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## Predictors of motivation to change alcohol use among referred college students<sup>☆</sup>

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### Abstract

The current study investigated motivation and its relationship with alcohol use and life satisfaction. Participants were 49 undergraduates referred to a university-based clinic to participate in a brief alcohol intervention. All participants completed measures assessing readiness to change drinking, frequency of alcohol use and related problems, and life satisfaction. As hypothesized, higher levels of motivation to change drinking were related to higher frequency and quantity of alcohol use, alcohol-related problems, and lower levels of life satisfaction. Results indicate the importance of assessing motivation in students referred to receive alcohol interventions.

### Keywords

Alcohol; Motivation; Life satisfaction; College students

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A recent nationwide survey found that college students report an average of 72 past-year drinking days, 44 heavy drinking days, and 21 episodes of intoxication (Chen, Dufour, & Yi, 2004/2005). These drinking patterns are associated with risky behaviors (e.g., drinking and driving) and negative consequences. Although some students reduce their drinking following a significant alcohol-related incident or an accumulation of incidents (Barnett, Goldstein, Murphy, Colby, & Monti, 2006; Vik, Cellucci, & Ivers, 2003), many students continue to drink heavily with minimal problem recognition or motivation to change their drinking.

The most efficacious interventions for college drinkers are designed to increase motivation to change (Larimer, Cronce, Lee, & Kilmer, 2004/2005). However, despite the fact that motivation is recognized as a critical intervention target (Miller & Rollnick, 2002), little is known about the variables related to motivation to change drinking. Studies examining the relationship between alcohol use and motivation among referred college student drinkers have produced mixed results; one reported a positive relation between alcohol use variables and motivation to change (Caldwell, 2002), whereas another found that motivation to change was inversely related to pretreatment levels of drinking and related problems (Barnett et al., 2006). Since drinking is often associated positive social outcomes (Borsari & Carey, 2006;

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Murphy, McDevitt-Murphy, & Barnett, 2005) and not necessarily associated with decreased functioning (Nyström, 1992; Paschall & Freisthler, 2003), motivation to change may also be linked to life satisfaction and the quality of alcohol-free pursuits (e.g., Cox & Klinger, 2004). In fact, one recent study reported that while alcohol-related problems were associated with decreased life satisfaction in a general sample of college students, males reported a positive relationship between alcohol use and social belongingness (Murphy, Hoyme, Colby, & Borsari, 2006).

The current study examined predictors of motivation to change alcohol use among a sample of college students referred to a brief alcohol intervention. This study builds on previous research by including measures of both life satisfaction and alcohol consumption and related problems. We hypothesized that students with high levels of alcohol use and related problems, and decreased life satisfaction, would report higher levels of motivation.

## 1. Methods

### 1.1. Participants

Participants were 49 undergraduates (59.2% male; *M* age=20.3, 96% Caucasian) from a large southern university who completed measures as part of a BASICS intervention (Brief Alcohol Screening and Intervention for College Students; Dimeff, Baer, Kivlahan, & Marlatt, 1999). All clients were referred to a campus-based clinic following a specific alcohol related incident, and interventions were completed between October of 2001 and April of 2004. The most common referral sources were campus based counseling and medical services (37%), the legal system (29%), and fraternity/sorority houses (20%).

### 1.2. Measures

Current drinking patterns were assessed with the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). Alcohol-related problems were assessed with the 23-items Rutgers Alcohol Problem Inventory (RAPI; White & Labouvie, 1989); the RAPI was internally reliable ( $\alpha=.92$ ) in the current sample. A 9-item version (Allen & Columbus, 1995) of the Readiness to Change Questionnaire (RCQ; Heather, Rollnick, & Bell, 1993) was used to measure participants' motivation or readiness to change their current drinking patterns. Participants received a score for each of the three stages of change scores (precontemplation, contemplation, and action) and a stage designation based on their highest stage score. All three scales were internally reliable (precontemplation=.67, contemplation=.83, action= $\alpha=.70$ ). Present and expected future life satisfaction was measured with the Temporal Satisfaction With Life Scale (TSWLS; Pavot, Diener, & Suh, 1998). The Extended Satisfaction With Life Scale (ESWLS; Alfonso, Allison, Rader, & Gorman, 1996) was used to measure satisfaction with social life, education, family, and relationships. All of the scales were internally reliable (alphas range from .75 to .97).

## 2. Results

Descriptive statistics for all variables are presented in Table 1. There were no significant gender differences on any of the variables, and so combined data is presented. Forty-six of the participants reported consuming alcohol during the past month.

### 2.1. Relationship between readiness to change and alcohol use

Correlations between the three subscales of the RCQ and measures of alcohol use are presented in Table 2. There were moderate to strong inverse relationships between precontemplation scores and indices of alcohol use and problems. In contrast, there were moderate to strong positive relationships between contemplation scores and the alcohol measures. The action score

was positively related to the amount of alcohol consumed during a typical week and related problems. A series of one-way ANOVA's (Table 3) indicated that stage designation was significantly related to the number of standard drinks consumed during a typical week, [ $F(2, 34)=4.03, p<.05$ ], occasions of binge drinking [ $F(2, 45)=4.66, p<.05$ ] and alcohol related problems [ $F(2, 43)=5.11, p<.05$ ]. Motivation to change was also marginally related to the frequency of alcohol use [ $F(2, 46)=2.46, p=.096$ ]. Post-hoc analyses indicated that participants in the precontemplation stage consumed less alcohol during a typical week, engaged in fewer occasions of binge drinking and reported fewer alcohol-related problems than those in the contemplation and action stages. Participants in the precontemplation stages also reported drinking on fewer occasions than participants in the contemplation stage.

## 2.2. Relationship between readiness to change and life satisfaction

Correlations between life satisfaction and the readiness to change scores are presented in Table 2. There were positive relationships between precontemplation scores and general, educational and perceived future life satisfaction. Furthermore, there were moderate inverse relationships between contemplation scores and several life satisfaction domains. One-way ANOVA's indicated that motivation to decrease alcohol use was significantly related to educational [ $F(2, 47)=4.43, p<.05$ ] and perceived future [ $F(2, 39)=4.00, p<.05$ ] life satisfaction, and the relationship approached significance for the general satisfaction scale [ $F(2, 43)=3.11, p=.055$ ]. Post-hoc analyses indicated that participants in the precontemplation stage reported the highest levels of satisfaction.

## 3. Discussion

While a host of clinical theories suggest that motivation to change is a key target of alcohol treatment and predictive of outcome (e.g., Miller & Rollnick, 2002), research on factors that predict motivation at the outset of treatment is limited. The current study sought to determine if variables related to alcohol use and life satisfaction would serve as useful predictors of motivation to change in a sample of college students referred to a brief alcohol intervention. Increased alcohol consumption and related problems were positively related to higher levels of motivation, with the strongest relationships seen between alcohol variables and the RCQ's contemplation scale. Conversely, students with low levels of alcohol use and related problems were more likely to endorse statements indicative of little motivation to change. The positive relation between drinking and motivation is consistent with Caldwell's (2002) findings, but inconsistent with Barnett et al's (2006) finding that lighter drinkers reported greater motivation to reduce their drinking following an alcohol-related event. The participants in Barnett et al's study were relatively light drinkers (mean drinks per week=7.13 vs. 25.08 in this study) who were referred to an intervention following a single alcohol-related incident. The lighter drinking students in that sample (which included 66.5% first year students) may have been neophyte drinkers who, following an aversive event and university sanction, were more motivated to reduce or stop drinking than the more experienced drinkers in the sample. In contrast, the vast majority of students in the present study were established drinkers, and among these students more drinking and negative consequences may lead to greater consideration of change.

Increased motivation to change was also related to low levels of satisfaction; this relationship was most clearly demonstrated by the inverse relationship between the contemplation and life satisfaction scales. There was also a significant positive relationship between life satisfaction domains and the precontemplation scale. This pattern of results is consistent with research indicating that drinking can interfere with relationships, education, and other important life goals (Murphy et al., 2006; Simons, Christopher, & McLaury, 2004), and that this impairment

can in turn motivate problem recognition and change efforts (Sobell, Ellingstad, & Sobell, 2000).

Several features of the current study, including the small sample size, the use of multiple comparisons, and the presentation of non-significant trends, suggest that these results should be interpreted with caution. Future research with a larger sample would bolster confidence in our findings and allow for analyses that can simultaneously model the effects of both alcohol use and life satisfaction. As with any self-report study, there are issues with the reliability and accuracy of the subjects' responses. Although research using collateral informants has failed to find systematic self-report biases, even in students referred to receive alcohol interventions (La Forge, Borsari, & Baer, 2005), it is possible that students misrepresented their alcohol use and problems. Finally, it is noteworthy that the action scale demonstrated little or no relationship with the alcohol and life satisfaction measures. However, it may be that multidimensional measures of motivation are required to capture the complex relationship between alcohol use, life satisfaction, and motivation. Strong relationships between alcohol use, life satisfaction, and scales reflecting recognition of problems were found in both the current (contemplation) and the Caldwell (2002) study (acknowledging problems), but relatively weak or no relationships were found between alcohol use and scales measuring actual behavioral changes (action and making changes, respectively). Thus, while patterns of alcohol use, alcohol related problems, and life satisfaction may predict willingness to recognize problems and consider changes, other factors may be more important determinants of actual changes in drinking behavior.

Despite these limitations, the current results have implications for treatment of college drinkers. Overall, our results suggest that referred students who report heavy drinking, negative alcohol-related consequences, and less satisfying lives are most likely to consider making changes in their use of alcohol. These students may benefit from skills based or behavioral interventions. Students who fail to recognize the problems related to their alcohol use and the impact it is having on various life domains require motivational enhancement strategies aimed at increasing problem recognition prior to efforts aimed directly at reducing drinking (Dimeff et al., 1999; Miller & Rollnick, 2002). Future research will need to examine the efficacy of tailoring interventions to a client's initial level of motivation to reduce their substance use, as well as making quality of life domains a primary focus of treatment.

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**Table 1**  
Descriptive data for key variables

	Mean	SD	Minimum	Maximum
<i>Alcohol measures</i>				
Dinking occasions	10.04	7.32	0.00	28.00
Drinks per week	25.08	18.34	0.00	84.00
Binge episodes	7.63	7.25	0.00	27.00
RAPI total	12.09	12.07	0.00	45.00
<i>Readiness to Change</i>				
Precontemplation	-.35	2.47	-6.00	4.00
Contemplation	.78	3.06	-6.00	6.00
Action	1.35	2.91	-6.00	6.00
<i>Life satisfaction</i>				
General	24.33	7.17	6.00	35.00
Social	26.98	6.54	6.00	35.00
Education	27.09	4.06	17.00	35.00
Family	28.96	7.08	5.00	35.00
Relationships	23.05	8.83	2.00	35.00
Future	24.16	5.78	5.00	35.00

**Table 2**  
Correlations between motivation, alcohol use, and life satisfaction

	Precontemplation	Contemplation	Action
<i>Alcohol measures</i>			
Drinking occasions	-.47**	.44**	.04
Drinks per week	-.61**	.61**	.40*
Binge episode	-.67**	.52**	.13
RAPI total	-.74**	.69**	.30*
<i>Life Satisfaction</i>			
General	.45**	-.54**	-.28 <sup>#</sup>
Social	.25 <sup>#</sup>	-.37*	-.24
Education	.36*	-.50**	-.19
Family	.11	-.27 <sup>#</sup>	-.16
Relationships	.15	-.18	-.10
Future	.32*	-.44**	-.13

<sup>#</sup>  
 $p < .10$

\*  
 $p < .05$

\*\*  
 $p < .01$ .

**Table 3**  
Alcohol use and life satisfaction across motivation subgroups

	<b>Precontemplation</b>	<b>Contemplation</b>	<b>Action</b>	
	<b>(n=12)</b>	<b>(n=14)</b>	<b>(n=23)</b>	<b>Group differences</b>
	<b>Mean (SD)</b>	<b>Mean (SD)</b>	<b>Mean (SD)</b>	
<i>Alcohol Measures</i>				
Drinking occasions	7.08 (4.64)	13.21 (8.85)	9.65 (6.98) <sup>#</sup>	C>P
Drinks per week	12.10 (5.97)	30.80 (16.29)	29.35 (21.04) <sup>*</sup>	C, A>P
Binge episodes	3.17 (2.82)	11.38 (7.77)	7.83 (7.48) <sup>*</sup>	C, A>P
RAPI score	3.10 (3.25)	17.92 (13.29)	12.70 (11.85) <sup>*</sup>	C, A>P
<i>Life satisfaction</i>				
General	28.82 (3.54)	22.69 (6.88)	23.05 (7.96) <sup>#</sup>	P>A, C
Social	28.64 (6.12)	25.77 (5.95)	26.86 (7.16)	-
Education	29.90 (2.33)	25.69 (4.85)	26.63 (3.68) <sup>*</sup>	P>A, C
Family	31.91 (3.27)	28.23 (8.09)	27.91 (7.68)	-
Relationships	25.50 (6.54)	20.00 (10.50)	23.89 (8.46)	-
Future	27.82 (4.49)	22.08 (6.99)	23.45 (4.99) <sup>*</sup>	P>A, C

Group differences are based on post-hoc analyses and a report for all results are at  $p > .10$  or below.

<sup>#</sup>  $p < .10$  results refer to the overall group differences from the ANOVA.

<sup>\*</sup>  $p < .05$  results refer to the overall group differences from the ANOVA.

<sup>\*\*</sup>  $p < .01$  results refer to the overall group differences from the ANOVA.