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A Hierarchy of 21st Birthday Drinking Norms

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Social norms, at the most abstract level, represent society's expectations for appropriate behavior. For most individuals, our behavior, attitudes, and self-esteem are heavily influenced by our perceptions of others' opinions, expectations, and behaviors (Cialdini & Goldstein, 2004; Sherif, 1936). We are not equally influenced by everyone, but rather, are more influenced by those with whom we more closely identify (Festinger, 1954; Tajfel, 1982; Turner et al., 1987) and whose opinions are of greater value to us (Latane, 1981). For example, previous research has shown that college student drinking is more strongly associated with perceived approval of friends relative to other students (Baer, Stacy, & Larimer, 1991). The present paper offers preliminary evidence for a hierarchical organization of normative social influences on 21st birthday drinking.

21st birthday drinking

In recent years, 21st birthday celebratory drinking has received increasing attention, due largely to the propagation of dangerous and sometimes fatal drinking traditions, such as attempting to drink one shot for each year of life, sometimes in a single hour (Hembroff, Atkin, Martell, McCue, & Greenamyer, 2007; Neighbors, Spieker, Oster-Aaland, Lewis, & Bergstrom, 2005; Rutledge, Park, & Sher, 2008). Intervention strategies designed to curb dangerous 21st birthday drinking have incorporated social norms components and have met with varying degrees of success (Smith et al., 2006; Hembroff et al., 2007; Lewis, Neighbors, Lee, & Oster-Aaland, 2008; Neighbors, Lee, Lewis, Fossos, & Walter, 2009). A better understanding of the relative influence of social norms on 21st birthday drinking may offer practical suggestions for more effective interventions.

Hierarchical norms theory

According to this perspective, social networks and associated norms can be thought of as being hierarchically arranged, with smaller and more proximal networks existing within larger and more distal networks. According to this conceptualization, our close friends can be thought of as a subset of the people with whom we are acquainted. Our acquaintances, in turn, can be thought of as a subset of members of the subpopulation with which we identify. The subpopulation is, in turn, a subset of the global population. While this is admittedly an oversimplified model, as there are likely to be many networks at each of multiple levels for any given individual, it offers unique concrete predictions regarding the relative influence of norms on personal behavior. Moreover, we propose that the influences of more distal norms on behavior are mediated by the influence of more proximal norms. That is, the influence of

perceptions of societal beliefs regarding a particular behavior will be due, at least in part, to their association with more subpopulation norms, which will, in turn, be due in part to their associated with more proximal norms. In the present paper, we provide preliminary evidence for the hierarchical influence of norms at varying levels of specificity by considering the influence of norms for 21st birthday drinking among college students at three levels (close friends, other college students, and society).

Methods

Participants were college students turning 21 years old at a large university in the Northwestern U.S. (N = 293; 58.0% female, 42.0% male; 67.5% Caucasian, 21.2% Asian/Pacific Islander, 2.4% African American, 2.4% Hispanic American, and 6.5% Other). The study took place over a 3½ -month period. One week prior to their birthday, college students were asked to complete an online screening survey about their intentions regarding their upcoming 21st birthday celebration, with a response rate of 48%. The study focused on assessing a web-based intervention designed to reduce risky drinking during 21st birthday celebrations (see Neighbors et al., 2009 for details). Eligible students were students who intended to engage in alcohol use during their birthdays (i.e., those who reported intending to consume at least two drinks during their birthday celebration) and were directed to the baseline survey immediately following the screening. The baseline survey included questions about their societal beliefs, their subpopulation perceived norms of college students, and their proximal norms of friends' expectations for their own 21st birthday drinking, as described below. In addition, a follow-up survey (post-birthday) assessed actual behaviors during the participant's birthday week.

Measures

Societal norms were presumed to underlay general perceptions regarding the extent to which 21st birthdays are a time for excessive celebration. Prior to their 21st birthdays, students reported their beliefs regarding the extent to which 21st birthdays are a time of celebration, which was computed as a mean of 5 items (α=.88; e.g., "21st birthdays are a time to go all out") on a scale of 1=*strongly disagree* to 7=*strongly agree*.

Subpopulation norms were operationalized as perceptions of 21st birthday drinking by other college students. Prior to their 21st birthday, participants were asked, "How many drinks on average do you think a typical [name of institution] student consumes on their 21st birthday?" Response options were from *0 drinks* to *25 or more drinks*.

Proximal norms were operationalized as perceptions of friends' approval and expectations for drinking on one's 21st birthday. Prior to their 21st birthday, participants were asked, "How much do you think your friends will want you to drink on your 21st birthday?" Response options were from *0 drinks* to *25 or more drinks*.

Drinks consumed Following their birthday, participants reported the actual number of drinks they consumed on their 21st birthday. Response options were from *0 drinks* to *25 or more drinks*.

Results

Means, standard deviations, ranges, and inter-correlations of the predictor variables are shown in Table 1. Societal norms, subpopulation norms, proximal norms, and actual drinking were all significantly correlated with one another.

A hierarchical linear regression analysis was used to predict the number of actual drinks consumed on participants' 21st birthday by gender (Step 1), societal norms (Step 2), subpopulation norms (Step 3), proximal norms (Step 4), and interactions of gender by each of the other predictors (Step 5). In all steps, men reported drinking significantly more drinks on their birthday celebration compared to women (results are shown in Table 2). On Step 2, societal norms about 21st birthdays were significantly associated with consuming more birthday drinks. However, this effect was weakened with the addition of subpopulation norms in Step 3 and was no longer significant with the addition of proximal friends' norms in Step 4. Higher perceived subpopulation norms of average student drinking remained a significant predictor of consuming more drinks, and proximal norms of friends' expectations explained additional variance in consuming more birthday drinks when added on Step 4. Adding interactions of gender by societal norms, subpopulation norms, and proximal norms did not predict a significant amount of variance; therefore, interactions are not shown.

Mediation analyses were conducted using MacKinnon and colleagues' AB products method (see MacKinnon, Fairchild, & Fritz, 2007) and tested the indirect effects of more global norms on drinking through more proximal norms. Three tests were conducted. First, we evaluated whether subpopulation norms mediated the relationship between societal norms and 21st birthday drinking. Results indicated a significant indirect effect, $Z = 2.86$, $p < .01$, suggesting that the association between societal norms and actual drinking was at least in part due to the influence of subpopulation norms for other students. The second test evaluated whether proximal norms of friends mediated the influence of societal norms on 21st birthday drinking. Results indicated that the indirect effect was significant, $Z = 3.67$, $p < .001$ again providing support for mediation. Finally, we examined whether proximal norms of friends mediated the association between subpopulation norms for other students on 21st birthday drinking. Results again revealed a significant indirect effect, $Z = 7.15$, $p < .001$.

Discussion

It is well documented that perceived norms of drinking predict alcohol use behavior (Neighbors, Lee et al., 2007; Perkins, 2002). However, the relative influence of different types of norms, for example comparing norms for reference groups with varying proximity to the individual, are less well known. In this study, we found support for the hierarchical norms theory. Societal norms (i.e., beliefs about the celebratory nature of 21st birthdays in general) predicted 21st birthday drinking only before the other norms were considered. Subpopulation norms (i.e., perceptions of behavior of other students at the same university) were stronger predictors of actual birthday drinking before proximal norms for friends were included. Over and above the societal and subpopulation norms, proximal norms for friends were uniquely associated with 21st birthday drinking behavior.

Interventions to reduce extreme negative consequences of high-risk event-specific drinking often incorporate social norms (Hembroff et al., 2007; Lewis et al., 2008; Neighbors et al., 2005, 2009). These results suggest that including more proximal norms, such as perceptions of the attitudes, expectations, and behaviors of individuals closer to the intervention participant, may increase the effectiveness of these interventions. In addition, for the highest risk students in heavy-drinking peer groups, more intensive intervention and treatment may be required. The current study is limited in scope by including only individuals who intended to drink more than two drinks for a single event (i.e., 21st birthday) and who attended a particular university. Results regarding the hierarchy of norms should be replicated for other events and for typical student drinking. In addition, measures of the context of birthday drinking, including whether friends were encouraging or discouraging excessive drinking, could provide additional understanding of the social influences on

alcohol use behavior among college students. Of course, including more proximal norms (e.g., of friendship groups) is more labor-intensive for intervention programs, given the intricacies of these social networks. However, understanding the perceived and real social contexts of college student drinking may be an essential component for predicting behavior and promoting health.

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Table 1

Descriptive Statistics and Correlations of 21st Birthday Perceptions and Behavior

	M(SD)	Range	1	2	3	4
1. Societal Norms	5.15(1.19)	1.2–7.0	-			
2. Subpopulation Norms	9.68(4.12)	3–23	.18**	-		
3. Proximal Norms	11.82(6.61)	0–25	.23***	.61***	-	
4. Drinks Consumed	6.70(5.86)	0–29	.16**	.44***	.45***	-

Note. $N = 293$;

** $p < .01$,

*** $p < .001$.

Table 2

Regressions Predicting Spring Break Drinking

		Drinks Consumed on 21st Birthday		
		B (SE)	**β**	**ΔR^2**
Step 1	Male Gender	2.15 (0.70)**	0.18	.03**
Step 2	Male Gender	2.49 (0.69)***	0.21	.04**
	Societal Norms	0.99 (0.29)**	0.20	
Step 3	Male Gender	2.13 (0.64)**	0.18	.16***
	Societal Norms	0.59 (0.27)*	0.12	
	Subpopulation Norms	0.58 (0.08)***	0.41	
Step 4	Male Gender	1.29 (0.68)**	0.11	.03**
	Societal Norms	0.39 (0.27)	0.08	
	Subpopulation Norms	0.39 (0.10)***	0.27	
	Proximal Norms	0.21 (0.07)**	0.23	
Total				.26***

Note. $N = 281$;

** $p < .01$

*** $p < .001$.