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A PROSPECTIVE EVALUATION OF THE RELATIONSHIP BETWEEN REASONS FOR DRINKING AND DSM-IV ALCOHOL-USE DISORDERS

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Abstract — Previous research has demonstrated an association between self-reported reasons for drinking and alcohol consumption. The most consistent relationships have been demonstrated between alcohol consumption and drinking for positive affect enhancement and coping with negative affect. However, most of the results have been from cross-sectional research designs that have not controlled for diagnostic status. The present study was a prospective investigation of the relationship between reasons for drinking and the Diagnostic and Statistical Manual of Mental Disorders (4th ed.), diagnoses of alcohol abuse and dependence. Subjects consisted of 508 community residents (264 male and 244 female) who did not meet DSM-IV criteria for an alcohol-use disorder at a baseline interview, who completed a completely structured interview (AUDADIS) and a self-report assessment battery, and who were re-interviewed approximately 1 year later. Results indicated a significant relationship between baseline reasons for drinking and follow-up diagnostic classification. Drinking to reduce negative affect predicted having a DSM-IV alcohol dependence diagnosis at follow-up, but not a diagnosis of alcohol abuse. No significant association was demonstrated between the baseline motive of drinking for positive affect enhancement and a follow-up DSM-IV alcohol-use disorder. © 1998 Elsevier Science Ltd

Motivational models of alcohol use postulate that alcohol consumption is, in part, a function of the affective and situational consequences that follow alcohol use (e.g., Cox & Klinger, 1988). Consequences perceived as positive or desirable can reinforce drinking behavior, increasing the probability of alcohol consumption in the future under similar circumstances. Previous research on drinking motives indicates that selfreported reasons for drinking vary along two to four dimensions. These dimensions represent (1) negative affect reduction or coping (Cooper, Russell, Skinner, & Windle, 1992) (2) sociability or social enhancement (Celentano & McQueen, 1978), (3) enjoyment or positive affect enhancement (Cooper et al., 1992), and (4) social or interpersonal confidence (Smith, Abbey, & Scott, 1993). Previous studies have demonstrated significant associations between all of these drinking motives and many aspects of alcohol consumption including quantity of alcohol consumed per occassion, frequency of alcohol consumption, and frequency of intoxication (Abbey, Smith, & Scott, 1993; Cooper, Russell, & George, 1988). Significant associations have also been demonstrated between drinking motives and a DSM-III alcohol-dependence diagnosis when controlling for alcohol consumption patterns (Cooper et al., 1988).

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The evidence of an association between reasons for drinking alcohol and alcohol disorders has been obtained from cross-sectional and correlational designs. Such studies suggest an association but do not demonstrate a causal link. The present study employed a longitudinal design to assess the relationship between self-reported reasons for drinking and the subsequent diagnosis of a DSM-IV (American Psychiatric Association, 1994) alcohol disorder in a heavy-drinking community sample. Specifically, the reduction of negative affect and enhancement motives for drinking were assessed for their predictive utility in differentiating those who met criteria for alcohol abuse or dependence at a 1-year follow-up period from those who did not.

МЕТНОД

Sample

Subjects were household residents of a sociodemographically diverse area near New York City. The methods of the study have been previously presented (Hasin, Mc-Cloud, Li, & Endicott, 1996). In summary, households were designated via random digit dialing and a randomly designated member of each household was screened for eligibility in the study. Eligibility criteria included five or more drinks at least once in the year prior to the screening, being within the ages of 18 and 65 years, and speaking at least some English. Eligibility status and screening were conducted on 81% of the designated households. Females were oversampled. Of those eligible to participate, 92% participated in the structured interview. Follow-up interviews and diagnostic data were obtained from 90% (n = 876) of the baseline subjects approximately 1 year later (Mean = 13.6 months). No statistically significant differences were demonstrated between those followed up and those not followed for the variables of age, sex, race, average ethanol consumption at baseline, and reasons for drinking.

Subjects

Subjects consisted of 508 (264 male and 244 female) community residents who *did not* meet the criteria for either a DSM-IV alcohol dependence or abuse diagnosis at the baseline interview. Of the 508 subjects, approximately 6% (n = 32) met the DSM-IV criteria of alcohol abuse and 4% (n = 19) met the DSM-IV criteria for alcohol dependence at the 1-year follow-up interview. Subject characteristics are presented by follow-up status in Table 1.

Measures

The Alcohol-Use Disorders and Associated Disabilities Interview Schedule (AU-DADIS). The AUDADIS is a fully structured interview designed for trained interveiwers who are not clinicians (Grant & Hasin, 1992). In the AUDADIS, the symptoms and criteria of alcohol-use disorders are covered in detail for the previous 12 months (current) and the past (excluding the 12 months previous to the interview). The AUDADIS diagnosis of alcohol dependence requires that symptoms be time-clustered, representing a syndrome. Computer algorithms operationalize the diagnostic criteria. For this study, the follow-up DSM-IV diagnoses of alcohol abuse and dependence were made independently of past diagnostic status.

Baseline alcohol-consumption measures were derived from questions in the AUDA-DIS consumption section. Drinking variables included the number of days in the past year subjects had consumed more than five drinks, the number of days within the past year that subjects drank to intoxication, and avervage daily ethanol intake for the prior year. The average daily ethanol intake was calculated in several steps. First, the annual volume of alcohol intake was computed by multiplying the ounces of alcohol intake per drinking day by the number of drinking days. Second, the annual volume in ounces was converted to ethanol amounts using the ethanol conversion factors of .045 (beer), .121 (wine), and .409 (liquor) (Kling, 1989). Third, the annual volume of ethanol intake was summed across each beverage type and then divided by 365.

Beck Depression Inventory (BDI). The Beck Depression Inventory is a 21-item scale designed to the assess affective, cognitive, and somatic indicators of depression. The BDI has amassed considerable reliability and validity data in clinical and community samples (Beck, Steer, & Barbin, 1988). In the present sample the BDI demonstrated good internal consistency (Cronbach's $\alpha = .85$).

Reasons for drinking. The Reason for Drinking Scale (RDS) was a component of a self-administerd questionnaire completed by all subjects. The RDS consists of 35 Likert-type items ranging on a scale from 1 "agree strongly" to 5 "disagree strongly." The items were reverse-keyed during scoring so than higher scores represented stronger agreement with a particular item. The RDS consists of four factors including the two factors that are the focus of the present study: negative affect reduction (Cronbach's $\alpha = .87$) and enhancement (Cronbach's $\alpha = .65$) motives.

Variables	DSM-IV Follow-up diagnosis			
	No Diagnosis $(n = 457)$	Abuse $(n = 32)$	Dependence $(n = 19)$	
Age	34.8 (11.5)	31.9 (9.29)	32.8 (12.9)	
Gender				
Male	49.9% (228)	75% (24)	63.2% (12)	
Female	50.1% (229)	25% (8)	36.8% (7)	
Education				
> High school	75.2% (345)	81.3% (26)	94.7% (18)	
\leq High school	24.3% (112)	18.7% (6)	5.3% (1)	
Ethnicity	× ,			
White	81.6% (373)	93.8% (30)	84.2% (16)	
non-White	18.4% (84)	6.2% (2)	15.8% (3)	
Marital status			~ /	
Married	44.4% (203)	37.5% (12)	31.6% (6)	
Single	55.6% (254)	62.5% (20)	68.4% (13)	
Reasons for drinking				
Negative affect	1.63 (.62)	1.84 (.53)	2.19 (.83)	
Enhancement	3.16 (.86)	3.58 (.69)	3.51 (.86)	
Alcohol consumption				
Daily ethanol intake	.87 (1.59)	.96 (78)	1.74 (2.76)	
Days of intoxication	4.83 (9.6)	12.78 (18.9)	13.68 (40.9)	
(past year)				
Five or more drinks	23.9 (54.3)	35.12 (47.2)	50.36 (103.5)	
(Occasions past year)	2.87(5.20)	224 (28)	6 26 (6 76)	
Best DSM IV abuse	3.67(3.29)	2.34(2.0)	5.20(0.70)	
r ast DSWIIV doppedance	4.10%(19) 17.5%(15)	9.3% (3) 46.0% (15)	3.5%(1) 15.8%(2)	
Past year treatment	17.5%(15) 5%(2)	40.9% (13)	13.0%(3)	
rast year treatment	.3 % (2)	3 % (1)	0% (0)	

Table 1. Subject characteristics by DSM-IV diagnoses at 1-year follow-up

Note. All percentages are presented with frequencies. All other values represent means and (standard deviations).

RESULTS

Bivariate analyses

Significant associations were demonstrated between the follow-up DSM-IV diagnosis of alcohol abuse and gender ($\chi^2_{(1)} = 7.54$, p = .006), negative affect reduction (r = .09, p < .05), enhancement (r = .11, p < .05), frequency of intoxication (r = .21, p < .001), frequency of drinking five or more drinks (r = 12, p < .01), and a past DSM-IV alcohol-disorder diagnosis ($\chi^2_{(1)} = 19.66$, p = .012). No statistically significant associations were demonstrated between the follow-up diagnosis of alcohol abuse and the demographic variables of marital status ($\chi^2_{(1)} = .58$, p = .45), education ($\chi^2_{(1)} = .54$, p = .46), and ethnicity ($\chi^2_{(1)} = 3.04$, p = .08). Significant associations were demonstrated between the follow-up DSM-IV diagnosis of alcohol dependence and negative affect reduction (r = .15, p < .001) and alcohol dependence and average daily ethanol consumption (r = .13, p < .01). No significant associations were demonstrated between the follow-up DSM-IV diagnosis of alcohol dependence and the demographic characteristics of gender ($\chi^2_{(1)} = 1.30$, p = .26), education ($\chi^2_{(1)} = 1.22$, p = .269), ethnicity ($\chi^2_{(1)} = .082$, p = .78), and marital status ($\chi^2_{(1)} = 3.73$, p = .053).

Multinomial logistic regression

Multivariate group comparisons were conducted using multinomial logistic regression. This regression technique allowed for the analysis of a multicategory criterion variable (i.e., follow-up DSM-IV alcohol diagnosis), using one category as the referent group (i.e., no alcohol diagnosis). Results of the final multinomial logistic model are presented in Table 2. A follow-up DSM-IV diagnosis of alcohol dependence was significantly related to the reason for drinking of negative affect reduction. The direction of the relationship indicated a 1-point increase in a drinking for negative affect reduction score was associated with a 2.9 increase in the odds of a DSM-IV diagnosis of alcohol dependence, versus no DSM-IV alcohol disorder, at the 1-year follow-up. No statistically significant effects were found for reasons for drinking and a follow-up di-

Variable ^a	Alcohol Abuse vs. No Diagnosis		Alcohol Dependence vs. No Diagnosis	
	b (SE)	Odds Ratio (95% CI)	b (SE)	Odds Ratio (95% CI)
Demographics				
Age	02(.02)	.98 (.94; 1.03)	02(.02)	.99 (.93; 1.03)
Gender (male)	1.02 (.45)	3.03 (1.15; 6.69)*	.48 (.54)	1.61 (.55; 4.66)
Reasons for drinking				
Negative affect	.47 (.35)	1.59 (.80; 3.18)	1.08 (.39)	2.94 (1.37; 6.35)*
Enhancement	.27 (.28)	1.31 (.79; 2.29)	08 (.35)	.92 (.46; 1.84)
Alcohol consumption	· · · ·		· · · ·	
Daily ethanol	25 (.23)	.78 (.49; 1.22)	.02 (.09)	1.02 (.84; 1.24)
Five or more drinks	.001 (.004)	1.00 (.99; 1.01)	.001 (.004)	1.00 (.99; 1.01)
Intoxication	.03 (.01)	1.03 (1.01; 1.05)*	.02 (.01)	1.03 (.99; 1.04)
Past diagnostic history	1.59 (.40)	4.90 (2.23; 10.6)*	36(.63)	.70 (.20; 2.39)
Beck Depressive Inventory	12(.07)	.89 (.77; 1.00)	.04 (.05)	1.04 (.98; 1.11)
Constant	-4.72 (1.2)		-4.84 (1.4)	

Table 2. Multinomial logistic regression analyses for the alcohol-abuse group vs. the no-diagnosis group and the alcohol dependence vs. no-diagnosis group

^aCategorical variables were coded in the direction denoted parenthetically.

*Denotes statistical significance at the a priori $\alpha = .05$.

agnosis of alcohol abuse (relative to no diagnosis), although some control variables did show a significant relationship (Table 2).

DISCUSSION

Results of the present study support the contention that drinking as a way to cope with negative affect is a risk factor for a DSM-IV diagnosis of alcohol dependence. Furthermore, these results indicate that drinking for negative affect reduction predicted diagnostic outcome independent of drinking patterns, a previous DSM-IV alcohol disorder, and depressive symptoms. These findings are consistent with previous cross-sectional studies showing associations between drinking for coping with negative affect and a DSM-III diagnosis of alcohol dependence (Cooper et al., 1988) as well as individual DSM-III-R dependence symptoms (Cooper et al., 1992).

Drinking for enhancement was related to the diagnosis of alcohol abuse in the bivariate analysis, and was not related when demographic characteristics and drinking patterns were controlled. This finding is consistent with cross-sectional studies demonstrating no relationship between enhancement reasons and specific dependence criteria (Cooper et al., 1992). As all groups reported a fairly high level of enhancement motives, subjects perceived their alcohol use as promoting positive affect regardless of diagnostic status.

There are several limitations to the present study. First, data collection was initiated prior to the publication of a well-developed drinking motives assessment instrument (Cooper et al., 1992). Thus, the lower reliabilities in this study may have attenuated the magnitudes of association for the regression analysis. Second, a minority of the subjects did have a previous abuse or dependence diagnosis. Thus, the present results are not strictly reflective of the predictors of the initial onset of a DSM-IV alcohol disorder. Third, inclusion in the present study was dependent on consuming five or more drinks on at least one occasion within 1 year prior to the baseline interview. Thus, the results may not be generalizable to community residents with a very low frequency of alcohol consumption. Fourth, the small sample size for the alcohol-dependence group may have not provided enough statistical power for some of the comparisons. Thus, the present results should be replicated in larger prospective studies.

Depsite these limitations, the prospective nature of the present study allowed for the unique opportunity to assess the predictors of change in diagnostic status over time. The present findings support previous cross-sectional research in demonstrating that a negative affect reduction motive for alcohol use is a risk factor for a DSM-IV alcohol dependence diagnosis in a sample of heavy-drinking community residents. Further investigation of the specific psychosocial factors associated with alcohol consumption motives and an alcohol diagnosis would help identify the individual-contextual interactions that define at-risk alcohol users. For example, Cooper et al. (1992) suggested that those reporting alcohol use for coping with negative affect may be unable to exert volitional control over their drinking. This skills deficit would be particularly salient when coupled with drinking environments that are less likely to challenge maladaptive drinking patterns.

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