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Drinking to Cope and Alcohol Use and Abuse in Unipolar Depression: A 10-Year Model

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This study examined drinking to cope with distress and drinking behavior in a baseline sample of 412 unipolar depressed patients assessed 4 times over a 10-year period. Baseline drinking to cope operated prospectively as a risk factor for more alcohol consumption at 1-, 4-, and 10-year follow-ups and for more drinking problems at 1- and 4-year follow-ups. Findings elucidate a key mechanism in this process by showing that drinking to cope strengthened the link between depressive symptoms and drinking behavior. Individuals who had a stronger propensity to drink to cope at baseline showed a stronger connection between depressive symptoms and both alcohol consumption and drinking problems.

Mental health professionals are focusing increasingly on the high co-occurrence of depression and alcohol-related problems (Kessler et al., 1997; Swendsen & Merikangas, 2000). Examining data from over 20,000 persons interviewed in the National Institute of Mental Health Epidemiological Catchment Area program, Regier et al. (1990) found that alcohol abuse occurred among more than one fifth of individuals with an affective disorder. The present study uses a baseline sample of 412 depressed patients to investigate the prospective role of drinking to cope at baseline as a risk factor for more alcohol consumption and drinking problems over a 10-year period. In addition, we elucidate the conditions under which depressed patients turn to alcohol by examining how drinking to cope strengthens the association between depressive symptoms and drinking behavior.

Coping Strategies and Alcohol Use and Abuse

Cross-sectional studies of community samples (Cooper, Russell, & George, 1988; Cooper, Russell, Skinner, Frone, & Mudar, 1992; Moos, Brennan, Fondacaro, & Moos, 1990) have shown an association between avoidant styles of coping with emotional distress and both alcohol use and drinking problems/abuse. Further evidence on coping and drinking behavior has emerged from cross-sectional studies focusing on drinking to cope—the tendency to use alcohol to escape, avoid, or otherwise regulate unpleasant emotions (Abbey, Smith, & Scott, 1993). In several community samples, drinking to cope has been associated with alcohol use (Abbey et al., 1993) and alcohol-related problems (Grunberg, Moore, Anderson-Connolly, & Greenberg, 1999).

Few studies have examined coping skills and drinking behavior among individuals with other psychiatric disorders. Exceptions are two studies based on 1-year and 2-year follow-ups with male substance abuse patients who also had a psychiatric diagnosis. In one study that focused on substance abuse patients who also had an Axis I or Axis II psychiatric disorder, a reliance on approach as compared with avoidance coping was associated with more abstinence and fewer psychiatric symptoms at a 1-year follow-up (Moggi, Ouimette, Moos, & Finney, 1999). In a second study, the use of avoidance coping strategies at a 1-year follow-up partially explained the link between posttraumatic stress disorder (PTSD) and poorer substance use outcomes among a subset of these dual-diagnosis patients (Ouimette, Finney, & Moos, 1999).

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Depressive Symptoms, Coping Strategies, and Drinking Behavior

The use of alcohol to regulate emotions represents a major class of drinking motives (Wills & Hirky, 1996). In a 6-month prospective study with alcohol-dependent subjects, negative emotional states operated as the most frequent precipitant of relapse (Hodgins, el-Guebaly, & Armstrong, 1995). Similarly, in an experimental study with alcoholic patients (Cooney et al., 1997), urge to drink in the context of both negative mood and exposure to an alcoholic beverage predicted a shorter time to relapse after discharge. Especially important, recent evidence suggests that psychiatric disorder intensifies the role of negative emotions in predicting alcohol-related thoughts and an urge to drink among problem drinkers (Zack, Toneatto, & MacLeod, 1999).

Integrating these findings pertaining to negative emotions with those pertaining to coping strategies, the association between depression and drinking behavior should be stronger among individuals who report consuming alcohol to manage emotional distress. Evidence from several studies with nonclinical samples supports this assertion. We examined drinking to cope with distress and drinking behavior in a nonclinical sample of community adults over a 10-year period (Holahan, Moos, Holahan, Cronkite, & Randall, 2001). Baseline drinking to cope predicted more alcohol consumption and drinking problems across the 10-year interval and strengthened the link between negative affect and drinking outcomes. Johnson and Gurin (1994) found that the co-occurrence of depressed mood and drinking problems was strongest among adults who most expected alcohol to elevate their mood. Grunberg and his colleagues (Grunberg et al., 1999) found that individuals who tended to think of alcohol as a way to cope with distress reported drinking more and having more alcohol-related problems in response to work stressors.

The Present Study

The present study is part of a longitudinal project on an initial group of 424 patients who entered treatment for unipolar depression and 424 matched community controls. In research with the depressed patients (Billings & Moos, 1985a; Swindle, Cronkite, & Moos, 1989) and comparing the depressed patients and community controls (Billings & Moos, 1985b; Cronkite, Moos, Twohey, Cohen, & Swindle, 1998; Moos, Cronkite, & Moos, 1998), we have described the course of depression from 1 year to 10 years after treatment intake. In research with the community controls, we have modeled the stress and coping process across 1 to 4 years (Holahan & Moos, 1987, 1990, 1991) and examined drinking to cope across 10 years (Holahan et al., 2001).

The present study extends our previous research on drinking to cope with the community controls (Holahan et al., 2001) to the sample of depressed patients. In addition, the present study extends the earlier research design by using a prospective model that controls for baseline drinking behavior as well as for autoregressive influences in drinking behavior across the three follow-up assessments. No other 10-year studies with this depressed patient sample have examined alcohol use. Moreover, to our knowledge no studies with any depressed patients have examined drinking to cope.

Although there is substantial comorbidity between clinical depression and alcohol-related problems (Regier et al., 1990; Swendsen & Merikangas, 2000), fundamental questions remain about the nature of the link between clinical depression and alcohol. Most important, we lack a conceptual understanding of (a) which clinically depressed individuals are at risk for alcohol-related problems and (b) the conditions under which such risk is most likely to be expressed.

The present study provided an opportunity to examine these issues with a baseline sample of 412 unipolar depressed patients across multiple time intervals. Two hypotheses were advanced. First, extending previous research on coping and drinking behavior among community samples (Abbey et al., 1993; Grunberg et al., 1999) and dual-diagnosis patients (Moggi et al., 1999; Ouimette et al., 1999), we predicted that baseline drinking to cope would be prospectively associated with more alcohol consumption and drinking problems across the 10-year period. Second, integrating previous research on negative emotions, psychiatric disorder, and drinking behavior (Zack et al., 1999) and on coping strategies, emotional distress, and drinking behavior among community samples (Grunberg et al., 1999; Holahan et al., 2001; Johnson & Gurin, 1994), we predicted that drinking to cope would strengthen the association between depression and both alcohol consumption and drinking problems. Finally, we conducted additional casewise analyses to more fully illustrate the potential clinical relevance of these findings.

Method

Sample Selection and Characteristics

The initial sample of patients involved 424 depressed persons who began a new treatment episode at one of five facilities. All patients had a unipolar depressive disorder according to the Research Diagnostic Criteria for Depression (Spitzer, Endicott, & Robins, 1978) and were age 18 or older (32% were inpatients and 68% were outpatients). On the basis of a chart review, patients were excluded if they had a current diagnosis of alcoholism or if significant alcohol abuse was noted in the past 6 months. Patients with concurrent neuropsychological, metabolic, or manic diagnoses were also excluded. Examples of other psychiatric diagnoses patients had received at any time were antisocial personality (3%, $n = 11$), obsessive–compulsive disorder (2%, $n = 9$), and schizophrenia (2%, $n = 8$).

All variables were assessed at four points in time over a 10-year period (baseline and 1-, 4-, and 10-year follow-ups). Participants were contacted initially at the treatment facility and were followed by mail and telephone contact. Of those contacted at baseline, 92% agreed to participate and 81% of these ($N = 424$) provided data. Twelve respondents did not have data on drinking to cope at baseline, resulting in a baseline sample of 412 for the present study. The participation rate for respondents who were living averaged 90% at each of the three follow-up assessments. At the 1-, 4-, and 10-year follow-ups, the number of participants was 395, 370, and 313, respectively (for more information on this 10-year sample, see Cronkite et al., 1998; Moos et al., 1998). Statistical analyses use all cases available for the respective analysis; beyond sample attrition, very few data were missing.

Individuals who continued to participate through the 10-year follow-up did not differ significantly at baseline on any of the study variables from those who did not continue to participate (t tests, $\alpha = .05$). At baseline, the present sample comprised 228 women (55%) and 184 men (45%), and the mean age of respondents was 40 years ($SD = 14.1$; range = 18–83 years). A total of 43% of respondents were married. The ethnic distribution of the

sample was primarily Caucasian (84%), with the remainder of the sample predominantly African American or Hispanic (each 4%). Mean annual family income was $18,000 ($SD$ = 10,000).

Measures

Detailed psychometric information on the measures is available in the *Health and Daily Living Form Manual* (*HDL*; Moos, Cronkite, & Finney, 1992). For examples of studies using these measures in the context of research on alcohol use and abuse, see Holahan et al. (2001), Moos, Finney, and Cronkite (1990), and Schutte, Hearst, and Moos (1997). For examples of studies using these measures in the context of stress and coping research, see Cronkite et al. (1998) and Holahan and Moos (1987, 1990, 1991).

Alcohol consumption. Respondents were asked: "Do you drink any alcoholic beverages (wine, beer, liquor)?" and, if yes, "On the days that you drank during the past month, how much did you usually drink?" Quantity was computed separately for wine, beer, and hard liquor on 6-point scales, ranging (in the case of hard liquor) from *none* (0) to *3 pints or more* (5). For each beverage, the quantity codes were converted to fluid ounces and multiplied by a weight to reflect ethanol content. The weighted quantity codes for each beverage were summed to obtain an overall index of number of ounces of ethanol consumed on a typical drinking day (to correct for skewness, 10 oz was used as a maximum score). In previous research (for a review, see Moos, et al., 1990), this measure has been found to relate to psychological, social, and occupational functioning more strongly than does the frequency of alcohol consumption.

Drinking problems. Drinking problems were tapped by an index of eight problems respondents experienced in the past year because of "too much drinking." Problem domains encompassed: "your health," "your job, "money problems," "family arguments," "hit someone," "trouble in the neighborhood," "trouble with the police," and "trouble with friends." The drinking problems score is the total number of items endorsed (Cronbach's $\alpha = .74$).

Drinking to cope. Consistent with the approach used most commonly to assess coping (Moos & Schaefer, 1993), respondents were asked to pick the "most important problem" they faced during the previous 12 months and to indicate how often they used each of a variety of coping strategies to manage it, from *not at all* (0) to *fairly often* (3). One strategy assessed drinking to cope in response to tension ("Tried to reduce tension by drinking more"). This operationalization of drinking to cope is similar to other measures that assess the "frequency of drinking to manage or cope with negative emotions" (Cooper, et al., 1992, p. 143). In the present sample of depressed patients, drinking to cope shows a 1-year stability of .55. To demonstrate the predictive importance of drinking to cope, we examined drinking to cope in hierarchical multiple regression analyses after controlling for nonalcohol-specific approach (24 items such as "made a plan of action and followed it") and avoidance (7 items such as "refused to believe that it happened") coping. With alcohol consumption, drinking to cope added significant incremental variance ($p < .01$) at all four assessments, adding on average an additional 20% to the explained variance. With drinking problems, drinking to cope added significant incremental variance ($p < .01$) at all four assessments, adding on average an additional 13% to the explained variance.

Depressive symptoms. Depressive symptoms were tapped by an index of 18 symptoms experienced during the previous month, derived from the Research Diagnostic Criteria (Spitzer, Endicott, & Robins, 1978). Examples of items are "feeling depressed (sad or blue)" and "feeling guilty, worthless, or down on yourself." Responses are on a 5-point scale reflecting how frequently symptoms were experienced, from *never* (0) to *often* (4). The depressive symptoms score is the sum of responses across the 18 items (Cronbach's $\alpha = .92$).

Results

Drinking to Cope as a Prospective Predictor of Drinking Behavior

Formulation of prospective model. We examined the prospective role of drinking to cope at baseline in predicting alcohol consumption and drinking problems (examined separately) in prospective models for each of the follow-up assessments using LISREL 8 (Jöreskog & Sörbom, 1996). First, controlling for baseline drinking behavior, we examined whether baseline drinking to cope was prospectively related to subsequent drinking behavior at each of the three follow-up assessments. Next, in addition to controlling for baseline drinking behavior, we controlled for the autoregressive influences in drinking behavior across the three follow-up assessments to examine whether the prospective predictive role of drinking to cope operated directly or indirectly through continuity in drinking behavior.

Variance–covariance matrices were used in the LISREL analyses with listwise deletion of missing values. The LISREL analyses control for gender and age; there were no significant interactions between drinking to cope and either gender or age. Correlations for variables in the prospective models are presented in Table 1. The mean for baseline drinking to cope was 1.59 (SD = 0.97). Means for alcohol consumption across Assessments 1 through 4 were 2.22 (SD = 2.19), 2.39 (SD = 2.29), 2.07 (SD = 2.27), and 1.43 (SD = 2.17), respectively. Means for drinking problems across Assessments 1 through 4 were 0.24 (SD = 0.81), 0.28 (SD = 0.93), 0.22 (SD = 0.84), and 0.18 (SD = 0.77), respectively.

Tests of prospective model. Controlling for baseline alcohol consumption, baseline drinking to cope was significantly ($p < .05$) prospectively related to alcohol consumption at all three follow-up assessments (n = 259). Including the autoregressive influences in drinking behavior across the three follow-up assessments indicated that the prospective predictive role of drinking to cope operated both directly and indirectly through continuity in alcohol consumption at the 4-year follow-up but only indirectly through continuity in alcohol consumption at the 10-year follow-up. The LISREL model for alcohol consumption is shown in the top half of Figure 1. A significant path between alcohol consumption at Time 2 and Time 4 (not shown to simplify the presentation) was included in the model.

Controlling for baseline drinking problems, baseline drinking to cope was significantly ($p < .05$) prospectively related to drinking

Table 1
Zero-Order Correlations Between Baseline Drinking to Cope and Drinking Behavior Across the Four Assessments

Variable	1	2	3	4	5
1. Baseline drinking to cope	—	.42	.30	.28	.22
2. Baseline drinking behavior	.39	—	.50	.34	.21
3. Year 1 drinking behavior	.35	.58	—	.37	.28
4. Year 4 drinking behavior	.18	.11	.15	—	.35
5. Year 10 drinking behavior	.16	.39	.26	.21	—

Note. Alcohol consumption is above the diagonal, and drinking problems are below the diagonal.

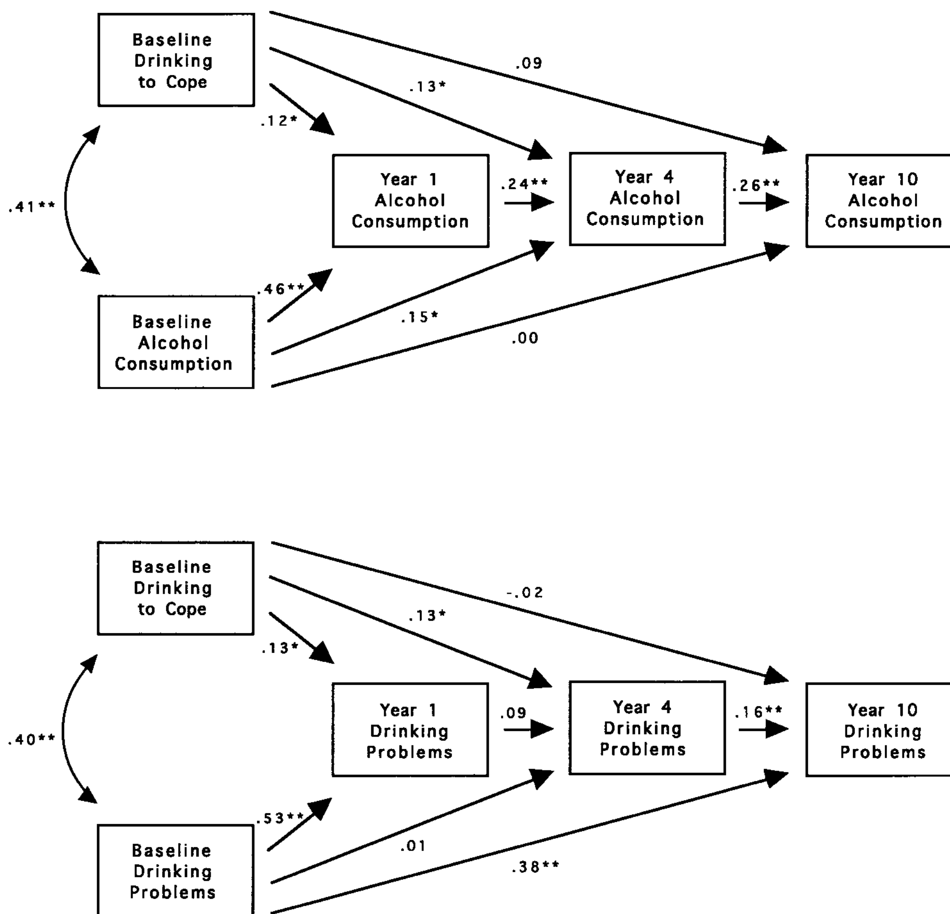

Figure 1. Results of the LISREL tests (standardized estimates) of 10-year structural equation models predicting alcohol consumption (top panel) and drinking problems (bottom panel). $*p < .05$; $**p < .01$.

problems at the 1- and 4-year follow-ups but not at the 10-year follow-up ($n = 285$). Including the autoregressive influences in drinking behavior across the three follow-up assessments indicated that the prospective predictive role of drinking to cope operated only directly in predicting drinking problems at the 4-year follow-up. The LISREL model for drinking problems is shown in the bottom half of Figure 1.

Drinking to Cope, Depressive Symptoms, and Drinking Behavior

Overview of data analysis strategy. To examine the role of drinking to cope in strengthening the association between depressive symptoms and drinking behavior at the individual level, we used hierarchical linear modeling (HLM), Version 4 (Bryk & Raudenbush, 1992). For example, within individuals (Level 1), we examined the contemporaneous relationship between depressive symptoms and each of the two drinking outcomes over repeated observations. These Level 1 relationships are represented by a regression equation for each individual. For example, a slope coefficient (B, unstandardized) is derived for each respondent, indicating how much that individual's alcohol consumption changes for each unit of change in depressive symptoms.

Between individuals (Level 2), we examined the association between individual differences in baseline drinking to cope and the individual slope coefficients from Level 1, which now functioned as outcome variables. These Level 2 relationships are represented by a new regression equation indicating the strength of association between baseline drinking to cope and the individual slope coefficients from Level 1. For example, a slope coefficient (G, unstandardized) is derived indicating how strongly baseline drinking to cope is associated with the depressive symptoms–alcohol consumption relationship. Time is not included in these models. Time was not significantly associated with either alcohol consumption or drinking problems independent of the time intercept. The HLM analyses controlled for gender and age; there were no significant interactions between drinking to cope and either gender or age.

Depressive symptoms and drinking behavior. First, we ran a Level 1 model (i.e., a model with no Level 2 predictors) with the full sample to describe the overall relationship between depressive symptoms as a time-varying covariate and each index of drinking behavior across the four observations. Mean depressive symptoms

(standard deviations) across Assessments 1 through 4 were 43.95 (14.83), 32.66 (15.97), 29.93 (15.65), and 27.31 (14.31), respectively. On average, within individuals, depressive symptoms were significantly associated with more drinking problems, $B = .006$, $t(409) = 3.84$, $p < .01$, and marginally associated with more alcohol consumption, $B = .007$, $t(409) = 1.92$, $p = .06$.

We then examined the role of drinking to cope in strengthening the link between depressive symptoms and drinking behavior. We used drinking to cope at baseline as a Level 2 predictor of the intraindividual relationship between depressive symptoms and drinking outcomes across the four observations. Baseline drinking to cope significantly strengthened the relationship between depressive symptoms and both alcohol consumption, $G = .018$, $t(406) = 4.95$, $p < .01$, and drinking problems, $G = .006$, $t(406) = 3.65$, $p < .01$. As predicted, individuals who were more prone to drink to cope at baseline showed a stronger overall link between depressive symptoms and both drinking outcomes. As an illustration, we examined the slopes of the relationship between depressive symptoms and drinking behavior for high (score of 2 or more) versus no baseline drinking to cope groups. For the high drinking to cope group, the slopes (unstandardized) for alcohol consumption and drinking problems (.030 and .021, respectively) were statistically significant, whereas for the no drinking to cope group the slopes for alcohol consumption and drinking problems (−.015 and .007, respectively) were not significant ($\alpha = .05$). The slopes were significantly greater for the high compared with the no drinking to cope group for both alcohol consumption, $t(405) = 4.86$, $p < .01$, and drinking problems, $t(405) = 3.06$, $p < .01$.

Drinking to Cope, Alcohol Consumption, and Drinking Problems

Previous cross-sectional research (Cooper et al., 1988; Cooper, Frone, Russell, & Mudar, 1995) has found that drinking to cope and alcohol use were independently associated with alcohol abuse. We conducted an additional HLM analysis to examine this issue within subjects across the four observations. Drinking to cope and alcohol consumption, examined simultaneously as time-varying covariates, were used to predict drinking problems across the four observations. Consistent with the previous research both drinking to cope, $B = .219$, $t(409) = 5.14$, $p < .01$, and alcohol consumption, $B = .034$, $t(409) = 2.75$, $p < .01$, were significantly and independently associated with drinking problems.

Casewise Analyses

First, we focused on the role of drinking to cope at baseline in prospectively predicting new elevated alcohol consumption and drinking problems (assessed relative to baseline) during the follow-up period. New elevated alcohol consumption was defined as consuming 4 or more ounces of ethanol on a typical drinking day (operationalized as 1 standard deviation above mean alcohol consumption across the study) at any of the three posttreatment assessments among individuals who reported consuming less than 4 oz of ethanol on a typical drinking day at baseline. New drinking problems were defined as one or more drinking problems at any of the three posttreatment assessments among individuals who reported no drinking problems at baseline.

Baseline drinking to cope significantly predicted new elevated alcohol consumption, $\chi^2(1, N = 312) = 17.67$, $p < .01$, and new drinking problems, $\chi^2(1, N = 340) = 15.52$, $p < .01$, during the follow-up period. Among individuals who did not report elevated alcohol consumption at baseline, 29 of 234 individuals (12%) who did not drink to cope at baseline versus 26 of 78 individuals (33%) who drank to cope at baseline experienced elevated levels of alcohol consumption during the follow-up period. Among these individuals, there was no difference in baseline alcohol consumption (analysis of variance, $\alpha = .05$) between those who reported versus those who did not report elevated levels of alcohol consumption during the follow-up period.

Among individuals who reported no drinking problems at baseline, 25 of 262 individuals (10%) who did not drink to cope at baseline versus 21 of 78 individuals (27%) who drank to cope at baseline experienced drinking problems during the follow-up period. The strength of these findings is even more clear if one adds both new elevated alcohol consumption or drinking problems. Only 42 of 272 individuals (15%) who did not drink to cope at baseline experienced new elevated alcohol consumption or new drinking problems during the follow-up period. In contrast, 43 of 100 individuals (43%) who drank to cope at baseline experienced one or both of these new consequences during the follow-up period, $\chi^2(1, N = 372) = 31.50$, $p < .01$.

Next, we focused on the link between level of depressive symptoms at the individual level and the appearance of new elevated consumption or drinking problems during the follow-up period. We identified each patient's highest level of depressive symptoms across the three follow-up assessments and indexed whether these new drinking outcomes occurred in the context of this depressive episode. The role of a depressive episode in predicting new elevated alcohol consumption or drinking problems differs significantly by baseline drinking to cope, $\chi^2(1, N = 85) = 6.22$, $p < .05$. For individuals who did not drink to cope at baseline, 17 of 42 individuals (40%) experienced these new drinking consequences in the context of a depressive episode. In contrast, among individuals who drank to cope at baseline, 29 of 43 individuals (67%) experienced these new drinking consequences in the context of a depressive episode.

Discussion

The present study provided a unique opportunity to examine drinking to cope and drinking behavior in a baseline sample of 412 unipolar depressed patients followed over a 10-year period. Baseline drinking to cope operated prospectively as a risk factor for more alcohol consumption at 1-, 4-, and 10-year follow-ups and for more drinking problems at 1- and 4-year follow-ups. Especially important to understanding how drinking to cope relates to drinking behavior, baseline drinking to cope strengthened the link between depressive symptoms and both alcohol consumption and drinking problems.

These findings add to our conceptual understanding of the co-occurrence of depression and alcohol-related problems (Regier et al., 1990; Swendsen & Merikangas, 2000) by indicating which clinically depressed individuals are at risk for alcohol-related prob-

lems and the conditions under which such risk is most likely to be expressed. Extending previous research on coping and drinking behavior among community samples (Abbey et al., 1993; Grunberg et al., 1999) and among patients with both substance use and psychiatric diagnoses (Moggi et al., 1999; Ouimette et al., 1999), we found that among depressed patients, baseline drinking to cope operated prospectively as a risk factor for more alcohol consumption up to 10 years later and for more drinking problems up to 4 years later. For alcohol consumption at the 10-year follow-up, the prospective predictive role of baseline drinking to cope operated indirectly through continuity in drinking behavior. In additional casewise analyses, only 15% of individuals who did not drink to cope at baseline experienced new elevated alcohol consumption or new drinking problems during the follow-up period. In contrast, 43% of individuals who drank to cope at baseline experienced one or both of these new drinking consequences during the follow-up period.

These results demonstrating the prospective predictive role of drinking to cope are congruent with and extend cross-sectional findings among community samples. In a predictive model with community adults that also included general coping skills and positive alcohol expectancies, Cooper et al. (1988) found that reliance on drinking as a coping strategy emerged as the most powerful explanatory variable in the model. In a sample of community adults, Carpenter and Hasin (1999) found empirical support for a model in which the use of alcohol to cope with negative affect operated as a risk factor for developing an alcohol use disorder. The finding that drinking to cope and alcohol consumption were independently associated with drinking problems (see also Cooper et al., 1988, 1995) indicates that drinking to cope carries risks for drinking problems beyond its link to increased alcohol use. These additional risks may occur because drinking to cope leaves ongoing problems unaddressed or from broader coping vulnerabilities associated with drinking to cope.

Integrating previous research on negative emotions and drinking behavior among individuals with psychiatric problems (Zack et al., 1999) and on coping strategies, emotional distress, and drinking behavior among community samples (Grunberg et al., 1999; Holahan et al., 2001; Johnson & Gurin, 1994), we reasoned that the association between negative emotions and drinking behavior should be stronger among individuals who report consuming alcohol to manage emotional distress. Consistent with this expectation, depressed patients who were more prone to drink to cope at baseline showed a stronger link between depressive symptoms and both drinking outcomes across the 10-year interval. Additional casewise analyses of new elevated alcohol consumption or new drinking problems showed that for individuals who did not drink to cope at baseline, less than half of these drinking consequences occurred in the context of a depressive episode. In contrast, among individuals who drank to cope at baseline, two thirds of these drinking consequences occurred in the context of a depressive episode.

Negative reinforcement (through removing negative affect) is a likely mechanism maintaining alcohol use among individuals who drink to cope. In reviewing the social learning model of alcohol use, Maisto, Carey, and Bradizza (1999) noted that the principal reinforcing effect of alcohol is relief from emotional distress. The present focus on coping strategies underscores the importance of including individual differences in social learning theories of drinking behavior. Drinking to cope increases the probability of drinking in the context of negative affect and of perceiving emotional benefits from alcohol use. This interpretation is consistent with our finding in additional analyses that across 1 year, alcohol use prospectively predicts more drinking to cope.

Note that the co-occurrence of depression and alcohol-related problems reflects bidirectional effects (Kessler et al., 1997; Schutte et al., 1997). Because alcohol use is reciprocally linked to depression, an understanding of risk factors that make some depressed individuals susceptible to alcohol abuse is relevant to the treatment of clinical depression. Mueller et al. (1994) found that, among clinically depressed individuals, those who were never alcoholic or were currently nonactive alcoholic had twice the probability of recovery from depression than did actively alcoholic individuals.

Some limitations should be noted in interpreting these results. Self-report measures are subject to both social desirability and common method variance. In addition, use of a single item to index drinking to cope may both underrepresent this construct and tap some irrelevant components. Future research is needed to extend our findings to include a broader measure of drinking to cope (cf. Cooper, Russell, Skinner, & Windle, 1992) and objective indexes of alcohol consumption and drinking problems.

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