked to a significant drop in alcohol use, especially among men [49]. In sum, there appears to be considerable normative pressure to drink heavily in the Greek system.

Research has indicated that perceived norms partially account for the relationship between membership in the Greek system and heavy alcohol use. The peer environment is a vital contributor to drinking in the Greek system: Statistical models that control for peer norms revealed a substantially reduced influence of Greek membership on personal alcohol use after graduation from college [30, 49]. Recent research [36] found that perceived norms fluctuated with increases in alcohol use and consequences in Greek members. That is, individual who joined the Greek system reported greater increases in perceived norms than those who did not join, and perceived norms decreased more for those who dropped out of the Greek system than for those who stayed in.

Research examining both injunctive and descriptive norms has not yet determined their differential influence on alcohol use in Greek members. Regarding injunctive norms, one study with fraternity and sorority pledges found that descriptive norms predicted concurrent alcohol use, while injunctive norms predicted concurrent alcohol-related consequences [50]. However, injunctive norms predicted both alcohol use and consequences at the one year follow-up. The authors hypothesized that this may be because injunctive norms are more enduring and less likely to be influenced by personal drinking behaviors. In the Greek system, in which approval is highly valued among junior members, injunctive norms may be especially influential.

Subsequent research has failed to indicate that injunctive norms significantly influence drinking in the Greek system. One study of fraternity men found that descriptive norms were significant predictors of personal alcohol use, while injunctive norms were not [51], a finding that has been replicated in sorority women [52]. A longitudinal study examined changes in alcohol use at baseline to one-month follow-up (in a sample that was 20% Greek) and found that descriptive norms were predictive of changes in alcohol use [42]. Specifically, larger self-other differences, defined as descriptive norms minus actual drinking, were linked to increases in drinking, further evidence that students appear to match the perceived descriptive norms around them. Other longitudinal research did not find a such a relationship; instead, descriptive norms were associated with high levels of alcohol use prior to entry in college, suggesting that many Greek students are heavily involved in alcohol use from the start of their college careers [35]. In sum, descriptive and injunctive

peer norms appear to be very influential components of the Greek drinking environment, but their differential influence has yet to be determined.

### Enabling environment of Greek housing

Despite limitations banning kegs and alcohol from Greek housing and functions, alcohol continues to be an integral part of social interactions in the Greek system. Alcohol is common at most Greek functions, except those in which drinking is expressly forbidden (e.g., dry rush). Alcohol use is often closely linked to pledging in the Greek system, much of which occurs in the fraternity or sorority house. Pledge drinking is frequently implicated in hazing-related injuries and deaths [53] and alcohol-related arrests are more common in Greek pledges [54]. Although alcohol use during pledge period is formally forbidden in fraternities and sororities, evidence consistently indicates that pledges do drink, and often heavily, and qualitative research indicates that alcohol is involved with the majority of pledge activities in sororities, as well [55].

Greek houses are a location that supports heavy drinking [30, 56], as fraternity parties often take place with minimal supervision, especially in houses that are located off campus [57]. Indeed, fraternity houses are the sites of the heaviest alcohol use on campus, with close to half (49%) of the students in those settings reporting heavy episodic drinking [58]. Fraternity parties are also highly associated with physical altercations and other consequences [59]. Research indicates that students in fraternities report heavier drinking and more consequences than non-members in dormitories, off-campus housing, those living with parents [10, 22, 41], and members who do not live in the fraternity house [60]. One study did not find an increased prevalence of alcohol use, problems, sexual behaviors, and other risky health behaviors in Greek members who lived in the house compared to those who lived independently [61]. However, the authors acknowledged that this may have been a result of the small number of students in their sample who lived in Greek housing ( $n=52$ ).

Sorority houses are banned by the National Pan Hellenic Council (PNC) from serving alcohol; however, sorority members report experiencing problems with alcohol violations when co-hosting fraternity or off-campus parties [57] or drinking before social events (i.e., “pregaming”) [55, 62]. This may also be a reflection of the availability of organized social events, which often occur in fraternity houses and not sorority houses [57].

The environmental context of the party is an important contributor to the students’ intoxication level: Cross-sectional research has indicated that students consume more drinks at Greek parties than at all other events except off-campus parties [62]. Field studies have shown that partygoers (both Greek and non-Greek) exhibit higher blood alcohol levels (BALs) at fraternity parties (mean BAL = 0.93) than at private parties (mean BAL = 0.082) [63]. Longitudinal research has shown that availability of alcohol (ease of obtaining alcohol, possession of a fake ID, obtaining alcohol from someone 21 or older, keeping alcohol in one’s living quarters, knowing where to get alcohol without an ID) increases significantly after joining the Greek system [36]. Therefore, the physical environment of the chapter house appears to facilitate heavy alcohol use in its members, especially fraternities.

## INTERVENTIONS ADDRESSING ALCOHOL USE IN THE GREEK SYSTEM

For most Greek members, heavy drinking is often maintained throughout the college years [10, 30, 36, 49] presenting a window of opportunity for intervention. Sanctions are often placed on individual members for violations of school policy [64], yet fraternity members who reported being sanctioned for their alcohol use reported higher levels of drinking than students who had not received sanctions [10]. Therefore, sanctions alone do not appear to be

the answer for reducing drinking at the member or chapter level. Fortunately, the past decade has seen several innovative approaches to reduce drinking in the Greek system.

### Individual Interventions

Two interventions have aimed to reduce drinking among individual members. For example, one intervention was conducted with freshmen who were pledging a fraternity [65]. Participants were provided a one-session individual intervention following established procedures [66]. In addition, the entire fraternity house received a 1-hour group intervention that also provided information about alcohol use and problems. Although no reductions in alcohol problems were found, one-year follow-ups revealed significant reductions in estimated peak BALs and weekly alcohol consumption relative to no-treatment controls. In addition, there was no difference between interventions provided by professional staff or peers, suggesting that fellow students may be an important resource in providing interventions in the Greek system. Interestingly, these results were not replicated in a sample of sorority members – both the treatment and control groups reduced their drinking at the one-year follow-up [67].

Social norms interventions propose that heavy drinking in students is influenced by their misperception of other students' drinking [see 39]. Therefore, correcting one's misperceptions of campus drinking norm will reduce on-campus alcohol use. Although implemented successfully with college students [e.g., 68], this approach has yet to be successfully implemented with Greek members. One attempt to conduct a social norms intervention with fraternities was halted due to the lack of a healthy drinking norm in this population [44]. In other words, the message that most students do not drink heavily, which is effective with the general student population, is simply not true in the Greek system. As a result, it may be a challenge to provide convincing and relevant norms in the Greek system [45, 51].

Another approach has been to provide incentives to partygoers to reduce personal levels of intoxication [69]. Specifically, students attending three fraternity parties were informed that those who recorded a BAL of 0.05 on a breathalyzer when leaving the party were eligible to be entered into a lottery to win \$100. Compared to a party with no incentives, partygoers who received incentives recorded lower BALs on average (0.079 vs 0.098 g/dL), and a higher percentage of the students recorded BALs below 0.08 (40% vs 30%). Therefore, directly incentivizing safer drinking behaviors may be a strategy for reducing heavy alcohol use in high-risk settings. However, it remains to be seen how receptive school administrations will be to this approach, and how effective this approach is when the incentive is removed.

### Chapter-level interventions

The majority of interventions implemented over the past decade have targeted entire Greek chapters. For example, one project implemented a group intervention titled "*Talking about Alcohol and Drugs...among Greeks*" (TAAD) [70]. TAAD was an intensive educational program addressing alcohol use and its risks, delivered by chapter members and implemented with 8 fraternities and sororities. Comparison with 7 control fraternities and sororities revealed no effect on alcohol use, consequences, and attitudes and beliefs at the 1-year follow-up. The authors hypothesized that poor implementation fidelity may have contributed to the lack of effects. Low attendance was also an issue, as was retention for follow-up assessments.

Another recent project randomized 99 chapters to one of three conditions: assessment only, a 3-hour intervention, or the same 3-hour intervention plus two booster sessions at 5 and 11

months post-baseline [71]. The intervention session, called Training for Intervention Procedures (TIPS), sought to teach fraternity members how to identify and help someone who is experiencing problems with alcohol use. This intervention included a didactic component, behavioral skills training, and behavioral rehearsal [72]. The booster sessions consisted of a 90-minute review of the intervention. Frequent heavy drinkers (defined as drinking 5 or more drinks on at least 3 occasions in the past 2 weeks) in either intervention group reported less alcohol use than the assessment only condition at the 6-month follow-up. However, these effects had largely deteriorated by the 12 and 18-month follow-ups. In addition, there was an increase in drinking among the lighter drinkers in the study over the course of the 18-month follow-up period. Therefore, the intervention did not appear to have a long-term impact on alcohol use and problems, and booster sessions did not appear to enhance intervention effects. That said, conclusions from this study are tentative due to low follow-up response rates (59–66%) and higher rates of attrition in the intervention than the assessment-only group.

Alcohol-free housing is another approach that has been implemented with Greek chapters. In a survey of a national fraternity, the 18 chapters who had adopted alcohol-free housing policies did not demonstrate lower drinking levels than the 80 chapters that did not have such a policy [10]. Longitudinal research has also found that an alcohol-free housing policy did not result in reductions in alcohol use among fraternity members, whether or not they lived in the fraternity house [60]. Specifically, 55% of the members of fraternity houses with alcohol-free policies reported that alcohol use in the fraternity house had decreased, yet their personal consumption had not. Thus, the lack of changes in personal drinking behaviors does not appear to be due to a lack of policy enforcement; instead, the authors hypothesized that the heavy drinking may have moved from the fraternity house to off campus parties.

Another such approach was to deliver a fear appeal message to members of the Greek system prior to a week-long set of activities that were typically accompanied by heavy alcohol consumption [73]. A fear appeal message presents a particular threat (e.g., receiving punishment for drinking) as well as a clear and feasible way to avoid that threat (e.g., not drink). Greek students were told that those who were underage and/or are intoxicated would be arrested and prosecuted, that the authorities would carefully monitor all activities throughout the week, and that a court would be convened on campus to process the arrests. A five-month follow-up assessment revealed that students who heard the message reduced their drinking during the event and attended more alcohol-free events than students that did not hear the message. Therefore, clear communication of the consequences of drinking behaviors may be a useful universal intervention for some Greek members.

In sum, research over the past decade has investigated several intervention approaches at the individual and chapter level aimed at reducing alcohol use and problems among Greek members. Results have been mixed, depending on the outcome (alcohol use *vs* problems) and target population (fraternity *vs* sorority members). Overall, any significant effects have been short-lived or dependent on external rewards (e.g., incentives). That said, this research suggests several strategies or combinations thereof that could be effective in limiting alcohol use in the Greeks.

## LIMITATIONS OF RESEARCH

The studies published over the past decade have limitations that suggest several future directions for survey and intervention research. First, although many questions still remain, over the past decade researchers have heeded the call to systematically investigate gender-specific factors in alcohol use in the Greek system. For example, research indicates that sorority members are exhibiting greater levels of heavy drinking and report that this



behavior is acceptable and even desirable [52, 56, 74]. Furthermore, Reis and Trockel [76] found that both fraternity and sorority member's alcohol expectancies were positively related to boastful behavior about alcohol use. Indeed, compared to non-members, sorority members drink more and experience higher amounts of negative consequences than fraternity members [22, 52, 77]. Sorority members may also be more sexually active than non-members: members reported having more sexual partners than non members in their lifetime, in the past year, and in the past 3 months. In addition, they were less likely to report that their friends would think condoms were necessary [61]. Such sexual perceptions and behaviors are a risky combination, and alcohol use has also been linked to sexual victimization and consequences by sorority members [76–78]. Heavy drinking places sorority members at particular risk because, after consuming the same dose of alcohol, a woman will reach a higher BAC than a man with an equivalent body mass, due in part to differences in body composition and first pass metabolism [79]. However, biological differences alone do not fully explain alcohol related consequences in sorority members, making it vital to understand why sorority women may be at particular risk.

Specific factors have been related to increased rates of alcohol involvement among sorority women. For example, private and public self-consciousness (SC) has been identified as a gender specific risk factor for increased alcohol involvement for Greek members [36]. In this study, private self-consciousness was defined as personal beliefs, motives and emotions, while public SC was defined as external factors including personal appearance and behavior. Results indicated a negative correlation between private and public SC and alcohol consumption in fraternity males, but sorority members who exhibited higher levels of public and private SC were more likely to be heavier drinkers. These findings suggest that sorority members who are highly introspective may be more likely to drink alcohol to cope with negative affect related to private and public SC. The relationship between negative affect and alcohol use has also been observed in other research [80], providing preliminary evidence that sorority members are more likely to self-medicate than fraternity members.

Second, research has been limited to cross-sectional or longitudinal studies examining the impact of year-by-year involvement in the Greek system. It would be valuable to examine drinking and consequences in the Greek system using event-level approaches [e.g., 81]. Event-level analysis permits researchers to examine influences on alcohol use in specific contexts, providing a level of specification not yet achieved in research on drinking in the Greek system. This approach would permit further disentangling of the selection and socialization processes encountered in different drinking contexts (e.g., fraternity party, drinking in Greek residences, in bars, at pledge functions). This would be especially useful in determining the different influences on members, non-members, and non-members who attend Greek parties [35]. Event-level data can be obtained using recall methods such as the Timeline Follow-back [82] conducted in person [83], *via* the internet [81], or using personal digital assistants (PDAs) [84].

Finally, it is unclear how the research on alcohol use in the Greek system translates to other cultures. The Greek system is a uniquely American system, and has not been widely adopted in other countries [85]. To address this issue, we conducted extensive literature searches but failed to find research examining alcohol use in a Greek system established outside of North America. It is possible that some of the factors afforded by the Greek system are replicated in other settings. Indeed, researchers in New Zealand acknowledged that some residence halls in which there was heavy drinking “offer some features of the concentrated social milieu and sense of social identity provided by the American fraternity and sorority system, but lack formal membership” [86]. That said, it is premature to generalize how the specific factors linked to heavy drinking in the Greek system may affect those in other cultures with different views on alcohol use.

## RECOMMENDATIONS FOR INTERVENTIONS IN THE GREEK SYSTEM

The research on alcohol use in fraternities and sororities, and college drinking in general, suggest many promising strategies to reduce risky drinking in the Greek system.

### Parental involvement in pre-matriculation prevention efforts

Interventions that include parents may be particularly promising, as parental approval of heavy drinking has been linked to alcohol-related drinking and problems among first year students [87, 88]. Therefore, interventions can educate parents regarding the risks associated with alcohol use on campus [89]. This will permit parents to talk with their children about the risks involved in joining the Greek system, learn ways to monitor their children's alcohol use, and identify signs of drinking problems. Continued research on gender-specific factors related to members' drinking may inform these intervention efforts. For example, the parent-child relationship prior to college matriculation has received attention as a risk factor for problematic alcohol use among fraternity and sorority pledges. Specifically, troubled or "conflicted" relationships with parents were positively related to problematic alcohol use in fraternity and sorority pledges [90]. Furthermore, the father-child relationship was a stronger predictor of alcohol-related consequences than the mother-child relationship for fraternity members, findings which may inform the implementation and effectiveness of parent-based interventions. Third, as perceived parental approval was also linked to alcohol-related problems [87], tapping into the approval of both fellow students and parents for heavy drinking may have more impact in a tightly cohesive group which desires approval.

Parental involvement in prevention efforts appears to be a promising approach. Specifically, Turrisi and colleagues designed a preventive intervention for incoming first-year students [89]. The intervention included modules on prevalence and consequences of college heavy drinking, as well as information regarding the physiological, psychological, and psychomotor effects of alcohol, risk and protective factors for college drinking, and ways to identify problem drinking. In addition, the parents were provided with strategies for improving communications with their child, how to teach their child drink refusal skills, and ways to help their child should he/she develop a drinking problem. This intervention was implemented with high school seniors during the summer before matriculation. At the end of their first semester in college, the treatment group reported lower levels of drinking and alcohol-related consequences when compared to a demographically matched control group. Randomized trials of similar pre-matriculation interventions involving parents are currently underway, and will continue to inform the feasibility and effectiveness of this approach.

### Implement strategic screening once the student has joined the Greek system

The majority of students are unlikely to self-refer to treatment, as they do not see their alcohol use as a problem, even when exhibiting alcohol abuse or dependence [91]. As screening all Greek students for alcohol problems raises both practical and ethical issues, certain groups of students may be of particular interest. For example, the students at highest risk on campus are male fraternity members who are also athletes [92]. Therefore, this group could be targeted for screening and intervention. That said, it will be a challenge to develop screening and referral procedures that appeal to students, maintain confidentiality, and avoid creating disincentives to accurate reporting. In addition, Greek members will come into contact with the school administration in a variety of ways, such as experiencing academic difficulties, referral to the administration for alcohol violations, or presenting to the counseling center for treatment. Students can be screened at these times and provided with indicated preventions which assist individuals who have detectable signs of problem drinking [93].

### **Engage house leaders in the interventions**

After students with drinking problems are identified, they may be resistant to volunteering for an intervention. Therefore, interventions will most likely have to be mandated, either at an individual or group level. However, delivering mandated interventions raises a whole host of issues and considerations, such as defensiveness [64]. While leaders are commonly liked and respected by the members, they are also often the heaviest drinkers in the house [94], although perhaps less so for sororities [78]. Therefore, the engagement of house leaders may be a vital advantage in any chapter-level intervention (e.g., TAAD).

### **Increase supervision of Greek members in their residences**

Policies of having house “mothers” or “fathers” (or house directors) adults who resided in Greek housing and supervised the students, declined in the 1960’s and 1970’s (as did student membership in the Greek system [95]). Although some Greek houses continue this tradition [96] the responsibility of supervising members of the Greek system has often fallen to fellow members, who are usually heavy drinkers themselves [94] and have not proven effective at delivering interventions addressing alcohol use [70] or controlling their peers’ drinking [57]. Therefore, adult supervisors may be better able to provide positive modeling and guidance and be more resistant to peer influences to ignore heavy drinking. For example, some schools have replaced dorm mothers and fathers with professional live-in residence hall staff members who have master’s degrees in college student development or higher education administration. Professional residence hall staff could provide an important conduit to student counseling, alcohol education programs, academic support programs, and other campus service providers. In addition, the presence of adult supervision may reduce the amount of “pre-gaming” or “front-loading” (drinking that occurs before attending a social function) that occurs in Greek housing [62]. In sum, a stronger adult presence in Greek housing may foster a sense of accountability and responsibility.

### **Implement promising and innovative campus-wide strategies**

For example, the scheduling of classes can make heavy drinking more aversive for students. A recent study revealed that students who did not have a Friday class drank twice as much as students who had an early Friday class, defined as starting before 12 pm [97]. The drinking rates of students with a later Friday class – after 12 pm – were identical to students with no classes. This “Friday class effect” was especially prominent among members of the Greek system. Therefore, campuses that institute early classes, preferably between 8 and 10 am, may be able to curtail the drinking of Greek members.

It may also be that the activities that the student is engaged in, rather than the physical housing itself, significantly influences personal alcohol use. Research has found that involvement in service (volunteer work, philanthropic commitments, and religious organizations) was associated with lesser alcohol use, especially in sororities [75, 98]. Therefore, an effective intervention strategy in the Greek system may be to encourage chapters to engage in service, as the amount of time spent volunteering at the campus level has been identified as a protective factor for heavy alcohol use in college students [99]. Specific to Greek members, those who reported high levels of volunteering had their risk for heavy drinking reduced to levels observed in non-members [100]. Therefore, encouraging Greek members to become involved in volunteering activities may be a way to lessen the alcohol use in the Greek system, especially for sororities [75]. As almost all chapters have formal associations with charitable foundations, enhancing this activity may not be difficult to accomplish.

An approach called event-specific prevention has been developed to reduce drinking during high risk events during college, either personal (e.g., 21<sup>st</sup> birthdays), institutional (e.g.,

tailgating at sporting events) or national (e.g., holidays) [101]. The Greek system would be a good site for this approach, as it has its own high-risk events (e.g., bid night, initiation, formals). For example, Spring Break is another activity associated with high risk drinking, especially for Greek members. Research has shown that fraternity and sorority members that went on Spring Break reported an increase in the total number of drinks consumed per week as well as the maximum number of drinks consumed per occasion, and this high level of drinking did not subside two weeks following their return [102].

Finally, recent innovations in technology have been developed to allow groups of students to receive immediate personalized feedback. This may enhance the efficacy of social norms interventions. Specifically, students may use PDAs to provide estimates of their own drinking, that of their peers in the room, and of the typical student on campus. Then, the results are displayed immediately to the group. One study implementing this approach with fraternities and sororities found reductions in alcohol use and perceived norms at 1 and 2 month follow-ups [103], and changes in perceived norms were found to mediate these reductions in drinking. Therefore, by providing such relevant and immediate feedback, preferably at the house level, interventionists may be able to challenge normative misperceptions in the Greek system. That said, care must be taken when assessing Greek members in the presence of their peers, as this may inflate their estimates of others' alcohol-related attitudes and behaviors [45, 104].

## CONCLUSION

Since Borsari and Carey [6] published their initial review on alcohol use and the Greek system, there has been significant advancement in research focusing on socialization, selection, normative perceptions, and the enabling environment of Greek housing. Notably, research over the past decade devoted increased attention to gender differences in alcohol use, empirically evaluated interventions, and longitudinal designs. Despite increased attention to alcohol use over the past decade in this multi-faceted environment, problematic alcohol use in the Greek system continues to be persistent and pervasive. Thus, innovative responses are necessary to reduce the prevalence of binge drinking in this high-risk population to a level consistent with federal recommendations for college students [105].

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## ABBREVIATIONS

<b>IDs</b>	Identification
<b>PNC</b>	Pan-Hellenic Council
<b>BAL</b>	Blood Alcohol Level
<b>TAAD</b>	Talking about Alcohol and Drugs....among Greeks
<b>TIPS</b>	Training for Intervention Procedures
<b>SC</b>	Self-consciousness
<b>PDAs</b>	Personal digital assistants

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### Key Learning Objectives

- Review research in Greek system in past decade
- Evaluate individual- and chapter-level interventions implemented with Greek members in past decade
- Identify difficulties associated with conducting research with this population
- Become aware of limitations of research

### Future Research Questions

- What are the context-specific predictors of alcohol use in the Greek system?
- How can interventions be improved to reduce drinking and alcohol-related problems in Greek members?
- How can Greek members get involved and facilitate efforts to reduce high risk drinking?