Short Communication

Alcohol perceptions and behavior in a residential peer social network☆

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HIGHLIGHTS

- Participants accurately perceived the drinking of nominated friends but overestimated the drinking of residential peers.
- Overestimating peer drinking predicted higher personal drinking, particularly with respect to nominated peers.
- The relationship between global misperception and drinking was significant for heavy (but non non-heavy) drinkers.

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ABSTRACT

Personalized normative feedback is a recommended component of alcohol interventions targeting college students. However, normative data are commonly collected through campus-based surveys, not through actual participant-referent relationships. In the present investigation, we examined how misperceptions of residence hall peers, both overall using a global question and those designated as important peers using person-specific questions, were related to students' personal drinking behaviors. Participants were 108 students (88% freshman, 54% White, 51% female) residing in a single campus residence hall. Participants completed an online baseline survey in which they reported their own alcohol use and perceptions of peer alcohol use using both an individual peer network measure and a global peer perception measure of their residential peers. We employed network auto-correlation models, which account for the inherent correlation between observations, to test hypotheses. Overall, participants accurately perceived the drinking of nominated friends but overestimated the drinking of residential peers. Consistent with hypotheses, overestimating nominated friend and global residential peer drinking predicted higher personal drinking, although perception of nominated peers was a stronger predictor. Interaction analyses showed that the relationship between global misperception and participant self-reported drinking was significant for heavy drinkers, but not non-heavy drinkers. The current findings explicate how student perceptions of peer drinking within an established social network influence drinking behaviors, which may be used to enhance the effectiveness of normative feedback interventions.

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1. Introduction

Despite the substantial increase in college-based alcohol harm reduction interventions in the last two decades, heavy drinking in this population remains high, with two-thirds of college students reporting binge drinking (Substance Abuse and Mental Health Services Administration, 2014). Furthermore, meta-analyses of commonly used college alcohol harm reduction interventions demonstrate non-significant (Huh et al., 2015) or small to medium (Carey, Scott-Sheldon, Carey, & DeMartini, 2007) effects on drinking reduction among students. These findings point to the need to improve upon existing intervention approaches.

Perceptions of same-aged peers' drinking behavior are among the strongest predictors of college student drinking behavior (e.g., Neighbors, Lee, Lewis, Fossos, & Larimer, 2007). Students tend to believe that peers drink more frequently and heavily than they actually do (e.g., Borsari & Carey, 2003; Martens et al., 2006), and these misperceptions are associated with heavier drinking (Borsari & Carey, 2003; Lewis & Neighbors, 2006; Neighbors et al., 2007). Interventions commonly incorporate personalized normative feedback (PNF), which presents students with accurate information about peer drinking (i.e., descriptive norms) to correct students' overestimated perceptions and, in turn, reduce risky drinking (for reviews see Carey et al., 2007; Larimer & Cronce,

2007). Although typical college students are commonly used as the normative referent, consistent with Social Comparison Theory (Festinger, 1954) and Social Impact Theory (Latane, 1981), studies indicate that perceptions of more proximal referents [e.g., same sex, ethnicity or residence (Larimer et al., 2009) and close friends (Collins & Spelman, 2013; McAlaney & McMahon, 2007)] may be more influential than distal referents in driving students' drinking-related behaviors. Still, a better understanding of *which* proximal referents may be most influential is needed. One randomized controlled trial of web-based PNF found typical student PNF more effective in reducing drinking and related consequences than specific normative referents (i.e., referents based on gender, race and/or Greek affiliation) (LaBrie et al., 2013). However, that trial did not account for participant's level of connectedness to the normative referents, a central moderator of the relationship between norms and drinking (Neighbors et al., 2010).

A major limitation of PNF is that data on actual student norms are commonly collected through campus-based surveys; these data do not reflect actual participant-referent relationships. Despite the theoretical and empirical support for the influence of peers on college students' drinking behaviors, no research to date has examined: 1) how accurately (or inaccurately) students perceive specific peers' drinking based on those peers' actual responses; 2) how perceptions of the drinking of these identified peers relate to personal drinking behavior; and 3) if perceptions of the drinking of identified peers have a stronger association with personal drinking than the more global perceptions of an identified group. Research examining the accuracy and influence of proximal normative perceptions in an identified social network of peers may aid in improving the accuracy of normative peer alcohol use measures and ultimately enhance PNF.

According to the false consensus effect (Marks & Miller, 1987; Ross, Greene, & House, 1977), heavier drinkers tend to overestimate (and lighter drinkers and abstainers underestimate) the prevalence of heavy drinking within their surrounding population to better align with personal behaviors. Moreover, attributional overestimation may be more strongly associated with higher drinking among heavier drinkers whose social relations and milieu emphasize alcohol. In fact, Lintonen and Konu (2004) suggest that norms-based interventions may have unintended consequences for light drinkers who are presented with drinking rates higher than their own. Clarifying how drinking status may moderate the relationship between misperception and personal drinking will provide insight into suitable targets (i.e., global student populations, high-risk student drinkers) for PNF.

1.1. Study goals and hypotheses

In the current study, we examined how misperceptions of peer alcohol use, both overall using a global question about residence hall peers, and asking person-specific questions about nominated peers are related to student's drinking behavior. The sample—students living in a campus residence hall—is ideal given that first-year students living in campus dormitories are at heightened risk for heavy drinking (Harford & Muthén, 2001; Harford, Wechsler, & Muthén, 2002) and share alcohol-related attitudes (Bourgeois & Bowen, 2001). Based on existing research and theory, we expected participants to overestimate the drinking of residential peers, with greater overestimation of global peer behavior than of specific important (nominated) peers. Next, we hypothesized that greater *misperception* of both important and global residential peer drinking would be associated with greater self-reported drinking, but that misperception of important peers would show a stronger relationship with participant drinking. Finally, we hypothesized that drinking status would moderate the relationship between both important and global peer misperception and personal drinking such that among heavy (but not non-heavy) drinkers, higher misperceptions would be associated with higher personal drinking behaviors.

2. Method

2.1. Participants

The current sample was drawn from a primarily first-year residence hall in a mid-sized, private college in the northeastern US. Participants not yet 18 ($n = 6$) were excluded, leaving a total of 188 eligible participants. Of these, 129 (69%) consented to participate in the study and completed an online survey. For analytical purposes, isolates (individuals who reported no friends and no one else in the network reported them) were removed ($n = 4$) and individuals who did not provide peer-reports of their friends were removed ($n = 17$). The final sample ($N = 108$) was 50.9% female (0.8% did not answer). The majority were freshman (88.0%) followed by sophomores (10.2%) and juniors (1.9%). Students were 53.7% White, 8.3% Multiracial, 20.4% Asian, 2.8% Black, 1.9% American Indian/Alaskan Native, 3.7% Unknown, and 9.3% "Other." In addition, 13.0% reported Hispanic ethnicity. The racial/ethnic composition of the current sample reflects that of the broader student population.

2.2. Procedure

Midway through the fall semester students living in the residence hall received an invitation email and mailed letter, with a $5 gift card enclosed, explaining the study. One week later, students were emailed an invitation containing a link to the web-based survey with consent options. Students chose to enroll in the study ($n = 129$), not enroll but allow their name to remain on the network nomination list in the survey ($n = 5$), or "opt-out" by not enrolling and having their name removed from the nomination list ($n = 9$). Reminder emails were sent to non-responders. Participants received $20 for completing the survey. All procedures met IRB approval at the University.

2.3. Measures

2.3.1. Important peer network survey
The network measure asked respondents to identify up to 10 individuals living in their residence hall who were important to them by selecting these individuals' names from a prepopulated dropdown list of all residents (see Barnett et al., 2014 for more information; adapted from Longabaugh & Zywiak, 2002).

2.3.2. Self-reported number of drinks
Respondents were presented with a standard drink definition (12 oz. beer or wine cooler, mixed drink containing one shot [1.5 oz.] of liquor, 5 oz. of wine) and asked, "On a typical drinking day, how many drinks do you usually drink?" Heavy drinkers were defined as males reporting 5 or more drinks or females reporting 4 or more drinks on a typical drinking day.

2.3.3. Perception of residential peer drinking
Using an item from the Drinking Norms Rating Form (DNRF; Baer, Stacy, & Larimer, 1991), respondents were asked "When a college student in your residence hall drinks, how much does s/he drink?" Response options were: (1) 0 drinks, (2) 1–2 drinks, (3) 3–4 drinks, (4) 5–6 drinks, (5) 7–8 drinks, and (6) >8 drinks.

2.3.4. Global misperception of residential peer drinking
The sample grand mean for self-reported number of drinks (i.e., the average value derived from all participants' self reports) was subtracted from each respondents' global perception of residential drinking to calculate a misperception value. Since the self-reported number of drinks was a continuous value, we converted the categorical response options for perception of residential peer drinking to a number of drinks value (e.g., 3–4 drinks was recalculated as 3.5 drinks) to calculate the global