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Maladaptive Coping as a Mediator of Family Stress

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Abstract

Family members of women substance users may be at risk for stress-related problems. Family coping responses may affect outcomes for both families and women in treatment. Eighty-two women in treatment for substance use disorders (56 with comorbid psychiatric conditions) and 82 family members were interviewed. Stressors related to women's disorders were significantly related to increased family member burden. Women's behavioral problems predicted greater family member Worry, Displeasure, and Impact. Extent of women's drug or alcohol use predicted greater family member Stigma and Impact. Family member maladaptive coping partially mediated relationships between family member stressors and family member Displeasure and Impact. Family member maladaptive coping also functioned as a moderator between the stressors and Impact.

Keywords

Family coping; substance use disorders; co-occurring disorders; women; impact on family; alcohol and drug problems; stress-coping model

Treatments for alcohol and drug problems that take patients' family and social support networks into account are among the most empirically well-supported therapeutic approaches in existence (Miller & Wilbourne, 2002). Despite the evidence for their effectiveness, however, behavioral treatments for couples or families are rarely used (Fals-Stewart & Birchler, 2001). One reason that the family role in recovery is minimized may be that historically, family members have been negatively conceptualized. Family members have been seen as sick codependents or enablers whose pathological behavior contributed to the problems of substance abusers (Copello, Orford, Velleman, Templeton, & Krishnan, 2000). However, there is limited empirical evidence for the codependency construct (Stafford, 2001). Similarly, in the mental health field, some models have assumed that family efforts on behalf of an ill relative were destructive or dysfunctional (Lefley, 1989).

With the exception of some findings that severe childhood abuse is related to some dissociative disorders, the conclusion that families are to blame for relatives' psychiatric problems is not supported. Lefley (1996) reviewed the literature on "schizophrenic families," and found that there is no empirical evidence for family pathogenesis of

schizophrenia. More recent work stresses that families can have a positive or negative influence on the course and outcome of a relative's illness. In both psychiatric and substance abuse treatment, the stress-coping model (Lazarus & Folkman, 1984) has been adopted to avoid negative connotations of earlier theoretical perspectives (McFarlane, Dixon, Lukens, & Lucksted, 2003; Rotunda & Doman, 2001). In this model, the assumption is that family behavior is a normal response to a stressful situation.

The needs of family members themselves also merit investigation. Caregiver stress has been extensively studied in the aging population, but has not received as much research attention in the literature on substance use or co-occurring disorders. This is especially true among families of women in treatment for substance use. Impacts of caregiving in other populations have sometimes been found to be quite severe. For example, Schulz and Beach (1999) found that older caregivers who were providing care to an ill spouse and experiencing strain had a 63% higher mortality risk than non-caregiver controls. Similarly, family members caring for a relative with substance use or psychiatric problems may experience serious negative effects. They are at increased risk for various stressors, including domestic violence. Increases in anxiety, depression, and health problems among families of persons with substance use or psychiatric disorders have been reported (Biegel & Schulz, 1999; Copello et al., 2000; Song, Biegel, & Milligan, 1997).

In the stress-coping model, specific coping behaviors are understood as predominantly adaptive or maladaptive. In general, problem-focused, active coping is thought to be more likely to lead to positive outcomes than emotion-focused coping, which relies more on emotional venting and problem avoidance. Adaptive strategies are active coping, planning, positive reframing, acceptance, humor, religion, using emotional support, and using instrumental support. Maladaptive coping includes self-distraction, denial, venting negative emotion, substance use, behavioral disengagement, and self-blame (Carver, 1997; Carver, Scheier, & Weintraub, 1989). Lazarus and Folkman (1984) found that subjects' appraisals of stressful situations strongly predicted the type of coping strategies they would employ. If subjects believed the situation was amenable to change through their own efforts, they were more likely to choose problem-focused coping techniques. On the other hand, judgments that the situation called for acceptance were associated with coping efforts more oriented toward emotion regulation. Family member coping behavior may affect family member outcomes.

Family member coping strategies may also affect outcomes for relatives in treatment for substance use or psychiatric disorders. Improving family member coping skills is a goal of several effective treatments. Specific family behaviors that are targets of change often include expression of hostile or critical emotions and enabling (behaviors that reinforce drinking or drug use). Interventions targeting family behavior in substance-abusing or dually-disordered populations have been found to increase treatment engagement and adherence, promote psychiatric stability, reduce substance use and relapse, and increase well-being of both clients and family members (Hogarty et al., 1991; McFarlane et al., 1995; Meyers, Miller, Smith, & Tonigan, 2002; Miller, Meyers, & Tonigan, 1999; O'Farrell & Fals-Stewart, 2000; Fals-Stewart & O'Farrell, 2003; Fals-Stewart et al., 2000).

Relatives' high expressed emotion (criticism, hostility, emotional over involvement) is associated with relapse across a broad range of psychiatric disorders, including alcohol dependence, PTSD, mood disorders, and eating disorders (Butzlaff & Hooley, 1998; O'Farrell, Hooley, Fals-Stewart, & Cutter, 1998; Tarrier, Sommerfield, & Pilgrim, 1999). In families of patients with severe mental illness, greater burden of care has been found to be related to higher level of expressed emotion by relatives (Scazufca & Kuipers, 1996). Also, relatives of dually-diagnosed patients with both substance use problems and severe mental

illness had more negative affect toward the patient than relatives of persons with severe mental illness alone (Niv, Lopez, Glynn, & Mueser, 2007), suggesting that relapse-inducing hostile or critical interactions may be more likely to occur in such families. Family members who improved coping by reducing expressed emotion also experienced a reduction in their own burden over time (Magliano et al., 2000; Scazufka & Kuipers, 1998).

Enabling behavior may also be related to family member distress. The findings of Dittrich and Trapold (1984) are consistent with this hypothesis. These researchers developed a self-report instrument of enabling behaviors in conjunction with a brief treatment package for female partners of alcoholics. They found that treatment participants reduced their enabling behaviors and improved on anxiety level, self-concept, and depression.

Whether or not persons with mental illness or substance use disorders are involved in formal service systems, they usually stay in contact with their families. Researchers have found that 42% to 90% of adult drug abusers have lived with a parent and that most maintain family ties (Stanton, 1997). Strauss and Falkin (2001) found that women in court-mandated drug treatment programs identified parents and partners as their major providers of practical help and advice. Because they occupy a central role in clients' lives, family members are in a good position to help their ill relatives and to support recovery over the long term.

METHODOLOGY

The conceptual framework of this study utilizes a stress-coping model. In our model, family member stressors (client behavioral problems, treatment motivation, substance abuse, dual diagnosis status, and institutional status) have a direct impact on family member well-being (burden, depressive symptomatology and physical health). We also assessed whether family member adaptive or maladaptive coping mediated or moderated these relationships. As described by Baron and Kenny (1986) and as discussed in our hypotheses below, moderation and mediation represent different causal pathways.

A moderator variable affects the direction and/or strength of the relation between an independent and dependent variable. In contrast, a mediator variable accounts for the relationship between the independent and dependent variable. Thus, while moderator variables specify when certain effects will hold, mediators can tell us how or why such effects occur (Baron, & Kenny, 1986). In our study, we examine both moderation and mediation for a fuller understanding of the role of family member coping on the relationship between family member stressors and family member well-being. Figures 1 and 2 show our conceptual model adapted from Baron and Kenny (1986) and the hypothesized relationships among client stressors, family member coping, and family member well-being.

This study examined three hypotheses based on the above conceptual model.

Hypothesis 1 - Higher family member stressors will be related to lower family member well being (Figure 1, Path C).

Hypothesis 2 - Higher family member adaptive coping and lower family member maladaptive coping will mediate the effect of stressors on family member well-being, such that higher family member stressors will lead to lower adaptive coping and higher maladaptive coping (Figure 1, Path A). Lower adaptive and higher maladaptive family member coping will in turn result in lower family member well being (Figure 1, Path B). When taking the mediator --family member coping-- into consideration, the relationship between family member stressors and family member well-being will be reduced.

Hypothesis 3 – Alternatively, if family adaptive or maladaptive coping is better understood as a moderator, adaptive coping will buffer the relationship between high stress and family member well-being, while maladaptive coping will exacerbate the relationship between high stress and well-being (Figure 2, Path C).

Participants

The study analyzed data from *Families of Women with Co-occurring Substance Abuse and Mental Disorders: Involvement, Roles and Well-Being* (Biegel, Katz-Saltzman, Tracy, & Townsend, 2006). The study sample consisted of women participating in either a publicly funded outpatient or a residential women-only substance abuse treatment program serving low-income clients and a supportive family member identified by each of these women. To be eligible for the study, the women had to be at least 18 years old and to have been in substance abuse treatment for three weeks or more. Women with a diagnosis of schizophrenia or currently using medication typically prescribed for a major thought disorder were excluded from the sample.

Almost all of the women who met these study eligibility criteria (97%) were successfully contacted about the study. Of these, 96% (N = 87) agreed to participate and provide the name of a family member. Only two family members refused to participate in the study and three others were unable to be contacted. The final study sample comprised 82 women and 82 family members (one for each woman in treatment).

Procedure

Women in treatment for substance use disorders at two sites in a Midwestern urban community were contacted by researchers and given information about the risks, benefits, and purpose of the study. Women were asked to participate in the study and to name “a family member who provides you with the most social support” to be contacted by researchers. Formal written consent was obtained from the women in treatment and from contacted family members prior to initiation of interviews. Case Western Reserve University Institutional Review Board approval was granted. A Certificate of Confidentiality was obtained from NIDA that further protects the interests of study participants. The study used a non-experimental, cross-sectional survey design. Data were collected by trained interviewers in face-to-face interviews. Family members were provided transportation assistance to facilitate their travel to the interview site. All respondents, both the women and their family members, received a \$45 food store gift card for their participation. Data for this study were drawn from both the women’s interview and the interview with her family member.

Women in Treatment for Substance Use Disorder—In the sample of women in treatment for a current substance use disorder (N = 82), more than four-fifths (81.7%, N = 67) were African American, and most were of low socioeconomic status. Nearly three-fifths (59.8%, N = 49) of the women were unemployed at the time of the interview, and the sample as a whole had relatively low levels of education. Almost half did not complete high school. One respondent (1.2%) reported that she did not complete elementary school, 40 (48.8%) completed elementary or junior high school, 40 (48.8%) completed high school or technical school, and 1 (1.2%) reported having her associate degree. Less than a third (32.9%, N = 27) were living in their own homes, and about one-eighth (12.2%, N = 10) were living with a relative caregiver. Age range was 21 to 55, with a mean of 34.12 years. The most frequent current substance use diagnoses based on data from the structured Clinical Intake Assessment Interview-Cleveland (CIAI-C, University of Akron, 2001) were cocaine dependence (55.6%, N = 45), alcohol dependence (50.6%, N = 41), and cannabis dependence (27.2%, N = 22). Most of the women (86.4%) were dependent on at least one

drug, and 50.6% of the sample were dependent on two or more drugs. More than half of the women (56.1%, $N = 46$) also had a mental disorder, and many had multiple mental disorders. Most frequent current psychiatric diagnoses based on data from the Computerized Diagnostic Interview Schedule (C-DIS; Helzer et al., 1985; Robins, Helzer, Croughan, & Ratcliff, 1981) were major depression (40.2%, $N = 33$), posttraumatic stress disorder (28.0%, $N = 23$), and mania (22.0%, $N = 18$).

Family Members—The sample of family members ($N = 82$) was also predominantly African American (84.1%, $N = 69$) and of lower socioeconomic status. Nearly a third (31.7%, $N = 26$) reported an annual family income of less than \$15,000, and about three-fifths (59.8%, $N = 49$) had family incomes of less than \$25,000 per year. Most (59.8%, $N = 49$) were working either full or part time. More than half (59.8%, $N = 49$) of the family members were female and the remaining 40.2% ($N = 33$) were male. Most frequently, the family member identified as most supportive by the women in treatment was a spouse or significant other (31.7%, $N = 26$). The remaining family members were sisters (23.2%, $N = 19$), daughters (19.5%, $N = 16$), mothers (11.0%, $N = 9$), and other relatives (14.6%, $N = 12$) of the women receiving treatment. The relationship of caregivers to the women in treatment was highly correlated with caregiver gender. Thus, 96% of caregivers who were significant others were male while 86% of caregivers who were non-significant others were female. Age range of family members was 18 to 77, with a mean of 40.04 years.

Measures

Substance Use and Psychiatric Disorders—To determine client eligibility for the study, diagnostic interviews were administered to assess client substance use disorders and mental disorders. Client substance use was assessed at treatment intake using the structured Clinical Intake Assessment Interview-Cleveland (CIAI-C), a computerized assessment instrument yielding a DSM-compatible diagnosis. This scale is used by all the treatment agencies in the county where the study was conducted (University of Akron, 2001).

Mental disorders were assessed using selected sections of the Computerized Diagnostic Interview Schedule (C-DIS). The C-DIS has demonstrated reliability and validity (Robins, Helzer, Croughan, & Ratcliff, 1981; Helzer et al., 1985) and is based upon criteria from the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV, American Psychiatric Association, 1994). Sections of the C-DIS assessing generalized anxiety disorder, depression, dysthymia, posttraumatic stress disorder, and mania/hypomania were included in the study. Interviewers were trained in proper administration of the C-DIS. Clients were coded as having a dual disorder if the C-DIS indicated the current presence (last 12 months) of at least one of the targeted mental disorders (anxiety, depression, dysthymia, PTSD, or mania/hypomania).

Family Member Stressors—Frequency of client behavioral problems were measured using a Client Behaviors Scale developed by Biegel and colleagues for use with family caregivers of persons with mental illness (Biegel, Milligan, Putnam, & Song, 1994) and adapted for the current study based on the work of Kirby, Dugosh, Benishek, and Harrington (2005). The modified scale consists of 58 items identifying behavioral problems displayed by the study population that may be perceived as stressful by family members. It includes such behavior problems as difficulty managing money, causing trouble with the neighbors, or causing family member embarrassment. Responses were on a five point scale from 0 (Never) to 4 (Constantly or Almost Constantly). Higher scores indicate a greater degree of client behavioral problems.

The client treatment motivation scale used in the study assessed motivation as reported by the women in treatment for substance abuse or dependence. It is a 24-item measure with three subscales: problem recognition, readiness for treatment, and desire for help. Responses are on a 5-point Likert scale ranging from 0 (Strongly Disagree) to 4 (Strongly Agree). Higher scores on the subscales and on the total scale indicate greater treatment motivation. The scale has demonstrated good reliability and validity and has predicted client retention in treatment (Knight, Holcom, & Simpson, 1994).

Client substance use as a family stressor variable means client substance use as perceived by the family member. It was measured by two items from the family member interview. The first item asked for the family member's estimate of frequency of drug or alcohol use by their relative in the past twelve months. Responses ranged from 0 (never) to 4 (constantly or almost constantly). The second item asked how much of a problem client's drug or alcohol use has been in the past 12 months. Responses ranged from 0 (not at all) to 3 (severe).

Client institutional status means whether or not client had ever been hospitalized for a drug or alcohol problem or an emotional problem or had been arrested or incarcerated within the past six months. Two items from the family member interview and two items from the client's interview are included as measures. Family members were asked whether their relative was ever hospitalized for a drug or alcohol problem (yes or no) or for an emotional problem (yes or no).

Women in treatment were asked whether they had been arrested in the past 6 months (yes or no) or in jail or prison in the past 6 months (yes or no).

Family Member Coping—Adaptive and maladaptive subscales of the Brief COPE (Carver, 1997) were used to measure family member coping. The Brief COPE is a 28-item scale developed from the longer COPE, which has demonstrated good reliability and validity when tested with large samples (Carver, Scheier, & Weintraub, 1989). The scale was modified for use with families of persons with mental illness by Mannion, Meisel, Solomon, and Draine (1996). The Brief COPE comprises 14 theoretically-derived subscales of two items each: (a) Active Coping, (b) Planning, (c) Positive Reframing, (d) Acceptance, (e) Humor, (f) Religion, (g) Using Emotional Support, (h) Using Instrumental Support, (i) Self-Distraction, (j) Denial, (k) Venting, (l) Substance Use, (m) Behavioral Disengagement, and (n) Self-Blame. Responses for each item are a 4-point Likert scale ranging from 0 (I haven't been doing this at all) to 3 (I've been doing this a lot).

Based on evidence that these factors tend to be either generally adaptive or problematic, the scale can also be divided into adaptive or maladaptive subscales (Carver, 1997). The Adaptive Coping subscale contains 16 items with a possible range of 0 to 48, such that higher scores indicate greater use of adaptive coping. The Adaptive Coping subscale includes Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Using Emotional Support, and Using Instrumental Support. The Maladaptive Coping subscale contains 12 items with a possible range of 0 to 36, such that higher scores indicate greater use of maladaptive coping. The Maladaptive Coping subscale includes Self-Distraction, Denial, Venting, Substance Use, Behavioral Disengagement, and Self-Blame.

Family Member Outcomes—Based on findings from previous research documenting the multidimensional nature of caregiver burden, the burden construct was conceptualized as having both subjective and objective components (Biegel, Milligan, Putnam, & Song, 1994; Tessler & Gamache, 1995). Subjective and objective burden were measured by four subscales of the Family Experiences Interview Schedule, an instrument with established reliability and construct validity (Tessler & Gamache, 1995). The four subscales were (a)

Worry, (b) Displeasure, (c) Stigma, and (d) Impact. Worry, Displeasure, and Stigma are measures of subjective burden, whereas the Impact subscale is a measure of objective burden.

Items from the Worry, Stigma and Impact subscales were rated on a 5-point scale and items from the Displeasure subscale were rated on a 4-point scale, such that higher total scores on each subscale indicated greater degree of family member burden in that area.

Family member depressive symptomatology was measured using the 20-item Center for Epidemiological Studies Depressive Mood Scale (CES-D; Radloff, 1977), which was designed to identify persons at risk for depression. The scale has been widely used in clinical and psychiatric settings and in studies of caregivers of individuals with Alzheimer's disease or mental illness (Corcoran & Fischer, 1987; Schulz & Williamson, 1991; Schulz, Williamson, Morycz, & Biegel, 1992). Respondents indicate on a 4-point scale (0–3) how often they experienced a particular depressive symptom during the previous week. This measure has also demonstrated good reliability when used with a sample of lower socioeconomic status African American and Caucasian caregivers (Biegel, Milligan, Putnam, & Song, 1994).

Family member physical health was measured by a single item asking family members to rate their overall physical health at the present time. Responses were rated on a 5-point Likert scale ranging from 1 (poor) to 5 (excellent). This single-item self-report measure of physical health was developed and validated for the Health Insurance Study conducted by the National Center for Health Services Research (Brook et al., 1979).

Control Variables—Two single items were included in the study as control variables: gender and relationship. Gender of the family member (male or female) was recorded by the interviewer (male = 1, female = 2). The relationship item included in the analysis was whether or not respondent was the client's significant other or spouse (no = 0, yes = 1).

Data Analysis

SPSS statistical software was used to conduct all statistical analyses. Bivariate relationships were examined to determine size and direction of correlations and to identify any potential problems of multicollinearity. Control variables were included in multivariate analyses if they were found to be significantly correlated with outcomes, but not with each other.

Multivariate analyses utilizing hierarchical regression were conducted to investigate predictors of family member well-being. Although the sample size for this study was relatively small, we utilized hierarchical regression based on the strong conceptualization of this study and prior research that suggested the relationships being tested. A separate hierarchical regression was performed for each outcome (four burden subscales, depressive symptomatology, and physical health). Adaptive and maladaptive coping were then entered into the model to test the hypotheses related to coping as a mediator or moderator as described by Baron and Kenny (1986) and Cohen, Cohen, West, and Aiken (2003). Baron and Kenny (1986) explain that mediation is established when three conditions are met (see Figure 1): the independent variable affects the mediator (Figure 1, Path A), the independent variable affects the dependent variable (Figure 1, Path C), and the mediator affects the dependent variable controlling for the independent variable (Figure 1, Path B). To test whether a variable functions as a moderator (Figure 2), the independent variables (Figure 2, Path A) and the proposed moderator (Figure 2, Path B) are first entered into the regression equation. Then, as a separate step, the interaction term (product of the independent variable and the proposed moderator) is entered (Figure 2, Path C). A statistically significant increase in R^2 after the addition of the interaction term indicates a moderation effect. Gender of

family member and relationship of family member to client (whether or not client is the family member's significant other) were considered in the analysis as control variables.

Some variables were eliminated from the regression analyses based upon either missing data or problems of multicollinearity, while others were selected for inclusion based on previous research. Thus, Incarceration and Hospitalization (Institutional Status) and Frequency of Drug/Alcohol Use in the Last 12 Months (Substance Use) were eliminated due to missing data. Of the three Treatment Motivation variables, Desire for Help was included in the regression analyses because it has been found to be the only one of our three Treatment Motivation subscales that was related to treatment retention and therapeutic engagement of substance abusers (Hiller, Knight, Leukefeld, & Simpson, 2002; Simpson & Joe, 1993). Treatment retention and therapeutic engagement of ill relatives may be logically related to family member well being. The two control variables (Caregiver Relationship and Gender) were also found to be highly intercorrelated (-777 , $p < .01$). Caregiver Relationship was included in the regression analyses and Gender was dropped.

Descriptive Findings

Table 1 shows the mean scores, range and standard deviations of stressor variables related to the client's substance use or psychiatric illness as well as reliability scores (Cronbach's alpha) for the Client Behavioral Problems scale and Client Treatment Motivation subscales.

The treatment motivation subscales indicate that client attitudes were generally positive toward treatment. Family members reported use of adaptive coping ($M = 26.32$, $SD = 8.07$) and maladaptive coping ($M = 11.34$, $SD = 5.77$). Cronbach's alphas for both scales were acceptable (adaptive coping $\alpha = .78$, maladaptive coping $\alpha = .70$). Item mean for the adaptive subscale was 1.645 – between “a little” and “some.” Item mean for the maladaptive subscale was 0.945 – “a little.” Family members had a mean score of 18.30 ($SD = 6.30$) on the Worry subscale of the burden measure. On the Stigma subscale, the mean was 8.96 ($SD = 8.84$). The Displeasure subscale had a mean score of 20.70 ($SD = 5.70$). On the Impact subscale, the mean was 4.90 ($SD = 3.93$). Family members also reported moderate to high levels of depressive symptomatology, with a mean of 13.51 ($SD = 9.38$). About two-fifths of family members (39%, $N = 32$) scored at or above 16, the cut point for risk of clinical depression on the CES-D. However, family members reported good physical health overall (mean = 3.04, $SD = 1.10$). Nearly two-thirds (64.6%, $N = 53$) reported good to excellent health at the time of the interview, while about a third (35.4%, $N = 29$) reported poor or fair health.

Findings Hypothesis 1: Multivariate Analysis - Main Effects (Figure 1, Path C)

To identify statistically significant relationships between illness-related stressors and family member outcomes while controlling for effects of multiple independent variables, hierarchical regression equations were estimated. In these equations, each dependent variable (family member outcome measure) was regressed on a set of predictor variables consistent with our conceptual model and literature review. The relationship/significant other variable was entered as a control in step 1 of each hierarchical regression equation. The other five stressors (client behavioral problems, desire for help, extent of substance use, dual disorder, and arrest history) were entered as predictors in step 2. This procedure was followed for each dependent variable (family member worry, stigma, displeasure, impact, depressive symptomatology, and physical health).

When each of the family member outcomes were regressed on the predictor variables, statistically significant main effects were found for Worry, Stigma, Displeasure, and Impact indicating that greater client behavioral problems predicted higher levels of Worry,

Displeasure and Impact and that greater client substance abuse problems predicted higher levels of Stigma, and Impact. The model was not statistically significant for Depressive Symptomatology or Caregiver Health. As no main effect was found, we did not test mediation or moderation for these two outcomes.

Findings Hypothesis 2 - Mediation

Having identified that our model is a significant predictor of four outcome variables in the first set of equations, we tested whether coping (either adaptive or maladaptive) is a mediator between client illness-related stressors and family member outcomes (Worry, Stigma, Displeasure, and Impact). To test Path A (Figure 1), separate hierarchical regressions were estimated for adaptive and maladaptive coping as dependent variables. In step 1, family member relationship was entered as a control variable. In step 2, the five family member stressors (centered) were entered. There were no significant relationships between Stressors and Adaptive Coping. Therefore, we conclude that Adaptive Coping is not a mediator. There was, however, a significant relationship between Stressors and Maladaptive Coping (See Table 2).

To complete the test for mediation, the four outcomes found to be significantly related to Stressors were tested to determine whether they were also significantly related to Maladaptive Coping (Figure 1, Path B).

Mediation effects were found for Maladaptive Coping and Displeasure (Table 3) and Maladaptive Coping and Impact (Table 4).

Findings did not support the hypothesis that family member well-being was mediated by adaptive coping. Contrary to expectations, we found that as illness-related stressors increase, family member adaptive coping and family member Worry also increase. Three of the two-item subscales that are components of adaptive coping are correlated with Worry. The adaptive coping items correlated with Worry are planning (.291, $p \leq .01$), using emotional support (.421, $p \leq .01$), and using instrumental support (.265, $p \leq .05$). One maladaptive coping subscale, self-distraction, was also correlated with Worry (.273, $p \leq .05$).

The hypothesis that family member well-being was mediated by family member Maladaptive Coping was supported by findings that family member Maladaptive Coping does function as a partial mediator between illness-related Stressors and family member Displeasure and Impact.

Findings related to coping as a mediator may be further explained by examining correlations between adaptive or maladaptive coping subscales and mediated outcomes. The Impact outcome found to be mediated by Maladaptive Coping was not associated with any subscale of Adaptive Coping, but was correlated with five of the two-item subscales that are components of maladaptive coping: self-distraction (.436, $p \leq .01$), venting (.371, $p \leq .01$), substance use (.278, $p \leq .05$), behavioral disengagement (.264, $p \leq .05$), and self-blame (.329, $p \leq .01$).

Findings Hypothesis 3 - Moderation

To test whether Adaptive Coping or Maladaptive Coping are moderators, hierarchical regression equations were estimated for each of the hypothesized moderators and each of the outcome variables (Worry, Stigma, Displeasure, and Impact) previously shown to be significantly affected by Stressors. In step 1, we entered Relationship as a control variable. In step 2, we entered all five Family Member Stressors. In step 3, we entered Adaptive Coping. In step 4, we entered the interaction terms – each centered Stressor by centered Adaptive Coping. We repeated this analysis separately for Adaptive and Maladaptive

Coping and for each dependent variable, Worry, Stigma, Displeasure, and Impact. The only significant effect was Maladaptive Coping as a moderator of Stress and Impact (Table 5). As Maladaptive Coping was previously found to mediate between the same variables, the findings support both the mediation and moderation hypotheses.

DISCUSSION

In summary, stressors related to client substance use or psychiatric problems had multiple negative impacts on family members, which were partially mediated by family member maladaptive coping. These findings replicate research on other populations of family caregivers, suggesting that families of substance users may be similar to other families struggling with a relative's chronic illness. Family members endorsed using adaptive coping responses more often than maladaptive ones, indicating that their coping behavior overall was not skewed toward maladaptive coping. Nonetheless, maladaptive coping had a greater impact on family member outcomes. The fact that family member maladaptive coping increased as client stressors increased is consistent with the view that family member maladaptive coping is a normal response to the stress caused by a relative's illness and is not necessarily a symptom of psychopathology. The unanticipated finding that adaptive coping was positively related to the family member Worry subscale suggests that worry may be adaptive when accompanied by active coping and planning.

Dimensions of family member maladaptive coping found in this study to be related to poorer family member outcomes may also impact relatives in treatment. We suspect that the venting negative emotion subscale of maladaptive coping overlaps conceptually with family members' high expressed emotion found by previous researchers to be related to relapse in substance use and psychiatric disorders. Similarly, substance use by a family member may not only be a dimension of maladaptive coping for the family member, but may also be related to the enabling construct or to relapse of the relative receiving treatment.

LIMITATIONS OF THE STUDY

This study is limited by its correlational design, which makes it impossible to draw conclusions about time order, direction of effect, and causality. It is also limited by the use of a convenience sample of low-income women who were currently receiving substance abuse treatment. Thus, study findings cannot be generalized to women not in substance abuse treatment or to women of higher income levels. The sample size was fairly small, a larger sample might have allowed analysis by specific relationship to the person in treatment and by whether or not the individual in treatment was living in the same household with the supportive family member. This study could not determine whether Maladaptive Coping is better understood as a mediator or moderator between Stress and Impact. Future studies that can support more sophisticated modeling methods will be needed to explore these paths. A further limitation is that we did not have the ability to correlate family coping with relatives' treatment outcomes. The coping scale used, the Brief COPE, is a simplified measure of general coping that does not address specific circumstances commonly found in families of substance users or substance users with comorbid psychiatric problems. However, a strength of using this "broad brush" coping measure is that it facilitates comparison between families of substance users and families coping with other chronic illnesses.

IMPLICATIONS FOR RESEARCH AND PRACTICE

This study provides evidence that family members of women in treatment for substance use disorders are at risk for negative outcomes similar to those found among other populations. This suggests that services need to be provided to family members to address these

problems. In other populations of family caregivers, the efforts of family members to help their ill relatives are recognized and supported. Services such as caregiver respite for people caring for a relative with dementia are becoming more available. However, services for family members of substance users are seldom offered. Not only are the needs of family members not addressed, family requests for help for the ill relative often go unanswered.

Therapists commonly refer family members to Al-Anon or similar groups. While this may be helpful, it is an insufficient response when the family's goal is to link their loved one to treatment or to support ongoing recovery (Fals-Stewart & O'Farrell, 2003; Miller, Meyers, & Tonigan, 1999). Stress-coping theory suggests that appraisal of whether or not a situation can be changed through one's own efforts will predict whether problem-focused (adaptive) or emotion-focused coping strategies will be chosen. One implication is that family members who believe that "nothing I do makes any difference" are making a cognitive error. Encouraging family members to take an active approach can be integrated with a 12-step perspective. Professionals can help family members distinguish between the things they cannot change and the things they can. Clinicians can point out that the family member is powerless over the behavior of other persons. However, the family member is not powerless over his or her own actions. The "Big Book" of Alcoholics Anonymous (1939) discusses at length the influence of the family environment on sobriety. The relationship between negative emotional expression and relapse, for example, was well known to the early AAs. Family members can be encouraged to decrease behaviors that enable drinking or trigger relapse. Such actions as scheduling enjoyable sober activities can be framed as support and encouragement for a loved one's eventual recovery.

Implications for future research are that family coping behaviors may be important mechanisms of change that affect outcomes for clients and family members. Researchers need to tease out which family coping behaviors are active ingredients in change efforts. Our findings suggest that use of maladaptive coping by family members has a disproportionate effect on family member outcomes. Therefore, intervention efforts should focus on reduction of these behaviors as a priority. Researchers also need to include families and social networks in study designs and measure family member outcomes. Reduction of family stress should be a treatment goal. It may be that family coping efforts that help the client may not help the family member in every case. Researchers need to identify what specific coping behaviors are most helpful and to whom. Interventions can then include strategies to simultaneously assist persons in treatment and their concerned family members.

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References

- Alcoholics Anonymous World Services. Alcoholics Anonymous: The story of how many thousands of men and women have recovered from alcoholism. 4. New York: Author; 1939.
- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4. Washington, DC: Author; 1994.
- Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*. 1986; 51:1173–1182. [PubMed: 3806354]
- Biegel DE, Schulz R. Caregiving and caregiver interventions in aging and mental illness. *Family Relations*. 1999; 48:345–354.

- Biegel DE, Katz-Saltzman S, Tracy E, Townsend A. Predictors of dyadic relationship quality of women in substance abuse treatment. *Journal of Dual Diagnosis*. 2006; 3(1):87–112.
- Biegel DE, Milligan SE, Putnam PL, Song LY. Predictors of burden among lower socioeconomic status caregivers of persons with chronic mental illness. *Community Mental Health Journal*. 1994; 30:473–494. [PubMed: 7851101]
- Brook RH, Ware JED, Stewart AL, Donald CA, Rogers WH, Williams KN, Johnson JA. Overview of adult health status measures fielded in Rand's Health Insurance Study. *Medical Care*. 1979; 17:1–119.
- Butzlaff RL, Hooley JM. Expressed emotion and psychiatric relapse: A meta-analysis. *Archives of General Psychiatry*. 1998; 55:547–552. [PubMed: 9633674]
- Carver CS. You want to measure coping but your protocol's too long: Consider the brief COPE. *International Journal of Behavioral Medicine*. 1997; 4:92–100. [PubMed: 16250744]
- Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*. 1989; 56:267–283. [PubMed: 2926629]
- Cohen, J.; Cohen, P.; West, SG.; Aiken, LS. *Applied multiple regression/correlation analysis for the behavioral sciences*. 3. Mahwah, NJ: Erlbaum; 2003.
- Copello A, Orford J, Velleman R, Templeton L, Krishnan M. Methods for reducing alcohol and drug related family harm in non-specialist settings. *Journal of Mental Health*. 2000; 9:329–343.
- Corcoran, K.; Fischer, J. *Measures for clinical practice: A sourcebook*. New York: Free Press; 1987.
- Dittrich JE, Trapold MA. A treatment program for wives of alcoholics: An evaluation. *Bulletin of the Society of Psychologists in Addictive Behaviors*. 1984; 3:91–102.
- Fals-Stewart W, Birchler GR. A national survey of the use of couples therapy in substance abuse treatment. *Journal of Substance Abuse Treatment*. 2001; 20(4):277–283. [PubMed: 11672643]
- Fals-Stewart W, O'Farrell TJ. Behavioral family counseling and naltrexone for male opioid-dependent patients. *Journal of Consulting and Clinical Psychology*. 2003; 71:432–442. [PubMed: 12795568]
- Fals-Stewart W, O'Farrell TJ, Feehan M, Birchler GR, Tiller S, McFarlin SK. Behavioral couples therapy versus individual-based treatment for male substance-abusing patients: An evaluation of significant individual change and comparison of improvement rates. *Journal of Substance Abuse Treatment*. 2000; 18:249–254. [PubMed: 10742638]
- Helzer JE, Robins LN, McEvoy LT, Spitznagel EL, Stoltzman RK, Farmer A, Brockington IF. A comparison of clinical and diagnostic interview schedule diagnoses. Physician reexamination of lay-interviewed cases in the general population. *Archives of General Psychiatry*. 1985; 42:657–666. [PubMed: 4015307]
- Hiller ML, Knight K, Leukefeld C, Simpson DD. Motivation as a predictor of therapeutic engagement in mandated residential substance abuse treatment. *Criminal Justice and Behavior*. 2002; 29(1):56–75.
- Hogarty GE, Anderson CM, Reiss DJ, Kornblith SJ, Greenwald DP, Ulrich RF, Carter M. Family psychoeducation, social skills training, and maintenance chemotherapy in aftercare treatment of schizophrenia: II. Two-year effects of a controlled study on relapse and adjustment. *Archives of General Psychiatry*. 1991; 48:340–347. [PubMed: 1672589]
- Kirby KC, Dugosh KL, Benishek LA, Harrington VM. The Significant Other Checklist: Measuring the problems experienced by family members of drug users. *Addictive Behaviors*. 2005; 30(1):29–47. [PubMed: 15561447]
- Knight, K.; Holcom, M.; Simpson, DD. TCU psychosocial functioning and motivation scales: Manual on psychometric properties. 1994. Retrieved January 27, 2008, from Texas Christian University, Institute of Behavioral Research Web site: <http://www.ibr.tcu.edu/pubs/datacoll/kk6-srf-95.pdf>
- Lazarus, RS.; Folkman, S. *Stress, appraisal, and coping*. New York: Springer; 1984.
- Lefley HP. Family burden and family stigma in major mental illness. *American Psychologist*. 1989; 44:556–560. [PubMed: 2648907]
- Lefley, HP. *Family caregiving in mental illness*. Thousand Oaks, CA: Sage; 1996.
- Magliano L, Fadden G, Economou M, Held T, Xavier M, Guarneri C, Malangone C, Marosco C, Maj M. Family burden and coping strategies in schizophrenia: 1-year follow-up data from the BIOMED I study. *Social Psychiatry and Psychiatric Epidemiology*. 2000; 35:109–115. [PubMed: 10855508]

- Mannion E, Meisel M, Solomon P, Draine J. A comparative analysis of families with mentally ill relatives: Support group members versus non-members. *Psychiatric Rehabilitation Journal*. 1996; 20:43–50.
- McFarlane WR, Dixon L, Lukens E, Lucksted A. Family psychoeducation and schizophrenia: A review of the literature. *Journal of Marital and Family Therapy*. 2003; 29(2):223–245. [PubMed: 12728780]
- McFarlane WR, Lukens E, Link B, Dushay R, Deakins SA, Newmark M, Dunne EJ, Horen B, Toran J. Multiple-family groups and psychoeducation in the treatment of schizophrenia. *Archives of General Psychiatry*. 1995; 52:679–687. [PubMed: 7632121]
- Meyers RJ, Miller WR, Smith JE, Tonigan JS. A randomized trial of two methods for engaging treatment-refusing drug users through concerned significant others. *Journal of Consulting and Clinical Psychology*. 2002; 70:1182–1185. [PubMed: 12362968]
- Miller WR, Wilbourne PL. Mesa Grande: A methodological analysis of clinical trials of treatments for alcohol use disorders. *Addiction*. 2002; 97:265–277. [PubMed: 11964100]
- Miller WR, Meyers RJ, Tonigan JS. Engaging the unmotivated in treatment for alcohol problems: A comparison of three strategies for intervention through family members. *Journal of Consulting and Clinical Psychology*. 1999; 67:688–697. [PubMed: 10535235]
- Niv N, Lopez SR, Glynn SM, Mueser K. The role of substance use in families' attributions and affective reactions to their relative with severe mental illness. *The Journal of Nervous and Mental Disease*. 2007; 195(4):307–317. [PubMed: 17435480]
- O'Farrell TJ, Fals-Stewart W. Behavioral couples therapy for alcoholism and drug abuse. *Journal of Substance Abuse Treatment*. 2000; 18:51–54. [PubMed: 10636606]
- O'Farrell TJ, Hooley J, Fals-Stewart W, Cutter HSG. Expressed emotion and relapse in alcoholic patients. *Journal of Consulting and Clinical Psychology*. 1998; 66:744–752. [PubMed: 9803692]
- Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Robins LN, Helzer JE, Croughan J, Ratcliff KS. National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity. *Archives of General Psychiatry*. 1981; 38:381–389. [PubMed: 6260053]
- Rotunda RJ, Doman K. Partner enabling of substance use disorders: Critical review and future directions. *The American Journal of Family Therapy*. 2001; 29:257–270.
- Scazufca M, Kuipers E. Links between expressed emotion and burden of care in relatives of patients with schizophrenia. *British Journal of Psychiatry*. 1996; 168:580–587. [PubMed: 8733796]
- Scazufca M, Kuipers E. Stability of expressed emotion in relatives of those with schizophrenia and its relationship with burden of care and perception of patients' social functioning. *Psychological Medicine*. 1998; 28:453–461. [PubMed: 9572102]
- Schulz R, Beach SR. Caregiving as a risk factor for mortality: The caregiver health effects study. *The Journal of the American Medical Association*. 1999; 282:2215–2219.
- Schulz R, Williamson GM. A 2-year longitudinal study of depression among Alzheimer's caregivers. *Psychology and Aging*. 1991; 6:569–578. [PubMed: 1777145]
- Schulz, R.; Williamson, GM.; Morycz, RK.; Biegel, DE. A longitudinal study of the costs and benefits of providing care to Alzheimer's patients. In: Spacapan, S.; Oskamp, S., editors. *Helping and being helped in the real world: The Claremont symposium on applied social psychology*. Beverly Hills, CA: Sage Publications; 1992. p. 153-181.
- Simpson DD, Joe GW. Motivation as a predictor of early dropout from drug abuse treatment. *Psychotherapy*. 1993; 30(2):357–368.
- Song L, Biegel DE, Milligan SE. Predictors of depressive symptomatology among lower social class caregivers of persons with chronic mental illness. *Community Mental Health Journal*. 1997; 33:269–286. [PubMed: 9250425]
- Stafford LL. Is codependency a meaningful concept? *Issues in Mental Health Nursing*. 2001; 22:273–286. [PubMed: 11885212]
- Stanton, MD. The role of family and significant others in the engagement and retention of drug-dependent individuals. NIDA research monograph, number 165: Beyond the therapeutic alliance:

Keeping the drug-dependent individual in treatment. 1997. Retrieved January 27, 2008, from http://drugabuse.gov/pdf/monographs/Monograph165/157-180_Stanton.pdf

Strauss SM, Falkin GP. Social support systems of women offenders who use drugs: A focus on the mother-daughter relationship. *American Journal of Drug and Alcohol Abuse*. 2001; 27(1):65–89. [PubMed: 11373037]

Tarrier N, Sommerfield C, Pilgrim H. Relatives' expressed emotion (EE) and PTSD treatment outcome. *Psychological Medicine*. 1999; 29:801–811. [PubMed: 10473307]

Tarrier N, Sommerfield C, Pilgrim H. Relatives' expressed emotion (EE) and PTSD treatment outcome. *Psychological Medicine*. 1999; 29:801–811. [PubMed: 10473307]

Tessler, R.; Gamache, G. Toolkit for evaluating family experiences with severe mental illness. Cambridge, MA: The Evaluation Center at HSRI; 1995.

University of Akron, Institute for Health and Social Policy. The Clinical Intake Assessment Interview-Cleveland (CIAI-C). Akron, OH: University of Akron; 2001.

Figure 1.
Conceptual Framework: Mediating Effects of Family Member Coping

Figure 2.
Conceptual Framework: Moderating Effects of Family Member Coping

Table 1

Family Member Stressors – Mean Score, Range, Scale Reliability (N =82)

Stressor	Mean	Actual Range/SD	Theoretical Range	Cronbach's α
Client Behavioral Problems	89.76	2–194	(0– 232)	.97
Client Treatment Motivation				
- Problem Recognition	36.68	10–25 (7.8)	(0–36)	.88
- Treatment Readiness	33.91	18–40 (4.66)	(0– 32)	.74
- Desire for Help	31.62	13–35 (4.41)	(0–28)	.83
Client Substance Use				
- Frequency of Client Drug/Alcohol Use	2.05	(0–4 - never to constantly/almost constantly)		
- Extent of Client Drug/Alcohol Use	1.68	(0–3 - not at all to severe)		
Client Institutional Status				
- Client ever hospitalized drug or alcohol problem	26% yes			
emotional problem	16% yes			
- Client arrested past 6 months	20% yes			
- Client jail/prison past 6 months	19% yes			
Dual Diagnosis				
- Client Current Dual Disorder	56% yes			

Table 2
 Hierarchical Regression – Family Member Stressors as Predictors of Family Member Maladaptive Coping (N=81)

Predictor Variables	Block					
	B	SEB	β	R ²	ΔR^2	F (df)
Step 1				.062	.062 *	5.238 (1, 79)
- Relationship Significant Other	3.080	1.346	.249 *			
Step 2				.202	.140 *	2.598 (5, 74)
- Extent of Client's Substance Use	.495	.559	.109			
- Client's Desire for Help	.076	.149	.058			
- Client Behavioral Problems	.027	.014	.220			
- Client Arrested	1.695	1.758	.117			
- Client Dual Disorder	.660	1.234	.057			

*
 $p < .05$,

**
 $p < .01$,

 $p < .001$

Hierarchical Regression – Family Member Maladaptive Coping as a Mediator between Client Stressors and Family Member Displeasure (N=81)

Table 3

Predictor Variables	Block					
	B	SEB	β	R ²	ΔR^2	F (df)
Step 1				.052	.052*	4.350 (1, 79)
- Relationship Significant Other	-3.205	1.174	-.265*			
Step 2				.380	.328***	7.843 (5, 74)
- Client Behavioral Problems	.043	.012	.359**			
- Client's Desire for Help	.201	.125	.157			
- Extent of Client's Substance Use	.549	.472	.124			
- Client Dual Disorder	-.575	1.039	-.050			
- Client Arrested	.182	1.486	.013			
Step 3				.420	.039*	4.930 (1, 73)
- Family Member Maladaptive Coping	.217	.098	.222*			

* p < .05,

** p < .01,

*** p < .001

Table 4
Hierarchical Regression – Family Member Maladaptive Coping as a Mediator between Client Stressors and Family Member Frequency of Impacts (N=81)

Predictor Variables	Block					
	B	SEB	β	R ²	Δ R ²	F (df)
Step 1				.007	.007	.570 (1, 79)
- Relationship Significant Other	-.510	.808	-.061			
Step 2				.272	.265***	5.384 (5, 74)
- Client Behavioral Problems	.019	.008	.224*			
- Client's Desire for Help	-.028	.086	-.031			
- Extent of Client's Substance Use	.590	.325	.192			
- Client Dual Disorder	-.147	.714	-.019			
- Client Arrested	.558	1.022	.057			
Step 3				.430	.158***	20.291 (1, 73)
- Family Member Maladaptive Coping	.302	.067	.446***			

* p < .05,
 ** p < .01,
 *** p < .001

Table 5

Hierarchical Regression – Family Member Maladaptive Coping as a Moderator between Client Stressors and Family Member Frequency of Impacts (N=81)

Predictor Variables	Block				
	B	SEB	β	R ²	ΔR^2 F (df)
Step 1				.007	.007 (1, 79)
- Relationship Significant Other	-.768	.769	-.092		
Step 2				.272	.265*** (5, 74)
- Client Behavioral Problems	.023	.008	.274**		
- Client's Desire for Help	-.045	.092	-.050		
- Extent of Client's Substance Use	.656	.316	.213*		
- Client Arrested	-.951	1.126	-.097		
- Client Dual Disorder	-.010	.683	-.001		
Step 3				.430	.158*** (1, 73)
- Family Member Maladaptive Coping	.333	.087	.490***		
Step 4				.098*	2.841 (5, 68)
- Client Behavioral Problems $\times$ FM Maladaptive Coping	-.001	.001	-.091		
- Client's Desire for Help $\times$ FM Maladaptive Coping	.003	.014	.023		
- Extent of Client's Substance Use $\times$ FM Maladaptive Coping	.106	.054	.193		
- Client Arrested $\times$ FM Maladaptive Coping	.372	.204	.223		
- Client Dual Disorder $\times$ FM Maladaptive Coping	-.151	.118	-.149		

* p < .05,

** p < .01,

*** p < .001