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## Mental Health, not Social Support, Mediates the Forgiveness–Alcohol Outcome Relationship

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### Abstract

Religiousness and spirituality are important to most Americans and evidence suggests that they may contribute to both addiction and recovery. Forgiveness is a specific dimension of religiousness and spirituality that may enhance recovery, but the mechanism(s) through which it operates is unknown. We hypothesized that higher levels of forgiveness would be associated with higher levels of mental health and social support, which in turn would be associated with improved alcohol-related outcomes. Baseline and 6-month longitudinal data from a sample of 149 individuals with alcohol use disorders seeking outpatient substance abuse treatment were analyzed through multiple-mediation statistical techniques. While previous research has shown direct associations among forgiveness, alcohol-related outcomes, mental health, and social support, this study found that the direct associations between forgiveness and alcohol-related outcomes were no longer significant when mental health and social support were analyzed as mediator variables. At baseline, for each alcohol-related outcome measured (alcohol-related problems, percent heavy drinking days, percent days abstinent, and drinks per drinking day), mental health individually played a role in the relationship with both forgiveness of self and forgiveness of others; fully mediating or operating through an indirect only pathway. For alcohol-related problems only, mental health fully mediated the relationship with forgiveness of self at follow-up and operated through an indirect only pathway with forgiveness of others longitudinally. Social support and feeling forgiven by God were non-significant variables at baseline, follow-up, and longitudinally.

### Keywords

Forgiveness; Religion and Spirituality; Mental Health; Social Support; Alcohol Problems

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Religiousness and spirituality have been identified as potentially important and constructive factors in both physical and mental health (Koenig, 1998; Koenig, McCullough, & Larson, 2001), including problems with alcohol and drugs (Gorsuch, 1995; Miller & Bennett, 1998). Large research studies on recovery such as Project MATCH (Longabaugh & Wirtz, 2001) and COMBINE (Miller, 2004) have included spiritual and religious variables. However,

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much of this research has focused on religiousness and spirituality in broad terms, rather than specific dimensions (Miller & Bogenschutz, 2007).

Forgiveness, a key dimension related to religiousness and spirituality, has been hypothesized to play a role in a variety of health-related concerns, including addiction and recovery (Worthington, 1998; Worthington, Scherer, & Cooke, 2006). Evidence is accumulating of a basic relationship between forgiveness and physical health (Harris & Thoresen, 2005) and mental health (Toussaint & Webb, 2005). However, very little empirical work has been conducted to examine the relationship between forgiveness and alcohol problems (e.g., Webb & Brewer, in press; Webb, Robinson, Brower, & Zucker, 2006).

### Forgiveness Defined

Scholarly work on forgiveness defines it as a coping mechanism with unique motivational and volitional qualities (Toussaint & Webb, 2005). Involving affective, behavioral, and cognitive components (Enright & The Human Development Study Group, 1991), forgiveness minimally entails the reduction of negative responses to an offender (Gassin & Enright, 1995; Hargrave, 1994), yet may also include an increase of positive, love-based emotions (Worthington, Berry, & Parrott, 2001). Furthermore, it does not require restitution (Wahking, 1992), retribution (Rosenak & Harnden, 1992), or a return to vulnerability, nor does it necessarily involve reconciliation, allowing for offender accountability (Enright, Freedman, & Rique, 1998). Forgiveness is not a denial of justifiable or legitimate negative responses to offense (Enright, et al., 1998; Wade & Worthington, 2005; Worthington, 2003), but an internal process, freely chosen by a victim of offense (Enright, 2001; Worthington, Sandage, & Berry, 2000), irrespective of subsequent interaction with the offender. Forgiveness is a multidimensional construct and can be considered in both situational and dispositional terms. In addition, forgiveness varies in methods (e.g., offering, seeking, and feeling) and targets (self, others, deity, community; see Toussaint & Webb, 2005). Lastly, while there may be religious and cultural differences in prioritizing and determining its features and requisite characteristics, forgiveness is not limited to traditionally religious or spiritual people. It is potentially a universal construct, applicable to all people, as it is unbound by time, culture, or geography (Webb, 2007).

### Forgiveness, Health, and Problems with Alcohol

The relationship between forgiveness and health is thought to be both direct and indirect. The direct relationship is conceptualized to be based on an inextricable association between rumination and the process of (un)forgiveness (Toussaint & Webb, 2005) and the resolution of the negative emotions associated with unforgiveness, such as anger, hostility, resentment, hatred, and fear (Worthington, et al., 2001). In addition to the psychologically dysfunctional nature of such emotions, lack of resolution and the resultant stress can increase allostatic load (Seeman, McEwen, Rowe, & Singer, 2001), thereby having a negative impact on physical health as well.

The indirect relationship between forgiveness and health has been conceptualized to operate through mediating relationships with *distinct* variables such as social support, health behavior, and interpersonal functioning (Worthington, et al., 2001). In the context of social support, forgiveness is thought to lead to a broad and fulfilling social network of emotional support, thereby facilitating a variety of salutary health outcomes (Worthington, et al., 2001; Worthington & Scherer, 2004). Indeed, Lawler-Row and Piferi (2006) have found empirical corroboration for social support and health behavior as mediators of the relationship between forgiveness and health. Research has also shown indirect effects through variables such as negative affect, stress, conflict management, religious and existential well-being,

and anger rumination (Lawler-Row & Piferi, 2006; Lawler, et al., 2005; Stoia-Caraballo, et al., 2008).

Likewise, the relationship between forgiveness and alcohol-related outcomes may operate in both a direct and indirect manner (Webb & Trautman, 2010; Worthington, et al., 2001). Webb, Robinson, and Brower (2009) have found some evidence that the relationship between forgiveness and alcohol-related outcomes may also operate through mental health as a mediator. Similarly and as described and proposed in more detail by Webb, Hill, and Brewer (2010), given social support's strong conceptual (Worthington, et al., 2001; Worthington & Scherer, 2004) and emerging empirical (Jacinto, 2010; Lawler-Row & Piferi, 2006) association with forgiveness and its association with alcohol-related outcomes (Booth, Russell, Soucek, & Laughlin, 1992; Hanson, 1994; Noone, Dua, & Markham, 1999), it may also operate as a mediator. Some evidence has been observed to support: 1) the direct link between forgiveness and alcohol-related outcomes (Webb & Brewer, in press; Webb, et al., 2006) and 2) a direct link between forgiveness and physical and mental health related variables, including social support, in the context of alcohol problems (Webb & Brewer, 2010; Webb, et al., 2009). However, we are unaware of any published work regarding the relationship between forgiveness and alcohol-related outcomes as mediated by other factors.

### **Importance of Forgiveness Dimensions**

Previous work, using the same three measures of forgiveness and examining direct relationships, suggests that particular dimensions of forgiveness may be relatively more important among those with alcohol-related problems. Among people seeking treatment for alcohol use disorders, Webb et al. (2006) concluded forgiveness of self to be most important, with forgiveness of others playing a secondary role, whereas Webb and Brewer (in press), in a non-clinical sample, concluded feeling forgiven by God to be most important, with forgiveness of self playing a secondary role. Similarly, indications of relative importance have been observed in associations with mental health and social support among people with or likely to have alcohol problems. Webb et al. (2009) found that relative importance of forgiveness of self and forgiveness of others in association with mental health varied across time-based levels of analysis (baseline, follow-up, baseline to follow-up). Webb and Brewer (2010), in association with mental health and social support, found forgiveness of self to be most important, with feeling forgiven by God playing a secondary role. Each set of likewise authored studies did not find the unstated dimension of forgiveness to play a role.

### **Purpose and Hypothesis**

As such, the purpose of this study was to examine the indirect relationship between forgiveness and alcohol-related outcomes as mediated by mental health and social support. We hypothesized that, among people with alcohol problems, higher levels of forgiveness would be associated with fewer symptoms of psychiatric distress (better mental health) and higher levels of social support which, in turn, would be associated with a salutary effect on alcohol-related outcomes.

### **Previous Studies**

The current study is part of a larger longitudinal study of relationships between religiousness and spirituality and alcohol-related outcomes (Robinson, Cranford, Webb, & Brower, 2007). Based on this dataset, we have previously published studies (cited above and below) regarding the basic associations between forgiveness and alcohol use and problems (Webb, et al., 2006) and forgiveness and mental health in the context thereof (Webb, et al., 2009).

Such examinations of basic and direct relationships also serve to provide general logical justification for examining the more complex mediating relationships herein hypothesized.

## Materials and Methods

### Participants and Procedure

Drawing from the aforementioned study (Robinson, et al., 2007), the analyses in this study are based on a voluntary sample of 149 adults, ages 18 and over, who were seeking outpatient treatment for alcohol use disorders. Eight additional participants were not included in these analyses: three who reported a year or more of no alcohol use prior to the initial interview and five who reported ethnicity other<sup>3</sup> than White or African-American. Data were collected at treatment entry and six-month follow-up (n=118).

Table 1 provides demographics and alcohol-related characteristics of the sample. At both baseline and follow-up, over 90% of participants were alcohol-dependent with age at onset of alcohol abuse and alcohol dependence at 18 and 26 years, respectively. Likewise, about 72% of participants had a history of prior treatment for alcohol problems. Respondents provided informed consent and were compensated for their participation in this institutional review board sanctioned study.

### Measures

**Forgiveness**—Three single-item measures of dispositional dimensions of forgiveness were utilized in this study (Fetzer Institute, 1999): forgiveness of self (“I have forgiven myself for things that I have done wrong”), forgiveness of others (“I have forgiven those who hurt me”), and feeling forgiven by God (“I know that God forgives me”). These items constitute the brief forgiveness measure incorporated into the Brief Multidimensional Measure of Religiousness/Spirituality collaboratively developed by the Fetzer Institute and the National Institute on Aging. Responses range from “never” to “almost always” on a 4-point scale. At baseline, associations (Pearson's  $r$ ) among the forgiveness variables were: forgiveness of self with forgiveness of others ( $r = .27, p \leq .001$ ), forgiveness of self with feeling forgiven by God ( $r = .23, p \leq .01$ ), and forgiveness of others with feeling forgiven by God ( $r = .15, p \geq .05$ ). At follow-up each association was significant ( $p < .05$ ) and ranged from .22 - .42.

**Mental health**—The total global severity score of the 53-item Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) was utilized as a broad measure of mental health, with higher scores indicating greater psychiatric distress. The internal consistency (Cronbach's  $\alpha$ ) of the BSI total score for this sample was .96 and .96 at baseline and follow-up, respectively.

**Social support**—A six-item measure of general social support for sobriety, taken from the University of Arkansas Substance Abuse Outcomes Module (Smith, Ross, & Rost, 1996), was adapted for use in this study. A seventh item was added in an effort to include the notion of having someone to talk to about anything at all. The  $\alpha$  for this seven-item measure of social support was .93 and .92 at baseline and follow-up, respectively.

**Alcohol use, problems, and diagnosis**—Quantity and frequency of alcohol use were measured using the Timeline Followback Interview (Sobell, Brown, Leo, & Sobell, 1996;

<sup>3</sup>With nearly all of the participants justifiably assigned to one of two adequately descriptive categories of ethnicity, incorporating five additional participants from other ethnicities (too few for one or more additional categories) and re-labeling the resultant category as “Other” would lead to an inadequate description and make interpretation of results based on ethnicity more difficult. As such, we chose to exclude these five participants from the analyses.

Sobell & Sobell, 1992). At both baseline and follow-up, data were collected for the previous 90 days including: 1) percent heavy drinking days (5+ or 4+ drinks in a day for men and women, respectively), 2) percent days abstinent, and 3) drinks per drinking day.

The 15-item Short Index of Problems (SIP; Feinn, Tennen, & Kranzler, 2003; Miller, Tonigan, & Longabaugh, 1995) was used to assess adverse consequences associated with alcohol use. The  $\alpha$  of the SIP for this sample was .94 and .96 at baseline and follow-up, respectively.

The Structured Clinical Interview for DSM Disorders (First, Spitzer, Gibbon, & Williams, 1997) was used to verify a *Diagnostic and Statistical Manual of Mental Disorders*, 4<sup>th</sup> edition (American Psychiatric Association, 1994) diagnosis of alcohol dependence or abuse.

**Religiousness**—Given the association of forgiveness with religiousness and spirituality, the lifetime portion of the Religious Background and Behaviors Questionnaire (RBB) developed by Connors, Tonigan, and Miller (1996) was used to control for religiousness. This six-item subscale measures lifetime history of belief in God and religious practices, such as prayer and scripture study. The  $\alpha$  of the RBB-Lifetime subscale for this sample was .63 and .68 at baseline and follow-up, respectively.

### Statistical Analysis

The three indices of drinking and drinking-related problems constitute the four alcohol-related outcomes. Bivariate and multivariable analyses were conducted to examine the cross-sectional and longitudinal associations between forgiveness and alcohol-related outcomes as mediated by mental health and social support. Prior to multivariable analyses and as a precaution against multicollinearity, all continuous control, independent, and mediating variables were centered by subtracting the variables' mean score from each individual score (see Cohen, Cohen, West, & Aiken, 2003). Pearson's ( $r$ ) and Spearman's ( $\rho$ ) correlation coefficients, as applicable, were calculated to examine the zero-order associations among the variables of interest in this study. Multiple-mediation analyses consistent with Preacher and Hayes (2008a) were conducted to examine indirect pathways in the relationship between forgiveness (independent variables; IVs) and alcohol-related outcomes (dependent variables; DVs). As such, mental health, or the lack of psychiatric distress, and social support were evaluated individually and *comparatively* as mediator variables (MVs) in this relationship. Preacher and Hayes' techniques, which utilize bootstrap resampling, allow for a more accurate assessment of indirect pathways. While Baron and Kenny (1986) derive mediation through a sequential establishment of statistically significant direct effects between/among IVs, MVs, and DVs, Preacher and Hayes allow for the possibility of indirect effects without the presence of direct effects (see also, Hayes, 2009; Preacher & Hayes, 2008b).

When examining indirect effects through mediation analysis a variety of terms are used to describe the potential associations among the IVs, MVs, and DVs under consideration (see Preacher & Hayes, 2008a). Figure 1 illustrates this approach. A *total effect* (arrow  $c$ ) occurs when there is a relationship between an IV and a DV without controlling for any potential MVs. A *direct effect* (arrow  $c'$ ) occurs when there is a relationship between an IV and a DV *after* controlling for any potential MVs. A *total indirect effect* (arrows  $a$  &  $b$ , or  $ab$ ) occurs when a set of MVs under consideration, as a whole, plays a role in the relationship between an IV and a DV. A *specific indirect effect* (arrows  $a_1b_1$  and/or  $a_2b_2$ ) occurs when a particular MV under consideration plays a role in the relationship between an IV and a DV. As such, the analyses to follow, assuming significance, may produce one or more of five results: 1) total effect ( $c$ ), 2) direct effect ( $c'$ ), 3) full mediation, in which  $c$  is reduced by a total indirect effect ( $ab$ ) and/or one or more specific indirect effects ( $a_1b_1$  and/or  $a_2b_2$ ), to a

non-significant  $c'$ , 4) partial mediation, in which  $c$  is reduced by  $ab$  and/or  $a_1b_1$  and/or  $a_2b_2$ , but  $c'$  remains, and 5) indirect effect only, that is  $ab$  and/or  $a_1b_1$  and/or  $a_2b_2$ , but  $c$  and  $c'$  were not significant in the model in the first place. Unless otherwise stated, all significant results reflect a  $p$  value of less than .05.

Three sets (baseline, follow-up, and baseline to follow-up) of twelve separate multiple-mediator models were calculated based on the relationships between the three forgiveness IVs and four alcohol-related outcome DVs potentially operating through the two MVs. Each model controlled for demographic variables (see below), lifetime religiousness, and the other two forgiveness variables. When visually presenting the relationship between forgiveness and a particular DV, the three corresponding models are collapsed into a figure (Preacher & Hayes, 2008a), as shown in Figures 2-4. Results are presented only for those mediation analyses found to be significant. (Contact first author for non-significant results.)

## Results

### Bivariate Associations

A variety of significant zero-order associations were observed among the variables of interest in this study. See Table 2.

**Forgiveness and alcohol**—As previously reported (Webb, et al., 2006), at baseline most of the relationships between forgiveness and the alcohol-related outcomes were significant ( $r_s = |.16|$  to  $|.38|$ ). At six-month follow-up and longitudinally, from baseline to follow-up, only forgiveness of self was associated with alcohol problems ( $r_s = -.26$  and  $-.24$ , respectively).

**Mediator variables**—Regarding the associations between forgiveness and the potential MVs, at baseline, each forgiveness variable was significantly associated with psychiatric distress ( $r_s = -.20$  to  $-.44$ ; see also Webb, et al., 2009), but only forgiveness of self was associated with social support ( $r = .22$ ). At follow-up, only forgiveness of self and of others were associated with psychiatric distress ( $r_s = -.36$  and  $-.29$ , respectively). From baseline forgiveness to follow-up psychiatric distress, only forgiveness of self ( $r = -.35$ ) and of others ( $r = -.30$ ) were associated with psychiatric distress.

Regarding the associations between the potential MVs and the outcome variables, at baseline psychiatric distress was significantly associated with all four alcohol-related outcomes ( $r_s = |.22|$  to  $|.46|$ ), but social support was not associated with any. At follow-up, psychiatric distress was associated with alcohol problems only ( $r = .47$ ) and social support was associated with alcohol problems ( $r = -.23$ ), days abstinent ( $\rho = .19$ ) and drinks per drinking day ( $\rho = -.19$ ).

### Multivariable Associations

Each multiple-mediator model was constructed using the aforementioned method developed by Preacher and Hayes (2008a). The following variables were controlled: gender (1 = male; 2 = female), age (continuous), education (continuous), employment (1 = full/part-time employment; 2 = unemployed), ethnicity (1 = African-American; 2 = Caucasian), marital status (1 = married/living together; 2 = other), and lifetime religiousness (continuous). Additionally, all follow-up DVs, except alcohol problems, were dichotomized due to excessive skewness ( $> 2$ ), as most respondents were much more sober at follow-up than at baseline (see Table 2).

As Preacher and Hayes' method allows for one IV per model, three forgiveness models were constructed for each alcohol-related outcome variable at each time-based level of analysis: baseline, follow-up, and baseline forgiveness to follow-up alcohol outcomes. As such, each IV-based model also controlled for the other two forgiveness variables. Similarly, baseline to follow-up models controlled for the corresponding baseline alcohol-related outcome and employed follow-up MV values while controlling for corresponding baseline MV values. Each model provides unstandardized coefficients and associated  $p$  values for each segment of the process and 95% Confidence Intervals for each potential indirect pathway. For brevity purposes, a detailed explanation of the derivation of the data is provided the first time a new analytical effect is presented. Subsequent interpretations of similar analytical effects are briefer and the reader is invited to refer back to the initial more detailed explanatory processes, if necessary.

Lastly, regardless of the time-based level of analysis, direct associations between forgiveness and alcohol-related outcomes were not observed. We only found the indirect associations to be described below. In addition, there were no indirect associations observed between feeling forgiven by God and any alcohol-related outcome, regardless of mediating variable.

### Baseline associations

**Alcohol problems**—For alcohol problems (see Figure 2 and Table 3), a significant total effect ( $c$ ; see Figure 1) was observed for both forgiveness of one's self and of others. When the MVs were added to the models, a non-significant direct effect ( $c'$ ) was observed for both. For each, the difference between  $c$  and  $c'$  or the total indirect effect ( $ab$ ), an overall or combined indirect effect of the MVs, was found to be statistically different from zero (i.e.,  $c - c' \neq 0$ , or  $ab \neq 0$ ), as the confidence interval (CI) for the point estimate did not cross zero. Examining for specific indirect effects reveals that for both forgiveness of self and forgiveness of others, psychiatric distress was a mediator ( $a_1b_1$ ) and social support was not ( $a_2b_2$ ; CI crosses zero). As such, social support did not contribute to the total indirect effect in a distinct manner. Similarly, comparison of the specific indirect effects reveals that for forgiveness of self, the effect through psychiatric distress was larger than the effect through social support (vs.). Higher levels of both forgiveness of self and forgiveness of others were individually associated with lower levels of psychiatric distress which, in turn, was associated with fewer alcohol problems. The reduction of a significant  $c$  to a non-significant  $c'$  suggests that psychiatric distress fully mediated these relationships.

**Alcohol use**—At baseline, the  $a$  pathway regression coefficients (see Figure 1) for each consolidated forgiveness-based, alcohol use-related DV model were the same and are stated once for reference. The  $a$  pathways to psychiatric distress for each of the three models were: 1) forgiveness of self,  $a = -19.35$ ,  $p \leq .0001$ ; 2) forgiveness of others,  $a = -10.68$ ,  $p \leq .05$ ; and 3) feeling forgiven by God,  $a = -4.39$ ,  $p > .05$ . The  $a$  pathways to social support for each of the three models were: 1) forgiveness of self,  $a = 1.10$ ,  $p \leq .05$ ; 2) forgiveness of others,  $a = -.70$ ,  $p > .05$ ; and 3) feeling forgiven by God,  $a = -.26$ ,  $p > .05$ . Similarly, within each DV model the  $b$  pathway regression coefficients were the same and are stated once for reference. The  $b$  pathways from psychiatric distress for each of the three models were: 1) percent heavy drinking days,  $b = .18$ ,  $p \leq .05$ ; 2) percent days abstinent,  $b = -.21$ ,  $p \leq .01$ ; and 3) drinks per drinking day,  $b = .04$ ,  $p \leq .05$ . The  $b$  pathways from social support for each of the three models were non-significant. Lastly and similar to the model for alcohol problems, in each alcohol use model: 1) the specific indirect effect of social support ( $a_2b_2$ ) was non-significant and thus did not contribute to the total indirect effect in a distinct manner and 2) for forgiveness of self, the specific indirect effect through psychiatric distress was larger and more significant than that of social support.

For percent heavy drinking days (see Table 3), the total indirect effect was significant for both forgiveness of self and forgiveness of others. The specific indirect effect of psychiatric distress fully mediated the relationship with forgiveness of self ( $c = -7.48, p \leq .05; c' = -4.36, p > .05; a_1b_1, p \leq .05$ ). The relationship with forgiveness of others operated through psychiatric distress in an indirect fashion only, rather than mediation. That is, while the total effect and direct effect were both non-significant ( $c = -4.52, p > .05; c' = -2.31, p > .05$ ), the specific indirect effect of psychiatric distress ( $a_1b_1$ ) was significant. Higher levels of both forgiveness of self (full mediation) and forgiveness of others (indirect only) were individually associated with lower levels of psychiatric distress which, in turn, was associated with less heavy drinking days.

For percent days abstinent (see Table 3), the total indirect effect was significant for both forgiveness of self and forgiveness of others. The specific indirect effect of the relationship with forgiveness of self operated through psychiatric distress in an indirect fashion only ( $c = 4.12, p > .05; c' = .82, p > .05; a_1b_1, p \leq .05$ ). The specific indirect effect of psychiatric distress fully mediated the relationship with forgiveness of others ( $c = 7.35, p \leq .05; c' = 4.67, p > .05; a_1b_1, p \leq .05$ ). Higher levels of forgiveness of self (indirect only) and forgiveness of others (full mediation) were individually associated with lower levels of psychiatric distress which, in turn, was associated with more days abstinent.

For drinks per drinking day (see Table 3), the total indirect effect, while non-significant for forgiveness of self, was significant for forgiveness of others. The specific indirect effect of the relationship with forgiveness of self operated through psychiatric distress in an indirect fashion only ( $c = -1.14, p > .05; c' = -.58, p > .05; a_1b_1, p \leq .05$ ). Likewise, the relationship with forgiveness of others operated through psychiatric distress in an indirect fashion only ( $c = -.26, p > .05; c' = .22, p > .05; a_1b_1, p \leq .05$ ). Higher levels of forgiveness of self (indirect only) and forgiveness of others (indirect only) were individually associated with lower levels of psychiatric distress which, in turn, was associated with fewer drinks per drinking day.

**Follow-up associations**—At six-month follow-up, the only significant association observed was forgiveness of self with alcohol problems in an indirect fashion (see Figure 3 and Table 3). The total indirect effect was significant and the specific indirect effect of psychiatric distress fully mediated the relationship with forgiveness of self ( $c, p \leq .05; c', p > .05; a_1b_1, p \leq .05$ ). The specific indirect effect of social support was non-significant and thus did not contribute to the total indirect effect in a distinct manner. Higher levels of forgiveness of self (full mediation) were associated with lower levels of psychiatric distress, which, in turn, was associated with fewer alcohol problems.

**Baseline to follow-up associations**—From treatment entry to six-month follow-up, the only significant association observed was baseline forgiveness of others with follow-up alcohol problems in an indirect fashion (see Figure 4 and Table 3). While the total indirect effect was non-significant, the specific indirect effect of the relationship with forgiveness of others operated through psychiatric distress in an indirect fashion only ( $c, p > .05; c', p > .05; a_1b_1, p \leq .05$ ). Again, the specific indirect effect of social support was non-significant. Higher levels of forgiveness of others (indirect only) were associated with lower levels of psychiatric distress, which, in turn, was associated with fewer alcohol problems.

## Discussion

Our general hypothesis, that the salutary relationship between forgiveness and alcohol-related outcomes would be mediated by salutary relationships with mental health and social support, was partially supported by the results of this study. As with previous research



regarding relationships among forgiveness, health, and alcohol-related outcomes (Webb & Brewer, 2010, in press; Webb, et al., 2009; Webb, Toussaint, Kalpakjian, & Tate, 2010), the relationships varied based on both the type of forgiveness and aspect of health and/or alcohol outcome under consideration.

### **Bivariate Associations among Study Variables**

As the ultimate purpose of this study was to examine the relationship between forgiveness and alcohol-related outcomes as potentially mediated by mental health and social support, we initially examined the simple associations among the variables of interest in this study. At baseline, significant associations were observed for nearly all possible combinations of variables, with strength of association ranging from modest to moderately strong (Cohen, 1988), consistent with previous work (Webb & Brewer, 2010, in press; Webb, et al., 2009), and suggesting the importance of forgiveness in alcohol-related outcomes and health. However, an exception occurred regarding social support. Among the forgiveness variables, social support was only associated with forgiveness of self. Of the alcohol-related variables, it was not associated with any, which, while not using the same measure of social support, is nonetheless inconsistent with previous research (Groh, Jason, Davis, Olson, & Ferrari, 2007; Menagi, Harrell, & June, 2008). At follow-up and from baseline to follow-up, significant associations among variables were sporadic, with strength of association mostly ranging from moderate to moderately strong. Such associations involving mental health, and in this case social support, are to be expected, given the results of much previous research in these areas (e.g., Greenfield, et al., 1998; Groh, et al., 2007; Menagi, et al., 2008; Toussaint & Webb, 2005; Willinger, et al., 2002).

### **Mediators between Forgiveness and Alcohol-Related Outcomes**

Among people seeking outpatient treatment for alcohol use disorders and people likely to be hazardous or harmful drinkers, previous research has found a basic direct relationship between forgiveness and alcohol use and problems (Webb & Brewer, in press; Webb, et al., 2006) and with mental health and social support (Webb & Brewer, 2010; Webb, et al., 2009). However, such studies did not examine mental health or social support as mediators.

Mediator variables, if significant, can be described as having a variety of effects, including full and partial mediation or indirect only. Such was the case in this study (see Table 4). At the multivariable level of analysis, psychiatric distress either fully mediated the relationship between forgiveness and alcohol-related outcomes or functioned as an indirect only pathway. However, such effects were only seen with forgiveness of self and forgiveness of others, not for feeling forgiven by God. Additionally, while such relationships were observed with each alcohol-related outcome at baseline or treatment entry, at follow-up and longitudinally from baseline to follow-up only associations with alcohol problems were observed. Further, social support did not play a role in any of these relationships. Lastly, there were no direct relationships between forgiveness and alcohol-related outcomes (i.e., after controlling for mediators).

We are aware of two other studies examining mediating variables in the context of forgiveness and alcohol-related outcomes. Similar to this series of analyses, Webb and other colleagues conducted a series of cross-sectional only analyses on a sample of AUDIT-identified problematic drinkers (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001) from the Southern Appalachian region (Webb & Brewer, 2010, in press), the two most recent of which are currently in review (Webb, Hill, et al., 2010; Webb, Hirsch, Conway-Williams, & Brewer, 2010). Webb, Hirsch, et al. (2010), using the same measure of forgiveness and controlling for similar variables, observed that mental health plays a robust role and social support a secondary role. Such associations involved forgiveness of self only and were

largely operating through an indirect only pathway. However, they also observed direct only relationships involving feeling forgiven by God. Webb, Hill, et al. (2010), further examining particular aspects of social support available as subscales of the measure used in Webb, Hirsch, et al. (2010), found social undermining to play a robust role and otherwise constructive social support to play no role. Again, forgiveness of self was involved and largely operating through indirect only pathways. While forgiveness of others was still a non-factor, the relationships involving feeling forgiven by God became indirect; partial mediation and indirect only.

### Relative Importance of Dimensions of Forgiveness

Regarding the mediation of forgiveness and alcohol-related outcomes, the current study suggests that forgiveness of self and forgiveness of others are both important at baseline. However, at follow-up only forgiveness of self, and from baseline to follow-up, only forgiveness of others was related to alcohol outcomes. Cross-sectionally, Webb, Hirsch, et al. (2010) found only forgiveness of self and only feeling forgiven by God to be indirectly and directly associated, respectively. Yet, upon more explicit examination of social undermining as opposed to otherwise constructive social support, Webb, Hill, et al. (2010) observed forgiveness of self and feeling forgiven by God to be indirectly associated.

In sum, it appears that forgiveness of self is most consistently associated with alcohol-related concerns, whereas, depending on the sample under consideration, forgiveness of others or feeling forgiven by God may also be important. As both samples were problematic drinkers (albeit clinical versus non-clinical), this discrepancy may be due to culturally-based religious differences, as the two samples were collected from different regions of the United States: upper-Midwest (current study; Webb, et al., 2009; Webb, et al., 2006) and Southern (Webb & Brewer, 2010, in press; Webb, Hill, et al., 2010; Webb, Hirsch, et al., 2010). Each sample appears to have similar levels of lifetime religiousness. Likewise, there was not an initial association between religiousness and forgiveness of self or forgiveness of others among either sample. As argued by Webb and Brewer (in press), such cultural differences may arise from unmeasured differences based on the unique practice of Christianity in the South (see Hill, 1999). Indeed, recent data suggests that while the rest of the United States perceives God to be loving, the South-Eastern region perceives God to be judgmental (Pew Forum on Religion and Public Life, 2008).

### Forgiveness and Alcohol Problems

In the current study, forgiveness, operating through lower psychiatric distress, was salutarly associated with alcohol-related outcomes at each time-based level of analysis. At baseline, associations were observed with each outcome. However, follow-up and longitudinal analyses suggest that the most robust association between forgiveness and alcohol-related outcomes involves alcohol problems. At baseline, forgiveness of self and forgiveness of others were individually indirectly associated with alcohol problems. At follow-up only forgiveness of self remained associated with alcohol problems. However, longitudinally, only forgiveness of others was associated with alcohol problems. This time-based pattern of indirect associations is consistent with the time-based pattern of associations we observed when examining the direct associations between forgiveness and mental health in this sample (Webb, et al., 2009).

As we previously discussed (Webb, et al., 2009), such variation may be related to: 1) the relative difficulty associated with achieving forgiveness of self and/or 2) attribution-based differences. Both dimensions of forgiveness may be at work or necessary to cope and manage problems at treatment entry when people with alcohol use disorders are more likely at or near *rock bottom*. Further, "... while forgiving others continues to impact ...,

forgiveness of self may not come into play again until after some time has passed, due to the relative difficulty of examining and accepting oneself” (2009, p. 383). Additionally, particularly at baseline, and consistent with other health-related research employing multiple dimensions of forgiveness (Webb, Toussaint, et al., 2010), internal/external attribution-related demand dynamics may be at work. For heavy drinking days and days abstinent, the relationship through less psychiatric distress for the two dimensions was opposite (see Table 4). As such, the attribution-based interaction among self and other with heavy drinking and abstinence may vary. Internal self-related attributions may more importantly influence decisions to drink heavily, whereas external other-related attributions may more importantly influence decisions to remain abstinent.

In sum, it appears the robust relationship, including the pattern thereof, between forgiveness and mental health holds whether mental health is a DV among people with alcohol use disorders or a MV in the context of the negative consequences of alcohol use. Furthermore, such associations hold whether examined cross-sectionally or longitudinally.

### **Mental Health versus Social Support as Mediators**

In the current study, social support was minimally associated with both the forgiveness and alcohol-related variables at the bivariate level of analysis. We chose to include social support in the multivariable analyses, given: 1) the strong theoretical rationale, 2) emerging research supporting its association, and 3) its current association, albeit minimal, at the bivariate level. Nevertheless, inconsistent with Webb, Hirsch, et al. (2010), it was not observed to be a mediator of the relationship between forgiveness and alcohol-related outcomes. Importantly, though, the associations herein observed regarding the robust nature of mental health as a mediator of the relationship between forgiveness and alcohol-related outcomes were observed in the *context* of social support being under simultaneous consideration (Preacher & Hayes, 2008a). More importantly, however, given the findings of Webb, Hill, et al. (2010) suggesting the robust importance of social undermining, a particular aspect of social support, rather than social support more broadly construed, it appears that the strong theoretical link between forgiveness, social support, and alcohol-related outcomes may indeed exist.

The apparent lack of empirical evidence for social support manifest in our findings may be related to a variety of issues, which are important to consider when interpreting the results. Not only did we use a different measure of social support than did Webb and other colleagues (Webb, Hill, et al., 2010; Webb, Hirsch, et al., 2010), our measure only allowed for a broad assessment of general aspects of social support. Similarly, differences between samples may have influenced discrepancies in our findings regarding social support. Just as religious culture may have influenced relative importance of the dimensions of forgiveness measured, it may have influenced associations with social support and/or particular aspects thereof. Lastly, severity of alcohol problems between the clinical and non-clinical samples may have lead to the presence versus absence of social support as a mediator in the forgiveness–alcohol outcome relationship.

### **Clinical Implications**

Understanding the nature of the forgiveness–alcohol outcome relationship, albeit in the initial stages, facilitates and informs the utilization of forgiveness as an intervention tool. While anecdotally espoused by the mutual-help community for nearly three-quarters of a century (Alcoholics Anonymous, 2001), such emerging empirical evidence (as herein reported and discussed) provides practical and rational justification for the active incorporation of forgiveness into empirically supported and otherwise standardized treatments for addiction. Furthermore, depending on the nature of these relationships, only

identifiable and verifiable through continued rigorous empirical examination, the development of forgiveness-based modules of treatment as augmenting components of other established treatments seems warranted. However, it may also be the case that the development of a free-standing forgiveness-based treatment for addiction is warranted, as well. Indeed, a ready candidate may be Worthington's (2006a, 2006b) REACH model of forgiveness education/intervention. Very briefly, this model involves an individual *recalling* an offense, developing *empathy* for the offender, choosing to give the *altruistic* gift of forgiveness, making a public, formal *commitment* to forgive, and *holding on* to progress made toward forgiveness. While other models of the process and intervention of forgiveness exist (e.g., Enright, et al., 1998; Rusbult, Hannon, Stocker, & Finkel, 2005), two particular advantages of the REACH model are that it has already been conceptually adapted to addiction (Worthington, et al., 2006) and it includes an explicit recognition of and focus on forgiveness of self as an important and particularly difficult dimension of forgiveness to achieve (Webb & Brewer, in press; Webb, et al., 2006; Worthington, 2006a).

### Limitations and Future Directions

This study has several limitations in need of acknowledgement and consideration. The measures of the dimensions of forgiveness used in this study are single-item measures. Clarification of complex multivariable longitudinal analyses would be supported by more sophisticated measures of forgiveness (Berry, Worthington, Parrott, O'Connor, & Wade, 2001; Subkoviak, et al., 1995; Thompson, et al., 2005; Toussaint & Webb, 2006), including measures which do not use the term *forgive*, given possible misunderstandings of its meaning and religious/spiritual connotations. Likewise, longer follow-up intervals will be useful, as greater variation in drinking levels will occur as length of follow-up increases, thereby allowing for more sensitive analytical techniques to be used in the examination of quantity and frequency of use. Although the statistical term, *mediation*, can suggest causation, our findings cannot be construed to suggest directional and/or cause-effect relationships at treatment entry nor at follow-up as these associations are based on cross-sectional data. Selection bias was also an issue because participants were aware of the religious/spiritual focus of the study and may have volunteered or not based on their bias for or against such a focus. As such, future studies should work to ensure a more neutral description of the study which would enhance the chances of participation among a greater range of individuals. As with all samples of individuals with alcohol problems, except the NESARC (2006), generalizability is limited, as participants were recruited from one small-city outpatient treatment center in the upper-Midwest region of the United States. Recruiting participants from a variety of settings and replicating the study in a variety of regions, nationally and internationally, will be useful. Lastly, the lack of findings regarding the role of social support may be related to measurement issues (as discussed above), and a more sophisticated multidimensional measure may provide more useful information (Brown, Alpert, Lent, Hunt, & Brady, 1988; Sherbourne & Stewart, 1991; Wong, Nordstokke, Gregorich, & Pérez-Stable, 2010).

### Conclusions

Much anecdotal evidence suggests that forgiveness is a key to both addiction and recovery (Alcoholics Anonymous, 2001). In particular, the Big Book of Alcoholics Anonymous states, "Resentment is the 'number one' offender" and describes the development and resolution of a "grudge list" (2001, pp. 64-65). As such, the struggle for forgiveness is conceptualized to be fundamental to addiction and recovery by a vast majority of the twelve-step mutual self-help community. Indeed, scholars have identified the central role of forgiveness in the major federally-funded evidence-based treatments for alcohol problems (Webb & Trautman, 2010); i.e., Twelve Step Facilitation Therapy (see also Lyons, Deane, & Kelly, 2010), Motivational Enhancement Therapy, and Cognitive-Behavioral Coping Skills

Therapy. While still only a relative few empirical studies exist regarding the link between forgiveness and alcohol-related outcomes, this study adds to the literature by providing scientific support for long-held anecdotal assumptions. Further, it begins to shed light on the complex nature of this relationship, in particular: 1) dimensions of forgiveness appear to be associated with alcohol-related outcomes at treatment entry through other factors, such as mental health and 2) associations with alcohol problems, or the negative consequences of alcohol use, appear to hold both cross-sectionally (at treatment entry and follow-up) and longitudinally.

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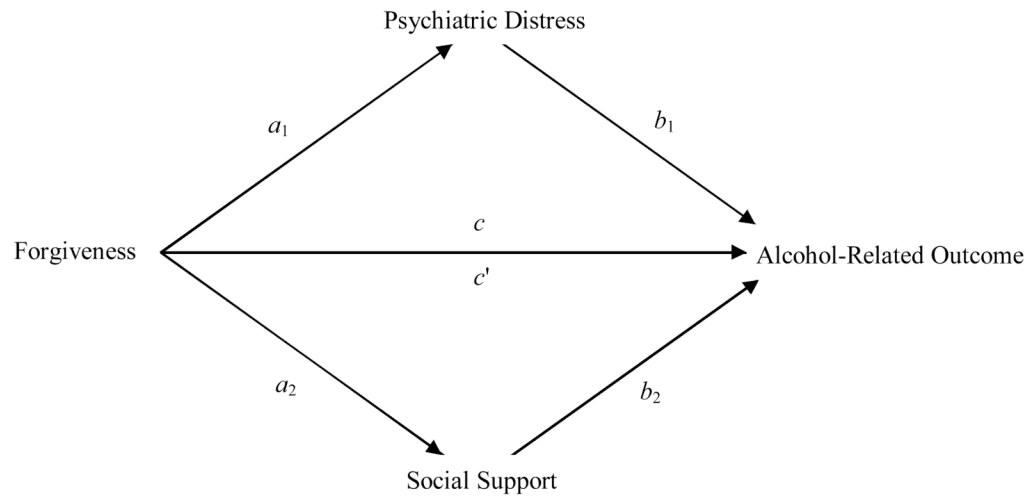
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**Figure 1. Illustration of an Indirect Effects Model**

$c$  = Total Effect (Forgiveness affects Alcohol-Related Outcomes)

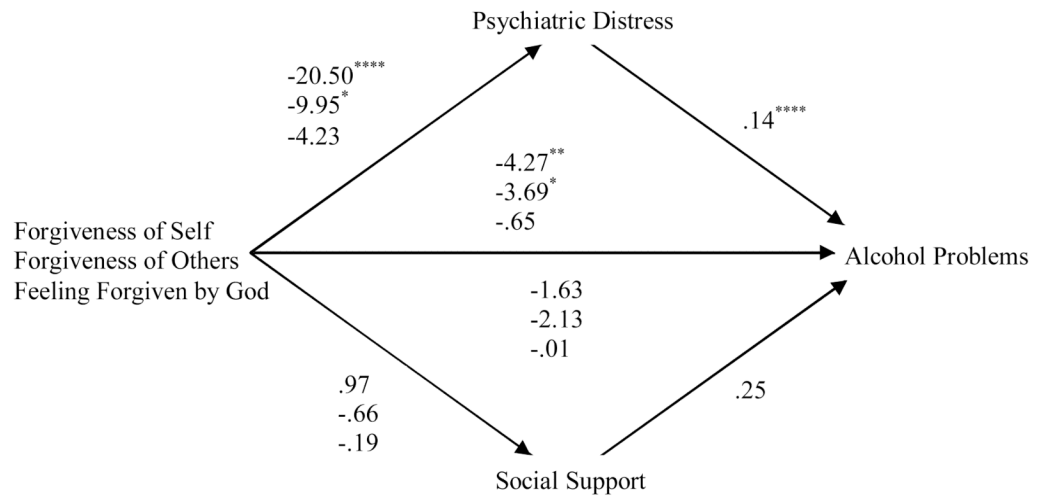
$ab$  = Total Indirect Effect (Forgiveness affects Alcohol-Related Outcomes through Psychiatric Distress *and* Social Support)

$a_1b_1$  = Specific Indirect Effect: Forgiveness affects Alcohol-Related Outcomes through Psychiatric Distress

$a_2b_2$  = Specific Indirect Effect: Forgiveness affects Alcohol-Related Outcomes through Social Support

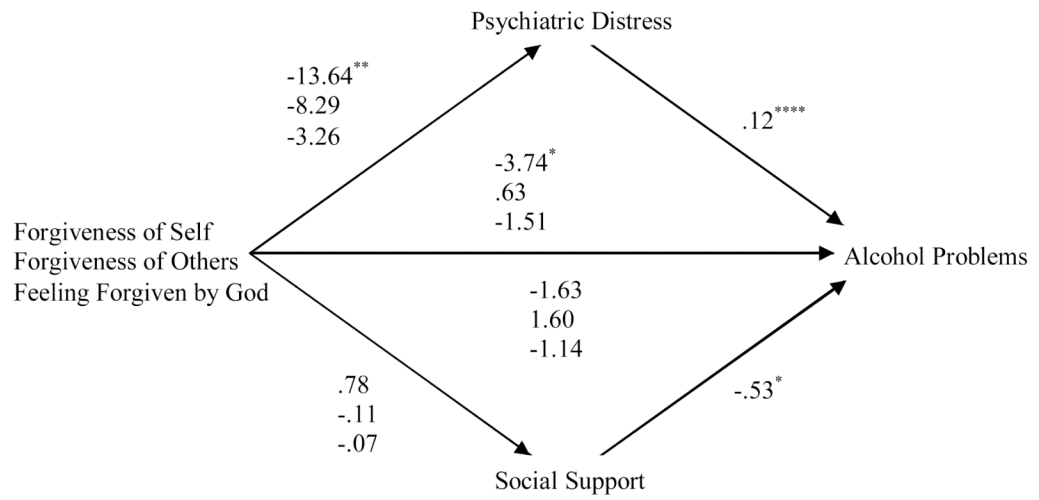
$c'$  = Direct Effect (Forgiveness affects Alcohol-Related Outcomes after accounting for a Total Indirect Effect and/or a Specific Indirect Effect)

Adapted from Preacher and Hayes (2008a)



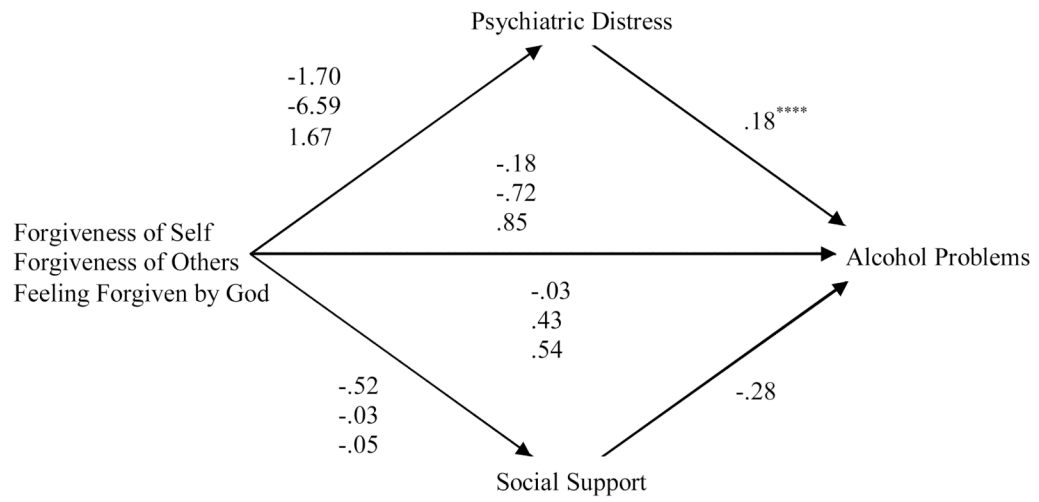
**Figure 2. Baseline Indirect Effects Model: Forgiveness and Alcohol Problems**

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; \*\*\*\*  $p \leq .0001$



**Figure 3. Follow-Up Indirect Effects Model: Forgiveness and Alcohol Problems**

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; \*\*\*\*  $p \leq .0001$



**Figure 4. Baseline to Follow-Up Indirect Effects Model: Forgiveness and Alcohol Problems**  
 \*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; \*\*\*\*  $p \leq .0001$

**Table 1**  
**Demographic and Alcohol-Related Characteristics**

		Baseline (n=149)	Follow-Up (n=118)	
Gender (%):	Male	66.44	66.10	
	Female	33.56	33.90	
Ethnicity (%):	White	85.23	85.59	
	African-American	14.77	14.41	
Age:	<i>M</i>	38.89 years	38.63 years	
	<i>(SD)</i>	(13.93)	(14.10)	
Education:	<i>M</i>	13.87 years	13.94 years	
	<i>(SD)</i>	(2.27)	(2.24)	
Marital Status (%):	Never Married	35.57	38.14	
	Married	30.87	31.36	
	Living Together	7.38	5.93	
	Separated	7.38	5.93	
	Divorced	16.78	16.95	
	Widowed	2.01	1.69	
Employment Status (%):	Full-time	55.03	59.32	
	Part-time	15.44	15.25	
	None	29.53	25.42	
Religious Background and Behavior-Lifetime:	<i>M</i>	14.60	14.86	
	<i>(SD)</i>	(2.36)	(2.48)	
Alcohol Diagnosis (%):	Dependence	91.95	90.68	
	Abuse	8.05	9.32	
Age of Onset of Alcohol Diagnosis:	Dependence	<i>M</i>	26.45 years	26.89 years
		<i>(SD)</i>	(12.38)	(12.33)
	Abuse	<i>M</i>	18.55 years	18.00 years
		<i>(SD)</i>	(3.08)	(2.63)
History of Prior Treatment (%):		72.48	71.19	

**Table 2**  
**Bivariate Associations and More Alcohol-Related Characteristics**

	Alcohol Problems	Percent Heavy Drinking Days <sup>a,b</sup>	Percent Days Abstinent <sup>a,b</sup>	Drinks per Drinking Day <sup>a,b</sup>	Psychiatric Distress	Social Support
Forgiveness						
of Self	Base	-.38***	-.26***	.17*	-.21**	-.44***
	FU	-.26***	-.13	.04	-.10	-.36***
	Base/FU	-.24**	-.04	-.00	-.01	-.35***
of Others	Base	-.31***	-.16*	.20*	-.10	-.29**
	FU	-.07	-.07	.04	-.07	-.29**
	Base/FU	-.13	.01	.03	.02	-.30***
by God	Base	-.15	-.21*	.20*	-.17*	-.20*
	FU	-.13	-.10	.10	-.05	-.17
	Base/FU	.02	.04	-.09	.10	-.11
Psychiatric Distress						
Base	.46***	.27***	-.28***	.22**	--	-.18*
	FU	.47***	.14	-.18	.16	--
	Base/FU	--	--	--	--	--
Social Support						
Base	-.08	-.02	-.04	-.01	-.18*	--
	FU	-.23*	-.11	.19*	-.19*	-.23*
	Base/FU	--	--	--	--	--
Base	M	20.56	26.97	68.56	8.30	--
	(SD)	(12.26)	(27.24)	(27.20)	(5.95)	--
	Skewness	.15	.69	-.48	.67	--
FU	M	6.66	5.30	90.91	3.19	--
	(SD)	(9.77)	(14.59)	(20.18)	(9.02)	--
	Skewness	2.00	3.60	-2.67	7.67	--

<sup>a</sup> in last 90 days

<sup>b</sup> Follow-up based correlations employ Spearman's rho, due to Skewness > 2

Base = Baseline (n=142-149)

FU = Follow-Up (n=111-118)

Base/FU = Baseline to Follow-Up (n=112-118)

Effect size (strength of association) of  $r$ : .10=small, .30=medium, .50=large (Cohen, 1988)

\*  $p \leq .05$ ; \*\*  $p \leq .01$ ; \*\*\*  $p \leq .001$ ; \*\*\*\*  $p \leq .0001$



**Table 3**

Indirect Effects between Forgiveness and Alcohol-Related Outcomes

	Forgiveness of Self			Forgiveness of Others			Feeling Forgiven by God		
	Point Estimate	BCa 95% CI Lower	Upper	Point Estimate	BCa 95% CI Lower	Upper	Point Estimate	BCa 95% CI Lower	Upper
	Baseline Alcohol Problems (n = 138) <sup>d</sup>								
<i>ab</i>	-2.64*	-4.63	-0.98	-1.56*	-3.72	-1.16	-0.64	-2.09	.29
<i>a<sub>1</sub>b<sub>1</sub></i>	-2.88*	-4.83	-1.28	-1.40*	-3.63	-0.08	-0.59	-2.15	.33
<i>a<sub>2</sub>b<sub>2</sub></i>	.24	-.15	1.01	-.16	-.78	.10	-.05	-.54	.13
vs.	-3.12*	-5.23	-1.35	-1.23	-3.56	.13	-.55	-2.14	.46
	Baseline Percent Heavy Drinking Days (n = 141) <sup>b</sup>								
<i>ab</i>	-3.12*	-7.06	-.16	-2.22*	-6.34	-.25	-.90	-3.33	.24
<i>a<sub>1</sub>b<sub>1</sub></i>	-3.54*	-7.21	-.69	-1.95*	-6.17	-.17	-.80	-3.37	.22
<i>a<sub>2</sub>b<sub>2</sub></i>	.41	-.73	2.13	-.26	-1.59	.30	-.10	-1.14	.21
vs.	-3.95*	-8.10	-.63	-1.69	-5.85	.33	-.70	-3.33	.51
	Baseline Percent Days Abstinent (n = 141) <sup>c</sup>								
<i>ab</i>	3.29*	.14	7.48	2.68*	.53	6.75	1.08	-.25	3.45
<i>a<sub>1</sub>b<sub>1</sub></i>	4.02*	1.06	8.05	2.22*	.27	6.64	.91	-.29	3.40
<i>a<sub>2</sub>b<sub>2</sub></i>	-.72	-2.55	.26	.46	-.17	1.84	.17	-.26	1.33
vs.	4.74*	1.37	9.24	1.76	-.57	6.42	.74	-.81	3.28
	Baseline Drinks Per Drinking Day (n = 141) <sup>d</sup>								
<i>ab</i>	-.56	-1.30	.09	-.48*	-1.32	-.04	-.19	-.70	.04
<i>a<sub>1</sub>b<sub>1</sub></i>	-.70*	-1.45	-.08	-.39*	-1.21	-.02	-.16	-.69	.04
<i>a<sub>2</sub>b<sub>2</sub></i>	.14	-.08	.57	-.09	-.47	.04	-.03	-.30	.05
vs.	-.84*	-1.75	-.10	-.30	-1.13	.12	-.13	-.69	.15
	Follow-Up Alcohol Problems (n = 107) <sup>e</sup>								
<i>ab</i>	-2.11*	-4.59	-.65	-.97	-4.22	.98	-.37	-2.10	.71
<i>a<sub>1</sub>b<sub>1</sub></i>	-1.69*	-4.22	-.47	-1.03	-4.64	.76	-.41	-2.18	.43

	Forgiveness of Self			Forgiveness of Others			Feeling Forgiven by God		
	Point Estimate	BCa 95% CI Lower	Upper	Point Estimate	BCa 95% CI Lower	Upper	Point Estimate	BCa 95% CI Lower	Upper
$a_2b_2$	-.42	-1.71	.03	.06	-.59	1.09	.04	-.50	.91
vs.	-1.28	-3.68	.25	-1.09	-4.87	.88	-.44	-2.24	.65
Baseline to Follow-Up Alcohol Problems (n = 98) <sup>f</sup>									
$ab$	-.15	-1.66	1.44	-1.15	-3.39	.12	.31	-.85	2.23
$a_1b_1$	-.30	-1.74	.98	-1.16*	-3.30	-.04	.29	-.73	2.05
$a_2b_2$	.14	-.15	1.20	.01	-.46	.52	.01	-.29	.53
vs.	-.44	-1.95	.78	-1.17	-3.09	.02	.28	-.80	1.84

<sup>a</sup> Full DV Model (FDVM)  $R^2 = .35^{*****}$ ;

<sup>b</sup> FDVM  $R^2 = .21^{**}$ ;

<sup>c</sup> FDVM  $R^2 = .20^{**}$ ;

<sup>d</sup> FDVM  $R^2 = .18^{**}$ ;

<sup>e</sup> FDVM  $R^2 = .34^{*****}$ ;

<sup>f</sup> FDVM  $R^2 = .40^{*****}$

BCa 95% CI = Bias Corrected and Accelerated 95% Confidence Interval

$ab$  = Total Indirect Effect

$a_1b_1$  = Specific Indirect Effect through Psychiatric Distress

$a_2b_2$  = Specific Indirect Effect through Social Support

vs. =  $a_1b_1$  versus  $a_2b_2$

\*  $p \leq .05$ ;

\*\*  $p \leq .01$ ;

\*\*\*  $p \leq .001$ ;

\*\*\*\*  $p \leq .0001$

5,000 bootstrap samples

**Table 4**  
**Summary of Significant Mediation Analyses**

	Forgiveness of Self	Forgiveness of Others
	Psychiatric Distress	
Baseline:		
Alcohol Problems	Full Mediation	Full Mediation
Heavy Drinking Days	Full Mediation	Indirect Only
Days Abstinent	Indirect Only	Full Mediation
Drinks per Drinking Day	Indirect Only	Indirect Only
Follow-Up:		
Alcohol Problems	Full Mediation	--
Baseline to Follow-Up:		
Alcohol Problems	--	Indirect Only