STRESS, COPING, AND WELL-BEING AMONG FAMILY MEMBERS

OF WOMEN WITH SUBSTANCE USE OR CO-OCCURRING DISORDERS

by

BARBARA COLIN MOORE

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Dissertation Adviser: Dr. David Biegel

Mandel School of Applied Social Sciences

CASE WESTERN RESERVE UNIVERSITY

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SCHOOL OF GRADUATE STUDIES

We hereby approve the dissertation of

Barbara C. Moore

_____

candidate for the Ph.D. degree *.

David E. Biegel

(signed)_____

(chair of the committee)

Kathleen J. Farkas

_____

Claudia J. Coulton

_____

Christina Delos Reyes

_____

_____

_____

July 13, 2006

(date) _____

*We also certify that written approval has been obtained for any proprietary material contained therein.

Dedication

For my own family, with love and gratitude

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Stress, Coping, and Well-Being among
Family Members of Women with Substance Use
Or Co-occurring Disorders

Abstract

by

BARBARA COLIN MOORE

The effects of illness-related stressors on family members of women with

substance use disorders or co-occurring mental illness and substance use disorders were

examined, and the mediating or moderating role of family member adaptive or

maladaptive coping strategies was assessed. 82 women in inpatient or outpatient

treatment for substance use disorders in a Midwestern community were interviewed. Of

these, 46 (56.1%) met diagnostic criteria for one or more additional psychiatric disorders:

major depression, dysthymia, posttraumatic stress disorder, mania, hypomania, or

generalized anxiety disorder. The women were predominantly African-American and of

lower socioeconomic status. The women in treatment nominated the most supportive

family member or a significant other for participation in the study. 82 family members,

one for each woman in treatment, were also interviewed. Findings were that illness-

related client behavioral problems and extent of client drug or alcohol use were

significantly related to greater family member burden. At the bivariate level, greater

client behavioral problems were also related to higher levels of family member

depressive symptomatology. Family member maladaptive coping was found to

completely mediate the relationship between client behavioral problems and the Stigma

dimension of family member burden. Family member maladaptive coping was also found to partially mediate the relationships between client behavioral problems and family member burden (frequency of Impact subscale) and between extent of client drug or alcohol use and family member burden (frequency of Impact). Family member maladaptive coping functioned as both a moderator and a mediator in the relationship between extent of client drug or alcohol use and family member Impact. Adaptive coping was found to be a partial mediator between client behavioral problems and family member Worry, but increases in adaptive coping were associated with greater family member Worry, rather than less Worry as hypothesized. Possible links between specific family member behaviors and outcomes for both family members and individuals in treatment are examined. Implications for research and practice are also discussed.

Chapter 1

Scope of the Problem

Mental illness and substance use disorders are enormous problems that impact all social strata. Data from the National Comorbidity Survey (NCS) show that in the United States, half of the general population have suffered from at least one diagnosable mental illness or substance use disorder during their lifetimes, and 30% have had at least one disorder during the past 12 months. Major depression, alcohol dependence, and phobias were among the most frequently reported disorders, and women have higher rates of affective and anxiety disorders than men. One-sixth of NCS respondents had a history of three or more mental disorders. About two-fifths to two-thirds (41.0% to 65.5%) of respondents who experienced an addictive disorder also have had at least one mental disorder in their lifetimes, and 50.9% of respondents with one or more mental disorders also have a history of at least one addictive disorder. Less than 40% of respondents with lifetime disorders had ever received professional treatment, and less than 20% with recent disorders had received treatment in the past 12 months. Even among the more severely affected subgroup of persons with a lifetime history of three or more disorders, less than half had ever received specialty sector mental health treatment (Kessler et al., 1994; Kessler et al., 1996).

The likelihood of receiving any family treatment is very small. Only 10% of all clients with severe mental illness receive family psychoeducation or other psychosocial services, even when such interventions have strong empirical support (Lehman & Steinwachs, 1998). Untreated substance use disorders are a major factor in poor outcomes for the dually diagnosed population (Drake & Mueser, 2000). Dually diagnosed clients use

more treatment and service resources than persons with a single diagnosis. They have the highest rates of criminal justice system involvement and admission to public psychiatric hospitals (Johnson, 2000). Mueser, Drake, and Miles (1997) outline problems associated with dual disorders as follows:

"Common negative consequences include increased vulnerability to relapses and rehospitalizations, greater depression and suicidality, violence, housing instability and homelessness, noncompliance with medications and other treatments, increased vulnerability to human immunodeficiency virus (HIV) infection, increased family burden, and higher service utilization and costs." (pp. 86-87)

Substance-abusing women as a population differ in several important respects from their male counterparts. Women drug abusers tend to use more legal drugs, such as tranquilizers and other prescription medicines. Women are more vulnerable to physical illnesses associated with drug use. Childcare responsibilities are more often cited by women as a barrier to completion of treatment. Up to 75% of women who abuse substances have prior histories of sexual or physical abuse, and trauma-related flashbacks can sometimes trigger relapse. In one twin study, women exposed to childhood sexual abuse had higher risk for all psychiatric disorders than the unexposed twins. In the exposed group, bulimia and drug and alcohol dependence were the most likely diagnoses (Nelson-Zlupko, Kauffman, & Dore, 1995; Kendler et al., 2000). In the general population, women are twice as likely to suffer from depression compared to men (Kessler, 2003).

In a study of low-income mothers in Massachusetts, Bassuk, Buckner, Perloff, and Bassuk (1998) found that about two-thirds of respondents had had at least one

diagnosable disorder in their lifetimes. They had higher rates of posttraumatic stress disorder (PTSD), major depression, and substance use disorders than the general population of U.S. women as reported in the National Comorbidity Survey. More than a third (35%) of respondents had PTSD, which is three times the rate of the U.S. female population. The low income women also suffered major depression at twice the rate of women in the National Comorbidity Survey. The low income women as a group did not have higher rates of psychotic disorders. However, lifetime prevalence of alcohol-related disorders was twice as high and drug-related disorders three times as high among the low income respondents than among women generally. Nearly half (47%) of the low-income mothers had had two or more disorders during their lifetimes. Of the women with more than one lifetime disorder, 89% had a substance use disorder, 85% had PTSD, 73% had depression, and 71% had an anxiety disorder.

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 from 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. About half (40% to 65%) of adults with serious mental illness live with their families, and 75% of patients with schizophrenia have contact with family members (Solomon & Draine, 1995; Lehman & Steinwachs, 1998). Clark (2001) points out that families of persons with co-occurring disorders frequently offer financial assistance as well as help with tasks of daily living. Clark found an association between family economic support and substance abuse

recovery among patients in treatment for dual disorders. Also, greater family caregiver hours were associated with a reduction of substance use. Holding a central place in the client's life puts family members in a good position to support and encourage their relative's recovery (Mueser & Fox, 2002; Clark, 2001; Clark, 1996). When treatment fails, families can become "providers of last resort" (Clark, 2001, p. 94).

Inclusion of families in treatment improves outcomes in both psychiatric and substance use disorders. Family interventions have been found to promote psychiatric stability, increase treatment adherence, and reduce substance use and relapse (McFarlane et al., 1995; Fals-Stewart & O'Farrell, 2003; O'Farrell & Fals-Stewart, 2000; Hogarty et al., 1991). Family interventions also help to engage treatment resistant individuals (Meyers, Miller, Smith, & Tonigan, 2002) and improve well being of both clients and family members (Fals-Stewart et al., 2000). Such studies underscore the considerable influence that family members have on the course of their relative's illness. Research on women substance abusers also points to the impact of the social environment on clients' illness and recovery. Higher lifetime exposure to interpersonal abuse is a predictor of greater current distress for women with co-occurring disorders (Savage & Russell, 2005), and substance-abusing women report that behavior of family members may support or hinder recovery goals (Falkin & Strauss, 2003).

Family influence goes in both directions; not only do family members have an effect on their relative's illness, but the presence of the illness also has an impact on family members. Apart from treatment implications for patients with co-occurring disorders, family member well-being is worthy of consideration for its own sake. Research on family interventions often includes family member well-being as an

outcome variable in addition to treatment outcomes for clients with mental illness or substance use disorders. Evidence from both the mental health and substance abuse literature suggests that a relative's illness creates physical, psychological, and financial stress for family members. Greater family burden is associated with more severe behavioral problems (Biegel & Schulz, 1999; Song, Biegel, & Milligan, 1997; O'Farrell & Fals-Stewart, 2000; Clark, 2001). Because the use of drugs or alcohol adversely affects psychiatric stability and exacerbates problematic behavior (Drake & Mueser, 2000), families of persons with dual disorders are at risk for increased family burden. Following deinstitutionalization and the return of clients with mental illness to community settings, families have provided much needed care to their ill relatives. These additional caregiving responsibilities are also associated with increased family burden and stress (Biegel & Schulz, 1999). If the family system breaks down as a result of this stress, family members are not available to participate in treatment and clients can be left socially isolated and at greater risk for housing instability and homelessness (Mueser & Glynn, 1999).

<div align="center">Role of Families</div>

Family influence on the course of the substance abuse or mental illness can be either positive or negative. Family members may react to the stress caused by these illnesses with behaviors, such as enabling or criticism, that have the unintended consequence of exacerbating the relative's symptoms (Rotunda, West, & O'Farrell, 2004). The relationship between family member high expressed emotion (criticism, hostility, and overinvolvement) and relapse has been well established in the research on schizophrenia (Bebbington & Kuipers, 1994) and has also been noted in mood disorders

(Vaughn & Leff, 1976; Hooley, Orley, & Teasdale, 1986; Miklowitz, Goldstein, Nuechterlein, Snyder, & Mintz, 1988; Miklowitz et al., 2000), posttraumatic stress disorder (Tarrier, Sommerfield, & Pilgrim, 1999), alcohol dependence (O'Farrell, Hooley, Fals-Stewart, and Cutter, 1998), and eating disorders (Butzlaff & Hooley, 1998).

Enabling behavior by family members has also been a target of clinically-derived interventions with empirical support (e.g., Miller, Meyers, & Tonigan, 1999; Myers & Smith, 1997). In the Community Reinforcement and Family Training (CRAFT) intervention, enabling is understood as family behavior that reinforces continued drinking. Enabling behavior has also been investigated as an isolated construct. Rotunda and Doman (2001) have reviewed the literature on partner enabling and have noted that some investigators have found a relationship between higher family member enabling and relatively poor client treatment outcomes. However, both family behavior and poor treatment outcomes may be related to a generally worsening family situation. Enabling behaviors may be an indicator of 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.

Much of the family intervention literature focuses on decreasing the family's negative responses and increasing positive ones to reinforce the ill person's recovery efforts. Negative family behaviors might include hostile reactions and high expressed emotion, empty threats, substance abuse by a family member (O'Farrell, Hooley, Fals-Stewart, & Cutter, 1998; Meyers & Smith, 1997; Galanter, 1993), or giving pocket

money to a dually diagnosed relative that is ultimately spent on illicit drugs or alcohol (Gearon, Bellack, Rachbeisel, & Dixon, 2001). Effective family interventions increase family member adaptive behaviors such as positive communication, active problem solving, reinforcing abstinent behavior, and seeking social support (Miller, Meyers, & Tonigan, 1999; McFarlane, Dixon, Lukens, & Lucksted, 2003; O'Farrell & Fals-Stewart, 2000).

Family intervention studies that measure both patient and family member outcomes often find that both family member well-being and patient outcomes improve as a result of intervention. "Research conducted over the last decade ... has demonstrated that meeting the needs of family members also dramatically improves patient outcomes, while improving family well-being" (McFarlane et al., 2003, p. 224). However, gains in family member well-being do not necessarily depend on improvements in patient outcome. In an intervention targeting treatment engagement of persons with alcohol problems, Miller, Meyers, and Tonigan (1999) found family member well-being improved on measures of depression, state anger, family cohesion, family conflict, and relationship happiness. They concluded that family members improved "whether or not the drinker ultimately entered treatment" (p. 694).

Few investigators have studied the specific characteristics of families of persons with dual disorders, consequently very little is known about this population. However, the few findings that have emerged are consistent with the general picture of family response to illness-related stressors outlined in the literature on each disorder. Clients with dual disorders are less satisfied with their family relationships than clients with severe mental illness alone. Several researchers have noted that high levels of tension and

conflict occur in families of dually disordered clients. Further, there is a risk of client violence toward family members (Mueser & Fox, 2002; Dixon, McNary, & Lehman, 1995; Steadman et al., 1998).

Investigators conducted focus groups with mental health professionals, clients, and family members to identify the needs of families coping with dual disorders. Family members wanted more information about both disorders, their interactions, and their treatment. Participants also said they needed to decrease stress, find more social support, collaborate more effectively with the treatment team, and get help with solving specific problems. Clinicians admitted that they were not sure how to help families with many of the problems presented (Mueser & Fox, 2002).

A large literature exists examining the relationships among stress, coping, and well-being of family members caring for a relative with a chronic illness. Most often, this line of research has focused on family caregivers of persons with Alzheimer's disease. Relevant findings from the literature on older adults include the relationship between caregiver stress and increased service use. Bookwala et al. (2004) found that increases in caregiver depressive symptoms are related to increases in use of long-term care for a disabled spouse. Aneshensel, Pearlin, and Schooler (1993) found that caregiver stress predicted institutionalization of the care recipient and that institutional placement increases the mortality odds for care recipients. Similarly, in an analysis of data from 4,761 caregivers of persons with dementia, Gaugler, Kane, Kane, Clay, and Newcomer (2005) found that caregivers were more likely to institutionalize care recipients with greater behavior problems.

More recently, models of stress and coping have been extended to include family caregivers of persons with mental illness. Examining family member responses to co-occurring disorders in light of what has been learned about other populations presents an opportunity to understand more about commonalities and differences in family member reactions across diagnoses. One consistent finding across diagnostic groupings has been that more severe client behavioral problems are associated with greater levels of family burden (Biegel & Schulz, 1999; Biegel, Sales, & Schulz, 1991; Song, Biegel, & Milligan, 1997).

According to the model developed by Lazarus and Folkman (1984), coping efforts can have a major impact on the outcome of stressful events. Coping strategies may be roughly divided into two categories: problem-focused and emotion-focused coping. Avoidance coping is often included in the latter grouping. Problem-focused coping is seen as potentially beneficial because it has been shown in several studies to be negatively related to symptoms of mental disorders. Avoidance coping has shown a more consistent positive relationship to psychiatric symptomatology and physical health problems (Vollrath, Alnaes, & Torgersen, 1996; Carver, Scheier, & Weintraub, 1989).

Few investigators have looked directly at the impact of familial factors in co-occurring disorders. An investigation of family member coping strategies sheds light on whether or not relationships among stress, coping, and well-being found in other populations also exist among family members of women with substance use or co-occurring disorders. If adaptive coping does reduce stress resulting from a relative's illness and improve family member well-being, new interventions targeting family members could incorporate this information. Furthermore, as adaptive coping appears to

be an element of existing effective family interventions for mental illness and substance use disorders, elucidation of the specifics of adaptive coping would add to knowledge in this area. Elaboration and validation of the stress-coping model could provide a richer explanatory framework and even predict outcomes for family members and their relatives with substance use or co-occurring disorders. Finally, this research addresses gaps in existing knowledge by identifying family coping strategies that are used both in and out of formal treatment contexts and that may be associated with better outcomes for patients and family members. To this end, this dissertation focuses on the following questions:

1)   What is the impact of illness-related stressors (client behavioral problems, client treatment motivation, client substance use, client institutional status, and client dual disorder) on well-being (burden, depressive symptoms, and physical health) of family members of persons with a substance use disorder or co-occurring substance use and mental disorders?

2)   Does greater family member use of adaptive coping mediate or moderate the impact of these stressors on family member well-being?

Chapter 2: Conceptual Framework and Literature Review

Stress, Coping, and Well-Being (Theoretical Perspectives)

The concept of stress is an old one. Lazarus (1993) notes that stress, in the general sense of hardship or adversity, was in use in the 14th century. The work of the prominent 17th century physicist and biologist, Robert Hooke, brought the concept of stress into a technical and scientific context. Hooke's analysis of the load-bearing capacities of bridges and other man-made structures greatly influenced models of stress in early 20th century psychology and sociology. The meaning of stress from Hooke's physics that persists in current usage is "the idea of stress as an external load or demand on a biological, social, or psychological system" (Lazarus, 1993, p. 2). Charles Darwin (1859) wrote about stress as an organism's struggle for survival in the environment, noting that such factors as available food, climate, and the presence of competing organisms influence the survival outcome.

Walter Cannon (1932) wrote about the physiology of emotion and stress, which he conceptualized as a disturbance in homeostasis. By 1936, Hans Selye (1956) was describing stress as a set of physiological defenses against psychological threats or any other form of noxious stimulus. He called this universal set of reactions the General Adaptation Syndrome (GAS). Selye presented his ideas on stress at a meeting of the American Psychological Association in 1950, which stimulated much interest among psychologists in the similarities between physiological and psychological stress. Psychologists noted that the GAS appeared to be the physical analogue of the coping concept in psychology. Selye's work has given strong support to the notion that social

and psychological factors play an important role in health and illness (Lazarus, 1993; Lazarus & Folkman, 1984).

An interest in battle fatigue or "shell shock," as it was termed in World War I, gave further impetus to stress research. Battle-related psychological breakdown was initially thought to be the result of brain damage caused by exposure to the sound of weapons explosions. After World War II, the military wanted information on how to identify stress resistant individuals and how to train personnel to be stress resistant. In this period, researchers focused on the questions of how to explain and predict the effects of stress. It also became apparent that common experiences of civilians, such as illness or marital stress, can produce symptoms similar to those exhibited by combat veterans. This realization led to increased interest in stress as a cause of emotional pain and dysfunction. Early models of stress, influenced by the behaviorism and positivism predominant in the academic psychology of the time, were simplistic and inadequate. In the 1950's researchers discovered that the response to stress was variable. Given the same environmental conditions, some persons experienced a great deal of stress, while others were much less bothered. Similarly, under conditions of stress the performance of some persons, but not others, was markedly impaired (Lazarus, 1993).

In the field of psychology, psychoanalytic theorists believed that psychopathology was produced by anxiety, an idea that overlaps with the concept of stress. Later, the cognitive behavioral therapy movement developed interventions targeting thoughts, feelings, and actions as central factors in psychopathology or successful coping (Lazarus & Folkman, 1984). Albert Bandura (1989) saw self-efficacy, or the belief that one can exercise control over events, as an essential element of effective coping. He wrote:

People's self-efficacy beliefs determine their level of motivation, as reflected in how much effort they will exert in an endeavor and how long they will persevere in the face of obstacles. The stronger the belief in their capabilities, the greater and more persistent are their efforts. (Bandura, 1989, p. 1176)

This dissertation is based on Lazarus and Folkman's (1984) stress and coping theory, which has been one of the most influential models in stress research. In this model, stress occurs as a function of the relationship between the person and the environment. When a person appraises environmental demands as dangerous to his or her well-being and perceives that available resources are insufficient to manage the threat, psychological stress is experienced. A simplified model derived from stress and coping theory as applied to family members of women with substance use disorder or co-occurring substance abuse and mental illness is shown in Figure 1.

Figure 1: The Role of Family Member Coping as a Mediator or Moderator between Stressors Associated with a Relative's Substance Use or Co-Occurring Disorders and Family Member Well-Being
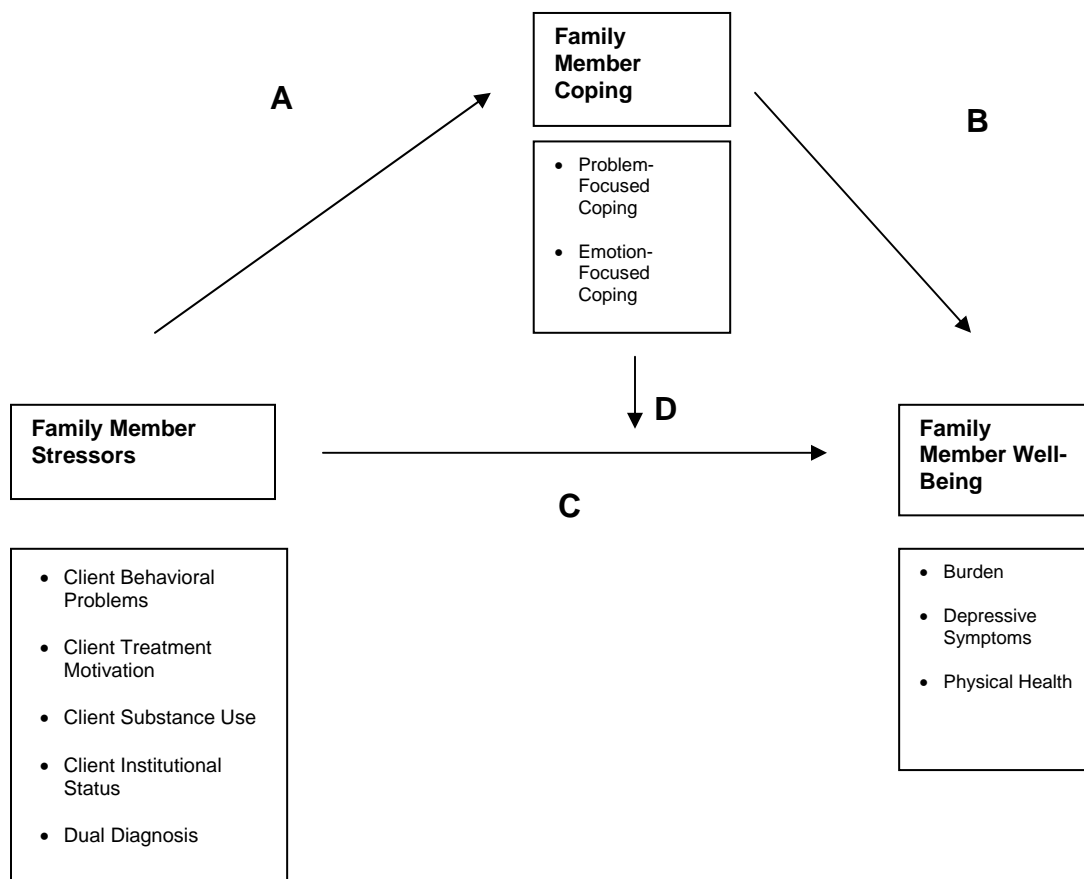
Appraisal and Coping as Mediators of Stress

Lazarus and Folkman (1984) discuss their concepts of appraisal and coping as mediators of stress. They note that "while stress is an inevitable aspect of the human condition, it is coping that makes the big difference in adaptational outcome" (p. 6). They describe the evaluative process as having two components, primary and secondary

appraisal. In primary appraisal, the person evaluates environmental stimuli either as safe or as threatening. If the stimuli are judged to be threatening, secondary appraisal seeks to determine whether or not they can be changed. Primary stress appraisals fall into three categories: harm/loss, threat, and challenge. In harm/loss, some injury has already occurred. Losses involving valued persons or central life commitments are the most damaging. Threat appraisals are concerned with anticipated harms or losses. Like threat appraisals, a challenge appraisal recognizes a potential loss, but is focused on the potential for growth. Challenge is characterized by the presence of positive emotions such as excitement and eagerness. Threat and challenge appraisals can often appear simultaneously. Secondary appraisals evaluate available coping options and ask whether or not any of the available options are likely to accomplish the desired result. The individual also considers whether or not he or she is likely to be successful in applying a particular strategy.

Lazarus and Folkman (1984) define coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p. 141). They make a distinction between coping that aims to manage or alter the problem that is causing the distress and coping that seeks to regulate emotional responses to the problem. These investigators 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.

Various researchers have created taxonomies of coping. In addition to Folkman and Lazarus' (1980) categories of problem-focused or emotion-focused coping, other classification schemes have divided coping into avoidance and approach behaviors (Suls & Fletcher, 1985) or task-oriented, emotion oriented, and avoidance oriented coping (Endler & Parker, 1994). The various labels used to describe coping strategies appear to overlap. Active coping directs effort toward the stressor and includes problem-focused and task-oriented strategies, whereas emotion-focused, avoidant, or disengaged strategies direct energy and attention away from the stressor (Suls & Fletcher, 1985).

Well-being

The concept of well-being, as understood by Lazarus and Folkman (1984), has to do with positive and negative emotion as a stressful encounter unfolds and also with impacts of stress on physical health. "Coping becomes extremely important as the mechanisms through which a positive sense of well-being can be sustained in the face of adverse conditions" (p. 196). Over the long run, positive morale "must depend on a consistent tendency to appraise encounters as challenges, or to appraise harms and threats as manageable and even productive of growth, and to tolerate negative experiences" (p. 198). The concept of somatic health has also been a theme of research on coping and well-being.

A large body of research exists on the relationship between coping and well-being. The two dimensions of coping are related theoretically to more or less successful coping strategies. 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 (Carver, Scheier, & Weintraub, 1989; Carver,

1997). Some evidence suggests that greater use of emotion-focused or avoidant strategies, such as denial or wishful thinking, are associated with higher levels of physical and psychological symptomatology (Commerford, Gular, Orr, Reznikof, & O'Dowd, 1994; Dunkel-Schetter, Feinstein, Taylor, & Falke, 1992; Gass & Chang, 1989; Kendler, Kessler, Health, Neale, & Eaves, 1991). Problem-focused coping, on the other hand, has been found to be associated with lower emotional distress (Dunkel-Schetter et al., 1992; Folkman & Lazarus, 1985) and with better immune system functioning (Stowell, Kiecott-Glaser, & Glaser, 2001). Appraisal has also been found to be related to physical and mental well-being. A sense of mastery or control is associated with decreased stress and better physical health (Folkman, Lazarus, Gruen, & DeLongis, 1986).

Earlier Conceptual Models of Substance Abuse, Mental Illness, and Family Members

Researchers investigating families of persons with substance use disorders or mental illness have pointed out the limitations of older conceptual models and the related reasons for adopting a stress-coping theoretical perspective. Application of a stress-coping model to families of persons with substance use disorders or mental illness has the advantage of offering a non-blaming framework for understanding family member coping efforts. Effective family coping has implications not only for family member well being, but also for the ill relatives' treatment outcomes. Collaboration between family members and providers offering treatment services for substance abuse or mental disorders has been hindered by negative conceptualizations of the role of the family in these illnesses. In some cases, these conceptualizations laid the blame for the existence of an illness at the family's door. In other cases, professionals adopted models that assumed family members were sick and that family efforts with regard to an ill relative were destructive

or dysfunctional. Lefley (1996) reviewed the literature on "schizophrenic families," and found that there is no empirical support for the notion of family pathogenesis of schizophrenia. Psychoanalytic theory suggested that the mother contributed to arrested development of her infant and to the later development of psychosis. Broad generalizations about these families, such as the idea that such families are closed or that they are characterized by pathological attachments, are also not supported by research. Similarly, findings on childhood abuse do not tend to support a conclusion that childhood trauma causes schizophrenia or bipolar disorder. However, there is some evidence that some dissociative disorders are related to severe childhood abuse. More recent work with families stresses that schizophrenia is a brain disorder, but that families can have a positive or negative influence on the course and outcome of the illness. Consequently, the stress-coping model has been used in more recent research investigating family member responses to severe mental illness to avoid the negative connotations of earlier theoretical models (McFarlane et al., 2003).

Similarly, in the field of substance abuse, researchers have investigated the ways in which chemical dependency affects the entire family. The influence exerted by family members on their relatives in treatment and the deleterious effects of substance use on relationships and family functioning are well established in the research literature (Fals-Stewart & O'Farrell, 2003; O'Farrell & Fals-Stewart, 2000, Meyers, Miller, Smith, & Tonigan, 2002; Sheridan, 1995). However, the popular use of the term "codependency" to explain family member behavior carries some negative implications. While some family members have been relieved to hear that they were not the cause of addictive behavior and that they were also ill, others have felt that the term pathologizes caring

behavior. The codependency model extends the disease model of chemical dependency to family members. Enabling, defined as a wide range of family member actions that may reinforce continued alcohol or drug use, was usually seen as part of the sick, codependent behavior. As in the case of severe mental illness, substance abuse researchers currently studying the enabling construct have chosen to avoid the use of negative labels and to focus on enabling behaviors as part of family members' coping efforts within a stress and coping theoretical model. This facilitates operational definition and measurement of the behaviors and minimizes ideological debates. Some clinicians and researchers are taking the view that enabling behaviors are normal reactions to stress engendered by the presence of the illness in a relative (Rotunda & Doman, 2001). The stress and coping model has been adapted for this dissertation to avoid making a priori judgments about the health or dysfunction of family member behavior and to focus attention on specific family member behavioral responses.

Literature Review

Since the late 1970's and 1980's, a large quantity of empirical research has focused on stress and coping. Moos (1976), Pearlin and Schooler (1978), and Folkman and Lazarus (1980) were pioneers of the field. Early work on stress and coping sought to understand very general processes of psychological adaptation. Broad-based community samples were chosen to study coping in common situations. For example, Folkman and Lazarus (1980, 1985) studied a community sample of middle-aged persons coping with the stress of daily living and students coping with a college exam. Although elegant theories arose from this work (see Lazarus & Folkman 1984), stress-coping research has been a disappointment to many because it has not yet produced the hoped-for breakthrough interventions for managing stress (Somerfield & McCrae, 2000; Coyne & Racioppo, 2000).

More recently, however, stress-coping research has focused on specific stressful situations and clinical populations, which has brought the field into closer communication with clinical realities. More interventions targeting coping have been developed, and the theoretical literature on coping is beginning to converge with research arising from clinical contexts (Somerfield & McCrae, 2000; Lazarus, 2000). Folkman and Greer (2000) offer an example from two lines of research, one based in clinical practice and another derived from a theoretical, behavioral science perspective. Both lines of research investigate coping with serious illnesses – cancers in the first case and HIV/AIDS in the second – and arrive at similar conclusions about the importance of coping processes in the maintenance of psychological well-being during these illnesses. The authors point to several coping variables related to patients' psychological well-being. These include the

patient's ability to appraise the illness as a challenge with the possibility of a positive outcome and the belief that the patient's strategic efforts can help to bring about the desired outcome. Coyne and Racioppo (2000) point to well-designed, randomized, controlled trials in chronic pain research. Such interventions teach coping skills that are highly specific to a particular clinical situation, and the effect of the coping skills acquired can be experimentally evaluated in context.

A well-developed coping literature exists on family caregivers of persons with chronic illness, including mental illness and Alzheimer's disease (Biegel, Sales, & Schulz, 1991; Lefley, 1996). Much of this work has focused on caregivers of elderly persons with dementia and on family members of people with schizophrenia. Relatively little work has been completed from a stress-coping perspective on relatives of persons with substance use disorders, mental illnesses other than schizophrenia, or co-occurring disorders. However, the earlier work on family member coping with schizophrenia or dementia is relevant to this investigation because many of the challenges encountered by family members are similar. For example, problematic behavior, mood swings, and impaired cognition seen among persons with severe and persistent mental illness and dementia are also common in persons with substance use disorders and less severe psychiatric diagnoses. As in other chronic illnesses, families of persons with substance abuse or co-occurring disorders will be called upon to provide unanticipated, non-symmetrical support to their relative "beyond the bounds of normal or usual care" (Biegel, in press, p. 3). In general, a consistent finding across diverse types of chronic illness is that more severe illnesses are associated with greater family member burden (Biegel, Sales, & Schulz, 1991). There is also a strong relationship between problem

behaviors of the ill relative and family member burden. Behaviors that are known to be particularly troublesome to family members include severe functional impairments, wandering, catastrophic emotional reactions, dangerous behaviors, agitation, and disruptiveness at night (Pearlin, Mullan, Semple, & Skaff, 1990; Biegel (in press)).

Stress and Family Member Well-Being

Schulz, O'Brien, Bookwala, and Fleissner (1995) reviewed the literature on the psychiatric and physical effects of dementia caregiving and found that increases in patient problem behavior are associated with more caregiver depressive symptoms and clinical depression, more anxiety, and more health problems. Gonzalez-Salvador, Arango, Lyketsos, and Barba (1999) also found that caregivers of Alzheimer's patients experienced greater stress and psychological morbidity than controls. Patient behavioral symptoms and functional impairment were related to caregiver stress. More recently, Schulz and Martire (2004) have summarized research on family caregiving of persons with dementia. These reviewers report that family caregivers of persons with dementia experience more stress than family caregivers of persons with physical impairment alone. This is complicated by the fact that nearly a quarter of persons suffering from dementia have comorbid depression. They note that "There is strong consensus that caring for an elderly individual with disability is burdensome and stressful to many family members and contributes to psychiatric morbidity in the form of higher prevalence and incidence of depressive and anxiety disorders" (p. 242). The reviewers also found evidence that caregivers may be at greater risk for health problems because of less attention to preventative health behaviors and decreased immune function. Pinquart and Sorensen (2003), in a review and meta-analysis integrating findings from 228 studies, examined the

associations among caregiver stressors, burden, and depressed mood. More than 40% of the included studies focused on caregiving of persons with dementia. Findings were that greater care recipients' behavior problems were the strongest predictors of caregiver burden and depressed mood. Schulz and Martire (2004) discuss the effect of patient impairment and problem behaviors on family caregivers and report on findings from recent randomized controlled-trial intervention research. They observe that multilevel interventions targeting both patient and caregiver produce significant improvements in "caregiver burden, depression, subjective well-being, perceived caregiver satisfaction, ability/knowledge, and, sometimes, care-recipient symptoms" (p. 244). Biegel (in press) summarized the findings of intervention research targeting caregiver burden in dementia and other chronic illnesses. He noted that reviewers have consistently found small to moderate statistically significant effects across a range of outcomes. However, Schulz et al. (2002) concluded that few studies of dementia caregiver interventions have achieved clinically significant outcomes.

In a review of gender differences in caregiving, Yee and Schulz (2000) found that women, who constitute the majority of caregivers, are at greater risk for psychiatric morbidity than men. Sadly, Schulz (2003) found that caregivers' depressive symptoms were alleviated by the death of the care recipient. Glaser et al. (2000) found that current dementia caregivers showed deficits relative to controls and former caregivers in their response to vaccination, providing additional evidence of lowered immune response and health risks of dementia caregiving.

In a randomized, controlled trial of two psychoeducational group interventions for caregivers, Coon, Thompson, Steffen, Sorocco, and Gallagher-Thompson (2003)

assigned 169 female dementia caregivers aged 50 and older to an anger management

group, a depression management group, or a wait-list control condition. Results were that

both groups had reductions in anger and hostility compared to controls, and use of

positive coping strategies increased in the anger management group. Self-efficacy

increased significantly for both groups.

Recent randomized, controlled trials of interventions for dementia caregivers have

yielded some promising outcomes. Mittelman, Roth, Haley, and Zarit (2004) observe that

patient behavioral problems are particularly stressful for caregivers. They randomly

assigned 406 spouse/caregivers of Alzheimer's patients to either a multicomponent

intervention or usual care. The intervention group had less caregiver reaction to

behavioral problems. The effect was mediated by caregiver appraisal processes.

Gallagher-Thompson et al. (2000) compared family caregivers assigned to a life

satisfaction psychoeducational intervention, a problem-solving psychoeducational class,

or a wait-list condition. Caregivers receiving the life satisfaction intervention showed the

most improvement in depressive symptoms, whereas positive coping strategies increased

significantly in the problem-solving group. Another intervention study from the

Philadelphia REACH initiative (Gitlin et al., 2003) found that caregivers who

participated in a skill-building intervention reported less upset with patient behaviors, less

need for assistance, and better affect.

Biegel, Milligan, Putnam, and Song (1994) used a stress-coping framework to

investigate predictors of caregiver burden in a sample of 103 lower socioeconomic status

family members of persons with severe and persistent mental illness. They found that

greater frequency of client behavioral symptoms and lower perceived family support

predicted greater overall caregiver burden. The relationship between client behavioral

symptoms and caregiver burden is also found in research on caregivers of persons with

dementia. Song, Biegel, and Milligan (1997), in their study of predictors of depressive

symptomatology among lower social class caregivers of persons with severe mental

illness, found that insufficient overall social support was most strongly related to

depressive symptoms. Higher levels of client behavior problems and insufficient support

from family members and professionals were also associated with higher levels of

caregiver depressive symptomatology. Biegel, Robinson, and Kennedy (2000) reviewed

empirical studies for families of persons with mental illness. Educational,

psychoeducational, support group, and individual family support/multi-component

interventions were examined. They found the most support for the effectiveness of

educational and psychoeducational interventions in reducing family burden and

increasing family functioning. These interventions appear to have the strongest impact on

coping strategies and knowledge acquisition. Longer psychoeducational interventions are

also associated with decreases in patient symptomatology and improved family relations

(Biegel & Schulz, 1999). In another review of the impact of family interventions for

schizophrenia on family outcomes, Solomon (2000) found evidence for reductions in

family burden. McFarlane et al. (2003) also conclude that family interventions improve

patient outcomes and family member well-being.

Beckham, Lytle, and Feldman (1996) found that greater patient symptom severity

is associated with greater caregiver burden among partners of Vietnam War veterans with

posttraumatic stress disorder. In a review of the literature, Baronet (1999) observed that

of all factors associated with caregiver burden, the strongest associations were with care

recipient's symptomatic behavior. In addition, Dyck, Short, and Vitaliano (1999) found that patient positive symptoms also predicted an increased number of infectious illnesses experienced by schizophrenia caregivers.

Cuijpers (1999) has noted that research on interventions with family members of persons with schizophrenia has demonstrated a robust effect in preventing patient relapse. Family interventions often seek to reduce caregiver expressed emotion, which is related to patient relapse in schizophrenia, other mental disorders, and substance use disorders (Hogarty et al., 1986; Hogarty et al., 1991; McFarlane et al., 1995; O'Farrell, Hooley, Fals-Stewart, & Cutter, 1998). Cuijpers (1999) conducted a meta-analysis of research on family interventions and found sixteen studies that reported on some dimension of relatives' burden. With respect to reduction of relatives' burden, the effect size for the total sample of 16 studies was found to be moderate at post-test and small at follow-up. However, a subset of 6 studies were analyzed separately and found to have large effect sizes at post-test and at follow-up. The large-effect studies were longer in duration; four of the six had 13 or more sessions. Also, more reductions in caregiver burden and distress were found for partners of patients with psychiatric illnesses other than schizophrenia.

Research on the physiology of stress has implications for caregiver health. In a recent study of caregiving mothers of chronically ill children, caregiving women with the highest levels of perceived stress were found to have biological markers (shorter telomeres) indicative of a higher rate of cellular aging. On average, the shorter telomere length was equivalent to 10 years of additional aging compared to low stress women (Epel et al., 2004).

Family Member Coping

In a study of 46 family caregivers of persons with dementia in Sweden, Alberg, Grafstrom, and Winblad (1997) compared caregivers with "burnout" (physical, emotional, and mental exhaustion) with those not experiencing burnout. They found that emotion-focused coping strategies were used more often in the group of relatives experiencing burnout. In contrast, relatives without burnout used problem-focused strategies more frequently. They were more likely to confront problems, seek information, and reach out for social support. However, the non-burnout group also made use of combined strategies. They incorporated acceptance, an emotion-focused strategy, in addition to active coping.

Another important recent finding is that maladaptive caregiver coping style is linked to shorter survival time for care recipients. McClendon, Smyth, and Neundorfer (2004), in a study of 193 persons with Alzheimer's disease and their caregivers found that caregiver wishfulness-intrapsychic coping was related to decreased survival time. The researchers suggest that such caregivers may be less available psychologically and therefore less able to provide responsive, person-centered care to the person with dementia. This situation may inadvertently contribute to accelerated decline in the care recipient. In a European study of burden on families of patients with schizophrenia, Magliano et al. (1998) found that high levels of burden were associated with higher resignation and avoidance. Conversely, adaptive coping strategies used were social in nature. Coping strategies accounted for 56% of the variance in objective burden and 47% of the variance in subjective burden. Solomon and Draine (1995) studied family members of persons with serious mental illness and also found that social support was the

strongest factor in explaining family member adaptive coping. Greater adaptive coping was associated with greater density of the social network, more affirming social support, and participation in a family support group. The authors suggest that mental health professionals should encourage the use of community-based support groups for family members.

Webb et al. (1998) found that among family members of persons with severe mental illness, lower subjective burden was related to a tendency to use problem-solving coping strategies to deal with positive symptom behaviors. However, use of the same problem-solving coping style to address negative behaviors was associated with greater subjective burden. The researchers suggest that positive symptoms, such as behavioral outbursts, might lend themselves more readily to intervention. Negative behaviors, on the other hand, may be more difficult to change. Therefore, family members using active problem solving in this situation may be more frustrated.

Caregivers of patients with bipolar disorder have been less studied than caregivers of persons with schizophrenia. Chakrabarti and Gill (2002) contrasted 38 caregivers of patients with bipolar illness with 20 caregivers of patients with schizophrenia. They found that problem-focused coping strategies were used more often by the caregivers of patients with bipolar illness and emotion-focused strategies were used more often by caregivers of patients with schizophrenia. These researchers conclude that greater illness severity in the schizophrenia group and caregiver appraisals that little could be done to ameliorate the situation precipitated greater caregiver use of emotion-focused strategies such as avoidance, resignation, and seeking spiritual help. Consistent with stress-coping theory, higher levels of patient dysfunction and caregiver burden and lower levels of

social support were associated with emotion-focused coping strategies such as collusion.

Perlick et al. (2004) analyzed data from a sample of 126 outpatients with bipolar disorder or schizoaffective disorder, manic type, and their family caregivers. They conclude that when families experience high burden levels, patient outcomes are negatively affected. Families who reported higher burden also displayed higher levels of emotional overinvolvement, which is a dimension of expressed emotion. The data analysis supported the conclusion that higher family member emotional overinvolvement was related to lower levels of patient medication adherence and a greater risk of experiencing a major affective episode.

In a study of parent caregivers of adults with schizophrenia or autism, Greenberg (2003) found that caregiver burden was the strongest predictor of high expressed emotion in both groups. Also, a greater number of behavior problems predicted high expressed emotion.

Raune, Kuipers, and Bebbington (2004) compared high and low expressed emotion caregivers of 46 patients with first-episode psychosis. They report that high expressed emotion in caregivers was associated with higher avoidant coping, higher subjective burden, and lower perceived patient interpersonal functioning. Avoidant coping is consistent with high expressed emotion caregivers' perception that the stress of a relative's illness exceeds their ability to manage it. The researchers therefore suggest that clinical intervention should target caregivers' maladaptive cognitive appraisals.

Coping and Psychopathology

Although maladaptive coping responses on the part of family members may be a normal response to extraordinary stress, research suggests that coping responses are also

related to psychopathology. Endler, Parker, and Butcher (1993) found a strong positive direct association between emotion-focused coping and psychopathology. The authors conclude that this finding, consistent with previous research, suggests that emotion-oriented coping style may be an important predictor of psychological distress. However, further research is required to determine whether this coping style is a causal factor in the development of psychopathology or a consequence of psychological distress. In a sample of 298 outpatients with major depressive disorder, McWilliams, Cox, and Enns (2003) also found associations between less adaptive emotion-focused coping, neuroticism, and depression. The reverse was true for adaptive coping. Vollrath, Alnaes and Torgersen (1996) found that active, goal-oriented coping improved symptoms in the anxiety and dependency spectrum, whereas seeking social support reduced depressive symptoms among 155 psychiatric outpatients with DSM-III-R Axis-1 disorders. Distraction, use of alcohol or drugs, venting, and focusing on emotions were detrimental. Wolfradt and Engelmann (1999) examined the relationship between dissociative experiences and coping behavior in clinical and non-clinical samples. The clinical sample had higher scores on depersonalization as well as more passive forms of coping, including resignation, social isolation, self-compassion, and self blame, than the normal sample.

Arguably, all family interventions targeting family member coping that reduce patient symptoms and improve patient treatment outcomes will also improve family member well-being because patient symptomatic behavior has repeatedly been shown to predict family member distress. In both psychiatric and substance use disorders, family interventions have been shown to improve patient outcomes (Meyers, Miller, Smith, & Tonigan, 2002; Miller, Meyers, & Tonigan, 1999; McFarlane et al., 1995; Hogarty et al.,

1986, Hogarty et al., 1991; Fals-Stewart et al., 2000; Fals-Stewart & O'Farrell, 2003; O'Farrell, Hooley, Fals-Stewart, & Cutter, 1998; Barber & Gilbertson, 1996). Family member coping strategies that are frequently taught in successful interventions include reduction of expressed emotion (criticism, hostility, and over-involvement), increased positive interaction between family members and the ill relative, increased enjoyable sober activities, increased social support for family members, avoidance of behaviors such as family member drinking that may reinforce drinking behaviors in the ill relative, and implementation of clear strategies designed to support the recovery of the ill relative and the well-being of family members. However, few studies of family interventions for substance use disorders have measured outcomes for the family members. These few studies have yielded mixed results. For example, Meyers, Miller, Hill, and Tonigan (1999) found that both family member and patient outcomes improved as a result of intervention, whereas Barber and Crisp (1995) found that partner well-being was unchanged despite improvements for the problem drinkers in the sample. Hurcom, Copello, and Orford (1999) conducted an exploratory study investigating the relationship between coping style and psychological well-being among female partners of excessive drinkers. Although results were mixed, the researchers drew some tentative conclusions. They note that withdrawal coping reduces family member distress in some instances, engagement and withdrawal do occupy opposite ends of the coping spectrum, and that effectiveness of particular coping strategies depends a great deal on the context in which they are used.

Recent research on family member responses to a relative's alcoholism have been based on models suggesting that family member negative affect and maladaptive coping

represent normal responses to the stress of the drinking behavior. Rychtarik and McGillicuddy (2005) have developed an interactive stress-coping model that suggests effective family member coping is associated with less negative affect, less partner drinking, and less severe drinking consequences. The researchers studied 171 women distressed by their partners' untreated alcoholism. The women were randomly assigned to coping skills training, 12-step facilitation, or delayed treatment. Both treatments resulted in lower depression for the participants and decreased partner drinking. Higher skill level appeared to mediate reductions in depression in the coping skills training condition.

Rotunda and Doman (2001) understand partner enabling of substance use disorders to be a normal coping reaction to the stress of the partner's drinking. Rotunda, West, and O'Farrell (2004) administered a Behavioral Enabling Scale to 42 alcoholic clients and their partners in a couples counseling program and found that most partners engage in enabling behavior at least some of the time. They note that reduction in enabling behavior has been associated with reductions in depression and anxiety among women living with a problem drinker (Dittrich & Trapold, 1984). In their discussion, these researchers explain that they assume enabling behaviors to be maladaptive in the long run, hindering progress with addiction recovery and relationship functioning. However, they also suggest that enabling behaviors may be adaptive in particular contexts. They point out that high partner expressed emotion (criticism, hostility, and over-involvement) has implications for the drinker's recovery or relapse (Rotunda & O'Farrell, 1998) and suggest that there is potentially an association between expressed emotion, behavioral enabling, and patient treatment outcome.

Orford et al. (1998) examined the structure of families coping with alcohol and drug problems in England and Mexico City. They interviewed 100 English and 107 Mexican families and sought to identify dimensions of coping through factor analysis of data from an interview and questionnaire. The analysis did not give strong support to the hypothesis that eight or nine distinct ways of coping could be identified. The researchers therefore concluded that coping in this population can best be described as having three broad positions: tolerating, engaging, and withdrawing. In their discussion, they observe that distinctions between successful and unsuccessful coping are difficult to make in this population and that the factor structure they discovered challenges assumptions about adaptive and maladaptive family coping. For example, presumably dysfunctional controlling and emotional behaviors were not separable from assertion, which is presumably functional. Likewise, independence is considered an adaptive trait but was found in combination with avoidance and lack of support, neither of which are usually considered adaptive. Researchers have suggested that an evidence-based intervention approach needs to recognize that a particular coping strategy can have both positive and negative outcomes (Copello et al., 2000). In a smaller survey of 29 women coping with excessive drinking in a male partner, the women's psychological well-being was best predicted by a single variable: the degree of hardship caused by the drinking (Hurcom & Orford, 1999).

While considering family member stress, coping, and well-being, it is valuable to briefly consider coping as it applies to recovery of the ill relative. Research in this area provides some support for the maladaptive/adaptive dimensions of coping as described by Carver, Scheier, and Weintraub (1989). Avoidant coping has been found to predict

anxiety and depression in recently detoxified alcoholics (Spangenberg & Campbell, 1999). Holahan, Moos, Holahan, and Cronkite (2003) conducted a 10-year study of persons with unipolar depression. They note that earlier researchers have found an association between avoidant coping and emotional distress, and that patients with dual disorders had more abstinence and fewer psychiatric symptoms when they relied more on approach rather than avoidance coping (Moggie, Ouimette, Moos, & Finney, 1999). Researchers have found that alcoholic patients' coping responses predict treatment outcomes, with increased approach coping predicting lower severity of alcohol problems and decreased avoidance coping predicting fewer alcohol, psychological, and relationship problems. Also, participation in Alcoholics Anonymous reduced avoidance coping and increased approach coping (Chung, Langenbucher, Labouvie, Pandina,& Moos, 2001; Humphreys, Finney, and Moos, 1994). Finally, drinking to cope predicted future hazardous drinking among medical students and strengthened the link between depressive symptoms and drinking behavior in unipolar depression (Kjobli et al., 2004; Holahan, Moos, Holahan, & Cronkite, 2003). The findings on drinking to cope are directly relevant to family members who may also use drinking or drug use as a maladaptive coping strategy.

Women with rheumatoid arthritis engaged in more maladaptive coping behaviors when their spouse had a highly critical attitude. Patients with a supportive spouse reported more adaptive coping (Manne & Zautra, 1989). Among men and women living with HIV/AIDS, maladaptive coping strategies were associated with lower energy and lower social functioning (Vosvick et al., 2003).

On a brighter note, Stowell, Kiecolt-Glaser, and Glaser (2001) found that active coping at high stress levels can have a positive effect on immune function. In patients and significant others coping with kidney transplant surgery, Tix and Frazier (1998) found that religious coping was associated with better adjustment in both patients and partners.

The sample population in this study comprises women with substance use disorders or with substance use and less severe mental illnesses and their family members. Substance-abusing or dually diagnosed women have been less studied than their male counterparts, consequently less is known about their distinctive characteristics and needs. What is known is that women with co-occurring disorders frequently have histories of sexual abuse and physical abuse, a risk factor for substance abuse and other mental disorders (Veysey & Clark, 2004). Diagnoses of PTSD or borderline personality disorder are frequently given to women with abuse histories (Becker, 2000). In a sample of homeless and housed poor women, Bassuk, Buckner, Perloff, and Bassuk (1998) found a higher prevalence of trauma-related disorders than among women in the general population. These researchers also found that women in their sample with two or more lifetime disorders had the following diagnoses: substance use disorder 89%, PTSD 85%, depression 73%, and an anxiety disorder 71%. For both men and women in treatment for substance abuse, trauma histories are associated with a greater likelihood of relapse (Farley, Golding, Young, Mulligan, & Minkoff, 2004).

Women are at greater risk than men for depression, having a prevalence rate approximately twice that of men. A history of stressful life experiences puts women at greater risk for developing depression. Depression is "the leading cause of disease-related disability among women in the world today" (Kessler, 2003, p. 6). Social and

environmental factors may play a large role in causing or exacerbating the less severe psychiatric illnesses common in various female populations. Social factors are important in the treatment of these disorders. For example, research on relatives' expressed emotion suggests that the family emotional environment is related to relapse in patients with depression (Hooley, Orley, & Teasdale, 1986), bipolar illness (Miklowitz et al., 2000), and PTSD (Tarrier, Sommerfield, & Pilgrim, 1999).

Gender is also a factor in the well-being of family members of women in treatment. In general, the caregiving role is more frequently filled by women than by men, and previous research on other populations suggests that women caregivers are much more susceptible to depression and psychiatric morbidity than men (Gerstel & Gallagher, 2001; Yee & Schulz, 2000).

In summary, the notion that family members experience stress and decreased well-being when caring for a relative with a substance use or psychiatric disorder has considerable empirical support when examined in the general context of these disorders (Fig. 1, C). Further, existing evidence suggests that specific family member coping strategies do affect outcomes for both patients and family members (Fig. 1, B). However, very little research addresses the impact of these specific disorders on family members of women patients or the effect of family member coping strategies on family member well-being. Whether or not substance use disorders or less severe dual disorders create family member burden comparable to that experienced by other relatives of persons with chronic illness is unknown. Similarly, differences in family member coping strategies that may affect outcomes have not been investigated in this population.

As for other relationships between variables in the proposed model, evidence is scattered. Some have suggested that the severity of the illness-related stressors is a causal factor in the use of greater emotion-focused coping (Fig. 1, A) because family members appraise the problem as less amenable to change (Chakrabarti & Gill, 2002). This parallels the hypothesis that negative family behaviors, such as enabling, are normal reactions to stress caused by a relative's illness (Rotunda & Doman, 2001). Alternatively, illness-related stressors may have little impact on family member use of specific coping strategies. In that case, family member coping might be best understood as a moderating variable (Fig. 1, D) affecting the strength of the relationship between the illness-related stressors and family member well-being.

Chapter 3: Research Questions and Hypotheses

Introduction

To investigate the relationships among variables that potentially affect the well-being of family members caring for women with substance use or co-occurring disorders, two research questions and nine hypotheses are posed. The first research question and the first five hypotheses examine the impact of various illness-related stressors on each of the outcome variables in multivariate analyses suggested by the stress-coping model previously described. To test the relative importance of each variable in relation to the other predictor variables, a multiple regression model will be estimated. The second research question and the remaining four hypotheses investigate whether family member coping strategies mediate or moderate the effect of the illness-related stressors on family member well-being.

Research Question #1:

What is the impact of illness-related stressors (client behavioral problems, client treatment motivation, client substance use, client institutional status, and client dual disorder) on well-being (burden, depressive symptoms, and physical health) of family members of persons with a substance use disorder or co-occurring substance use and mental disorders?

Hypothesis I: More client behavioral problems are associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Rationale Hypothesis I: In previous research, the relationship between greater client behavioral problems and greater burden, depressive symptoms, and poorer physical

health of family members has been found repeatedly across disparate chronic illness populations. Thus, it seems likely that the relationship exists in the population under study (Pearlin, Mullan, Semple, & Skaff, 1990; Biegel (in press); Schulz, O'Brien, Bookwala, & Fleissner, 1995; Gonzalez-Salvador, Arango, Lyketsos, & Barba, 1999; Pinquart & Sorensen, 2003; Schulz & Martire, 2004; Biegel, Milligan, Putnam, & Song, 1994; Song, Biegel, & Milligan, 1997).

Hypothesis II: Lower client treatment motivation is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Rationale Hypothesis II: Although no research exists on the impact of client treatment motivation on family member burden, such a relationship is logically consistent with research linking higher client treatment motivation to better client treatment outcome (Joe, Simpson, & Broome, 1998; DiClemente, Bellino, & Neavins, 1999; De Leon, Melnick, Thomas, Kressel, & Wexler, 2000; Melnick, De Leon, Thomas, Kressel, & Wexler, 2001; Martino, Carroll, O'Malley, & Rounsaville, 2000). Successful treatment reduces client symptomatic behavior, which has been tied to family member well-being (see Hypothesis I).

Hypothesis III: Greater frequency and extent of client substance use are associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Rationale Hypothesis III: Drug and alcohol use causes significant stress in family members with associated physical and psychological symptoms. Copello et al. (2000) estimate that each person with a drug or alcohol problem adversely affects at least two

family members. Therefore, it is logical to suppose that greater use of drugs or alcohol will be associated with lower family member well-being.

Hypothesis IV: Client history of incarceration or hospitalizations for substance use or mental illness is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Rationale Hypothesis IV: Although no research exists on the relationship between client hospitalizations and family member burden or other family member outcomes, frequent hospitalizations are linked to greater symptom severity (Williams, Weiss, Edens, Johnson, & Thornby, 1998; Timko & Moos, 2002). Because higher client symptomatic behaviors are related to lower family member well-being, it is logical to infer that hospitalizations associated with higher symptom severity will also be associated with poorer family member outcomes. Research on the impact of incarceration on family members is also sparse. However, some studies have linked client incarceration with greater burden and poorer outcomes for family members (Arditti, Lambert-Shute, & Joest, 2003; Lowenstein, 1984).

Hypothesis V: Presence of both client mental illness and a substance use disorder is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Rationale Hypothesis V: The existence of co-occurring disorders in a relative is highly stressful for family members, causing high levels of tension, conflict, and violence (Mueser & Fox, 2002; Dixon, McNary, & Lehman, 1995). Similarly, substance use disorders create severe stress for families (Copello et al., 2000). Further, it is known that persons with dual disorders frequently have more severe psychosocial consequences than

persons with a single disorder, including higher rates of relapse, more hospitalizations, more legal problems, and higher rates of homelessness (Drake, Wallach, Alverson, & Mueser, 2002). Therefore, it is logical to infer that family members of persons with co-occurring disorders may also experience greater stress and more negative outcomes than family members of persons with a single disorder.

Research Question #2:

Does greater family member use of adaptive or maladaptive coping strategies mediate or moderate the impact of illness-related stressors on family member well-being?

Hypothesis VI: The relationship between family member stressors and family member well-being is mediated by family member adaptive coping. Greater illness-related stressors are associated with lower levels of adaptive family member coping and lower family member well-being.

Rationale Hypothesis VI: The hypothesized mediating role of family member adaptive coping means that the independent variables (greater severity of illness-related stressors) are associated with a lower level of family member use of adaptive coping strategies, leading to lower family member well-being. A mediating variable accounts for the relationship between predictors and criterion variables. Consequently, the relationship between the independent variables and the outcome variables will disappear (or be significantly reduced) when the impact of the stressors on the type of coping (and type of coping on outcome) has been controlled. In a study of family members of persons with dementia, researchers found that relatives without burnout used adaptive problem-focused strategies more frequently than relatives with burnout (Alberg, Grafstrom, & Winblad, 1997). This mediation hypothesis is consistent with the perspective that family

member ability to use adaptive coping deteriorates as illness-related stress increases (Rotunda & Doman, 2001).

Hypothesis VII: The relationship between family member stressors and family member well-being is mediated by family member maladaptive coping. Greater illness-related stressors are associated with higher levels of maladaptive family member coping and lower family member well-being.

Rationale Hypothesis VII: This mediation hypothesis is supported by the findings of Magliano et al. (1998) that high levels of burden were associated with greater family member resignation and maladaptive avoidance coping. Chakrabarti and Gill (2002) also found that caregivers of persons with bipolar illness more often used problem-focused coping strategies, whereas caregivers of persons with schizophrenia more often used emotion-focused coping strategies. The researchers explain this difference by suggesting that in the schizophrenia group, caregiver appraisals that the situation was not amenable to change through their efforts led to greater use of emotion-focused strategies, including resignation, avoidance, and seeking spiritual help. Greenberg (2003) found that caregiver burden was the strongest predictor of high expressed emotion and that more behavior problems predicted high expressed emotion, which is conceptually similar to the venting dimension of the maladaptive coping construct (expressing negative feelings). These findings suggest that higher family stress levels increase the likelihood family members will use maladaptive coping and experience more negative outcomes.

Hypothesis VIII: Alternatively, the relationship between family member stressors and family member well-being is moderated by family member adaptive coping. Specifically, the effect of stressors on family member burden, depressive symptoms, and

physical health will be stronger when adaptive coping is lower. Similarly, among persons with high adaptive coping, the effects of stressors on family member burden, depressive symptoms, and physical health will be weaker.

Rationale Hypothesis VIII: The hypothesized moderating role of family member adaptive coping means that the direction or strength of the relationship between the predictor variables and criterion variables is affected by coping. This hypothesis is consistent with research findings across diverse populations suggesting that active, problem-focused coping is more adaptive in most contexts (Carver, Scheier, & Weintraub, 1989; Carver, 1997; Dunkel-Schetter et al., 1992; Folkman & Lazarus, 1985, Stowell, Kiecott-Glaser, & Glaser, 2001).

Hypothesis IX: The relationship between family member stressors and family member well-being is moderated by family member maladaptive coping. Specifically, the effect of stressors on family member burden, depressive symptoms, and physical health will be stronger when maladaptive coping is higher. Similarly, among persons with low maladaptive coping, the effects of stressors on family member burden, depressive symptoms, and physical health will be weaker.

Rationale Hypothesis IX: This hypothesis is logically consistent with research findings that maladaptive coping strategies are associated with poorer family member outcomes (Magliano et al., 1998; Greenberg, 2003).

Chapter 4: Methodology

This investigation analyzes data from a pilot study conducted by David Biegel entitled "Families of Women with Co-occurring Substance Abuse and Mental Disorders: Involvement, Roles and Well-Being." The study was supported by a Social Work Research Development Program grant from the National Institute on Drug Abuse (5 R01 DA13944-02).

Subjects

The study sample consisted of women participating in either an outpatient or a residential substance abuse treatment program and a family member nominated 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. In addition, women included in the study were those willing to nominate the family member or significant other who provided them with the most social support. Social support was defined as emotional support (e.g., listening to my problems), instrumental support (e.g., financial aid) and/or informational support (e.g., employment advice).

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. Nominated family members were contacted after the women's interview, and 95% (N = 82) of the family members agreed to be interviewed. 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).

Study Design and Procedures

The study used an exploratory, non-experimental cross-sectional survey design. Data were collected by trained interviewers in face-to-face interviews lasting an average of 1 hour and 45 minutes for the women's interview and one hour and 20 minutes for the family member interview. Women's interviews were conducted in private offices at the treatment centers; interviews with family members were conducted at a research office located on the campus of an academic medical center. 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.

Measures

Measures of 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.

As expected in a sample of clients currently receiving treatment for a substance use disorder, all of the women met criteria for at least one current (last 12 months) substance use disorder (either abuse or dependence). 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).

Stressors

Frequency of Client Behavioral Problems

Client behavioral problems were measured using a Client Behaviors Scale developed by David Biegel and colleagues for use with family caregivers of persons with mental illness (Biegel, Milligan, Putnam, & Song, 1994) and adapted for the current study. Scale modifications were made based on a review of the literature to identify behavioral problems displayed by the study population that may be perceived as stressful by family members. The modified scale consists of 58 items using a 5-point scale ranging from 0 ("never") to 4 ("constantly or almost constantly"). It includes behavior problems such as problems managing money, irritability, caused trouble with the neighbors, did things to embarrass you. Higher scores indicate a greater degree of client behavioral problems.

Client Treatment Motivation

The 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 (9 items), readiness for treatment (8 items), and desire for help (7 items). Responses are on a 5-point Likert scale ranging from "strongly disagree" to "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

Client substance use means client substance use as perceived by the family member. It was measured by two single 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

Client institutional status means whether or not client was ever hospitalized for a drug or alcohol problem or an emotional problem or 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).

Dual Disorder

This is a composite measure based on data from the C-DIS indicating whether or not respondents met criteria for current dual disorder (substance abuse or dependence and at least one of the following mental disorders: major depression, posttraumatic stress disorder, generalized anxiety disorder, mania, hypomania, or dysthymia).

Family Member Coping

Adaptive and maladaptive subscales of the Brief COPE (Carver, 1997) are used to measure family member coping. The Brief COPE is a 28-item scale developed from the longer COPE (Carver, Scheier, & Weintraub, 1989), which has demonstrated good reliability and validity when tested with large samples. 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: Active Coping, Planning, Positive Reframing, Acceptance, Humor, Religion, Using Emotional Support, Using Instrumental Support, Self-Distraction, Denial, Venting, Substance Use, Behavioral Disengagement, and 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 is 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 subscale is 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.

Outcomes – Family Member Well-Being

Burden

Based on findings from previous research indicating the multidimensional nature of caregiver burden, burden 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 with established construct validity and reliability (Tessler & Gamache, 1995). The four subscales are Worry, Displeasure, Stigma, and Impact. Worry, Displeasure, and Stigma are measures of subjective burden, whereas the Impact subscale is a measure of objective burden.

Worry – Family members reported the frequency with which they experienced worries concerning the client during the past 12 months (e.g., client's safety, social life, or financial management). The scale's 7 items were rated on a 5-point scale from 0 ("never") to 4 ("constantly or almost constantly"). A higher total score indicated a greater degree of worry.

Displeasure – The Displeasure scale measures the extent of agreement with 8 statements regarding negative feelings family members may have experienced in the past

12 months in relation to the client. Sample items include disappointment with her, embarrassed by her behavior, gets depressed when thinking about her. The 8 items were scored on a 4-point scale from 1 ("strongly agree") to 4 ("strongly disagree"). A higher total score indicates a greater degree of displeasure.

Stigma – The Stigma scale measures concerns that family members have had in the past 12 months about the way they would be perceived or treated by others. For example, worry that people would find out, keeping client's alcohol or drug use a secret, worry that best friends will treat you differently. The 9 items are scored on a 5-point scale from 0 ("never") to 4 ("constantly or almost constantly"). Higher total score indicates a greater degree of stigma.

Impact – The Impact scale indicates the degree to which the family member's life was disrupted by assisting the client in the past 12 months in four areas: missed or late for school or work; changes or disruptions in social and leisure activities; disruptions or changes in household routine; and being prevented from giving other family members time and attention. The four areas were each scored on a 5-point scale from 0 ("never") to 4 ("constantly or almost constantly").

Depressive Symptomatology

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 (α=.90) when used with a population of lower socioeconomic status African American and Caucasian caregivers (Biegel, Milligan, Putnam, & Song, 1994).

Family Member Physical Health

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 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).

Confidentiality and Informed Consent

Women in treatment for substance use disorders at two Cleveland sites 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 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. Names and other identifying data were omitted from survey instruments. Survey participants were assigned an identification number as the sole identifying item on the questionnaires.

A single copy of the list of names with identifying numbers was kept in a locked file cabinet in the possession of the senior investigators. 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. Names of subjects are unknown to this writer and will not appear in any publication or report resulting from this analysis. The dataset used in this analysis is kept under lock and key in the possession of this writer. Case IRB approval was obtained before the data was analyzed.

Data Analysis

SPSS statistical software was used to conduct all planned analyses of the data. Scales used in the study have demonstrated acceptable reliability and validity in previous research with family caregivers of persons with mental illness, but have not been used prior to Dr. Biegel's study with family members of persons with substance abuse or substance abuse and mental illness. To assess internal consistency of the scales, the alpha coefficients were calculated.

Univariate frequencies and descriptive statistics, including means, standard deviations, medians, skewness, and kurtosis, were calculated for the study variables. These data were examined to determine whether assumptions for multivariate analyses have been met. Specifically, assumptions that variables are normally distributed, that the relationships between independent and dependent variables are linear, and that measures are reliable were checked by examination of scatter plots and computing appropriate statistical tests. If necessary assumptions were not met, alternative strategies, such as

recoding variables, deleting outliers, or utilizing nonparametric techniques, were considered.

Bivariate relationships were examined to determine size and direction of correlations and to identify any potential problems of multicollinearity. Pearson correlation or cross-classification techniques (such as chi-square statistic) were used depending on level of measurement. Control variables were included in multivariate analyses if they were found to be significantly correlated with outcomes, but not with each other. Gender of family member and relationship of family member to client (whether or not client is the family member's significant other) are control variables that were considered in the analysis. Correlations in the expected direction that are statistically significant at the .05 alpha level were considered evidence that the hypothesized relationship exists. The Pearson's r statistic was used to determine the strength of the association between the variables.

Multivariate analyses were conducted to investigate predictors of family member well-being. A separate regression was performed for each outcome (four burden subscales, depressive symptomatology, and physical health). Adaptive and maladaptive coping was 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).

Testing Hypotheses

Hypothesis I: More client behavioral problems are associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health. To test this hypothesis, bivariate correlations between the behavioral

problems scale and each of the family member outcome variables were examined. These include the four family member burden subscales (Worry, Displeasure, Stigma, and Impact), the CES-D scale and family member overall physical health.

Hypothesis II: Lower client treatment motivation is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health. To test this hypothesis, bivariate correlations between each treatment motivation predictor variable (the three subscales measuring treatment motivation – Treatment Readiness, Desire for Help, and Problem Recognition) and the family member outcome variables (four burden subscales, depressive symptomatology, and physical health) were examined.

Hypothesis III: Greater frequency and extent of client substance use are associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health. To test this hypothesis, bivariate correlations between each substance use predictor variable (substance use frequency and extent) and the family member outcome variables (four burden subscales, depressive symptoms, and physical health) were examined.

Hypothesis IV: Client history of incarceration or hospitalizations for substance use or mental illness is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health. To test this hypothesis, bivariate correlations between each of the four incarceration or hospitalization predictor variables (ever hospitalized for drug/alcohol problems, ever hospitalized for emotional problems, been arrested past six months, been in jail or prison

past six months) and the family member outcome variables (four burden subscales, depressive symptoms, and physical health) were examined.

Hypothesis V: Presence of both client mental illness and a substance use disorder is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health. To test this hypothesis, bivariate correlations between client current dual disorder and the family member outcome variables (four burden subscales, depressive symptoms, and physical health) were examined.

Multiple Regression Analysis

If statistically significant relationships were found to exist between more than one illness-related predictor variable (stressors) and each of the family member outcome variables, multiple regression equations were estimated to ascertain the relative contribution of each independent variable to explained variance in the value of the dependent variable. The predictor variables with statistically significant correlations to an outcome were entered to ascertain the amount of variance explained by each predictor variable and the amount of variance explained by the model as a whole. Gender of the family member and relationship of family member to client (whether or not client is family member's significant other) were included as control variables. Variables that did not add a statistically significant amount to the explained variance were dropped from the analysis.

Hypothesis VI: The relationship between family member stressors and family member well-being is mediated by family member adaptive coping. Greater illness-related stressors are associated with lower levels of adaptive family member coping and

lower family member well-being. Prior to testing this hypothesis, bivariate correlations between stressor variables and adaptive coping and between adaptive coping and outcome variables were examined together with main effects of stressors on outcomes from the first multiple regressions. The mediation hypothesis was tested by estimating a series of separate regression models for every instance in which the adaptive coping variable is significantly correlated with both a stressor variable and an outcome variable. First, adaptive coping was regressed on the independent variable. Then, the outcome variable was regressed on the independent variable. Finally, the dependent variable was regressed on both the independent variable and on adaptive coping. Baron and Kenny (1986) explain that mediation is established when the following conditions are met.

1) In the first equation, the independent variable must affect the mediator.

2) In the second equation, the independent variable must be shown to affect the dependent variable.

3) In the third equation, the mediator must affect the dependent variable.

4) If all the above are found to hold in the predicted direction, then the effect of the independent variable on the dependent variable must be lower in the third equation than in the second. "Perfect mediation holds if the independent variable has no effect when the mediator is controlled" (Baron & Kenny, 1986, p. 1177). David Kenny (2006) further explains that if the first three steps are met, but not the fourth, the data are consistent with a hypothesis of partial mediation.

Hypothesis VII: The relationship between family member stressors and family member well-being is mediated by family member maladaptive coping. Greater illness-related stressors are associated with higher levels of maladaptive family member coping

and lower family member well-being. This hypothesis was tested by estimating a series of regression equations as described above except that maladaptive coping was examined as a possible mediator.

Hypothesis VIII: Alternatively, the relationship between family member stressors and family member well-being is moderated by family member adaptive coping. Specifically, the effect of stressors on family member burden, depressive symptoms, and physical health will be stronger when adaptive coping is lower. Similarly, among persons with high adaptive coping, the effects of stressors on family member burden, depressive symptoms, and physical health will be weaker. To test this hypothesis, the moderating role of adaptive coping was examined with respect to main effects of predictor variables on outcome variables found in the first set of multiple regressions. As suggested by Cohen, Cohen, West, and Aiken (2003), each outcome was regressed on a set of predictor variables as follows. Independent variables and moderators in the analysis were first centered. Then, the hypothesized moderator variable (adaptive coping) was entered into the regression equation, followed by the first independent variable and the cross product of the moderator and the first independent variable in separate steps. This procedure was repeated for every predictor showing a main effect and the hypothesized moderator variable. Moderator effects were indicated by a significant increase in R^2 beyond the R^2 obtained for the main effects after the interaction terms had been added.

Hypothesis IX: The relationship between family member stressors and family member well-being is moderated by family member maladaptive coping. Specifically, the effect of stressors on family member burden, depressive symptoms, and physical health will be stronger when maladaptive coping is higher. Similarly, among persons with low

maladaptive coping, the effects of stressors on family member burden, depressive symptoms, and physical health will be weaker. This hypothesis was tested in the same way as Hypothesis VIII, except that in this instance, maladaptive coping was the hypothesized moderator.

Chapter 5: Findings

Sample Characteristics

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 C-DIS (see Table 1) 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 C-DIS (see Table 2) 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 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. Age range of family members was 18 to 77, with a mean of 40.04 years.

Illness-Related Stressors

Table 3 reports descriptive statistics for illness-related stressors included in the study. Overall mean score of client behavioral problems as rated by family members was 89.76 out of a potential score of 232. The actual range was 2 to 194. Reliability of the scale was excellent with a Cronbach's alpha of .97.

Client attitudes were generally positive toward treatment; treatment motivation subscales were problem recognition (M = 36.68, SD = 7.8), treatment readiness (M = 33.91, SD = 4.66), and desire for help (M = 31.62, SD = 4.41). Cronbach's alpha of the three subscales ranged from acceptable to good (problem recognition α = .88, treatment readiness α = .74, and desire for help α = .83).

Client substance use as perceived by the family member was measured by two single items from the family member interview. The first item was the frequency of drug or alcohol use by the client in the past twelve months. Actual responses ranged from 0 ("never") to 4 ("constantly or almost constantly"), with a mean of 2.05 (2 = "sometimes"). The second item asked how much of a problem client's drug or alcohol use has been in the past 12 months. Actual responses ranged from 0 ("not at all") to 3 ("severe"), with a mean of 1.68 (between "mild" and "moderate").

Client institutional status was measured by two items from the family member interview and two items from the client interview. 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). About a quarter of family members (26%) reported the client had been hospitalized for a drug or alcohol problem, while fewer (16%) reported that client had been hospitalized for an emotional problem. About one-fifth (20%) of clients reported being arrested in the past 6 months, and 19% reported being in jail or prison in the past 6 months.

Client dual disorder was a composite measure based on data from the C-DIS indicating whether or not clients met criteria for current substance abuse or dependence and whether or not clients met criteria for at least one current mental disorder: generalized anxiety disorder, depression, dysthymia, posttraumatic stress disorder, mania, or hypomania. Clients having at least one diagnosis of current substance abuse or

dependence and one current mental disorder were counted as having dual disorders. More than half (56%) of the women in treatment had a current dual disorder.

Family Member Coping

As shown in Tables 4 and 5, 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 α = .78, maladaptive coping α = .70). Tables 4 and 5 also show the names of the coping subscales and the wording of sample items for each adaptive or maladaptive coping subscale.

Family Member Outcomes

As shown in Table 6, 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 cutpoint 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 present time, while about a third (35.4%, N = 29) reported poor or fair health.

Preliminary Examination of Data

As a first step in the data analysis, frequencies and descriptive statistics (mean, median, mode, standard deviation, skewness, and kurtosis) were computed in SPSS for all included variables. Additionally, histograms plotting normal curves were examined. All indicators suggested that variables are normally distributed. No extreme outliers were noted in the frequencies, and all skewness and kurtosis statistics were within normal range (between 0 and 2.00 for skewness and between 0 and 7.00 for kurtosis). To check reliability, Cronbach's alpha was computed for all measures. All scales had an acceptable alpha of .70 or above.

Correlation Analysis

The next step was to examine correlations among all variables to check for multicollinearity and to identify significant correlations for further analysis. Scatterplots were examined for all significant pairs of variables to ascertain whether or not the relationships were linear. The scatterplots confirmed that the relationships are linear in nature. Correlations were used to answer the first research question and test bivariate Hypotheses I through V. These correlations are shown in Tables 7 through 11 and summarized in Table 12. Correlations of adaptive and maladaptive coping and the two-item coping subscales were also computed to identify variables appropriate for inclusion in tests of the mediation hypotheses and to further explicate findings related to coping. Results of the multivariate analyses are presented after the discussion of the bivariate correlational analyses.

Findings Research Question #1, Hypotheses I – V

Research Question #1: What is the impact of illness-related stressors (client behavioral problems, client treatment motivation, client substance use, client institutional status, and client dual disorder) on well-being (burden, depressive symptoms, and physical health) of family members of persons with a substance use disorder or co-occurring substance use and mental disorders?

Hypothesis I: More client behavioral problems are associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Findings Hypothesis I: Client behavioral problems as reported by family members were found to be significantly associated with each of the four types of family member burden (Worry, Stigma, Displeasure, and Impact) and family member depressive symptomatology, such that higher behavioral problems are associated with higher Worry, Stigma, Displeasure, Impact, and depressive symptomatology (Table 7). The relationships range from weak to moderately strong. No association was found between client behavioral problems and family member physical health.

Hypothesis II: Lower client treatment motivation is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Findings Hypothesis II: No support was found for this hypothesis. Client treatment motivation as reported by the women in treatment is associated with some types of family member burden, but not in the hypothesized direction. Treatment motivation (desire for help and problem recognition subscales) had small to moderate statistically significant positive correlations with family member burden Worry subscale

and Displeasure subscale, such that higher client desire for help and problem recognition were associated with higher family member Worry and Displeasure (Table 8). No association was found between the treatment readiness subscale and any family member outcome. Further, no association was found between client treatment motivation and family member depressive symptomatology or family member physical health.

Hypothesis III: Greater frequency and extent of client substance use are associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Findings Hypothesis III: Frequency and extent of client substance use in the past 12 months as reported by family members are positively associated with family member burden. Statistically significant correlations were found between frequency of client alcohol or drug use and the Worry and Impact subscales (Table 9), such that higher frequency of alcohol or drug use is associated with higher Worry and Impact. Frequency of alcohol or drug use was not associated with family member Stigma or Displeasure. Significant correlations were also found between extent of client alcohol or drug use and all four family member burden subscales, such that greater extent of client alcohol or drug use is associated with higher family member Worry, Stigma, Displeasure, and Impact. The correlations were moderately small. No statistically significant associations were found between frequency or extent of client substance use and family member depressive symptomatology or physical health.

Hypothesis IV: Client history of incarceration or hospitalizations for substance use or mental illness is associated with greater family member burden, more family member depressive symptomatology, and poorer family member physical health.

Findings Hypothesis IV: As shown in Table 10, history of client arrest, jail or prison (as reported by clients) and hospitalization for drug or alcohol use (as reported by family members) are positively associated with some types of family member burden. However, no association was found between client arrest, incarceration, or hospitalization and family member depressive symptomatology or physical health. Small, statistically significant associations were found between client arrest and the Worry and Impact subscales, such that client arrest was associated with higher family member Worry and Impact. Small, statistically significant associations were also found between client having been in jail or prison and family member Worry, Stigma, Displeasure, and Impact subscales, such that client having been in jail or prison was associated with greater Worry, Stigma, Displeasure, and Impact. Client hospitalization for drugs or alcohol was also significantly associated with the Displeasure subscale, such that client drug or alcohol hospitalization was associated with greater family member Displeasure. Client hospitalization for drugs or alcohol was not associated with any other family member outcome. Client hospitalization for emotional problems (as reported by family members) was not associated with any family member outcome, including the four burden subscales, depressive symptomatology, or physical health.

Hypothesis V: Presence of both client mental illness and a substance use disorder is associated with greater family member burden, more family member depressive symptoms, and poorer family member physical health.

Findings Hypothesis V: A small, statistically significant positive association was found between current client dual disorder and greater family member depressive

symptomatology (Table 11). No association was found between client dual disorder and

any type of family member burden or family member physical health.

Multivariate Analysis - Main Effects

To identify statistically significant relationships between illness-related stressors

and family member outcomes while controlling for effects of multiple independent

variables, multiple regression equations were estimated. In these equations, each

dependent variable (family member outcome measure) was regressed on the set of

predictor variables with which it was found to be significantly correlated. Three pairs of

stressor variables were found to be highly intercorrelated with a value above 0.70:

frequency of drug/alcohol use in the past 12 months was highly correlated with extent of

drug/alcohol use (.830, $p < .01$), been arrested with jail or prison (.881, $p < .01$), and

desire for help with problem recognition (.851, $p < .01$). The two control variables

(gender and relationship/significant other) were also found to be highly intercorrelated (-

777, $p < .01$). The decision was made to drop one variable from each of the four highly

intercorrelated pairs to eliminate the muticollinearity. Thus, frequency of drug/alcohol

use, been in jail/prison, problem recognition, and gender were dropped from the analysis

and extent of drug/alcohol use, been arrested, desire for help, and significant other were

retained. These variables, except for the arrest variable, were chosen for retention

because they had larger correlations and were correlated with more outcomes overall.

The arrest and jail/prison variables were very similar to each other. The jail/prison

variable had an affirmative response in 15 cases and the arrest variable had an affirmative

response in 16 cases. In view of this difference of only one case, the arrest variable was

chosen for analysis because it had no missing cases (N = 82), whereas the jail/prison

variable was missing two cases (N = 80).

After these adjustments were made for multicollinearity, multiple regressions for

each of the dependent variables were estimated using the independent variables with

which outcomes were significantly correlated. The results of this series of multiple

regressions is shown in Tables 13 through 17. There is no table for the family member

physical health outcome because no stressor variables were significantly correlated with

family member physical health (see Summary Table 12).

When the Worry subscale was regressed on the stressor variables with which it

was correlated (Table 13), only client behavioral problems remained a statistically

significant predictor. Client desire for help, extent of drug or alcohol use, and whether or

not client had been arrested did not make significant contributions to the model. The

model explained 32% of the variance in the Worry subscale. When the Stigma subscale

was regressed on its correlated stressors (client behavior problems, extent of client drug

or alcohol use, and whether or not family member is client's significant other), client

behavior problems was once again the only statistically significant predictor (Table 14).

This model accounted for 16% of the variance in the Stigma outcome measure. When the

Displeasure subscale was regressed on its correlated stressors (Table 15), client behavior

problems was again the only stressor variable significantly related to Displeasure. The

model accounted for 37% of the variance in Displeasure. In Table 16, the Impact subscale

is regressed on three correlated stressor variables. Two of the stressor variables (client

behavior problems and extent of client drug or alcohol use) are statistically significant

predictors of Impact. The third variable, whether or not client had been arrested, did not

contribute significantly to the model. The model explained 26% of the variance in the

Impact subscale. Table 17 shows the results of the regression of the depressive

symptomatology outcome on two correlated stressor variables: client behavior problems

and client current dual disorder. Neither variable was a significant predictor, but the

model as a whole was significant, accounting for 9% of the variance in depressive

symptomatology.

Mediation or Moderation

     Having identified statistically significant predictors in the first set of multiple

regression equations, the final step in the statistical analysis is to test whether coping

(either adaptive or maladaptive) is a mediator or moderator between significant illness-

related stressors and family member outcomes. As significant correlations among the

variables (stressor, moderator, and outcome) are a prerequisite for the mediation

hypothesis to hold, variables having the necessary correlations with one another were

chosen for examination with respect to the possible role of coping as a mediator or

moderator. The sets of variables meeting these inclusion criteria are: a) client behavior

problems, adaptive coping, and the Worry subscale; b) client behavior problems,

maladaptive coping, and the Stigma subscale; c) client behavior problems, maladaptive

coping, and the Displeasure subscale; d) client behavior problems, maladaptive coping,

and the Impact subscale; and e) extent of client's drug or alcohol use, maladaptive

coping, and the Impact subscale. No significant predictor variables were found related to

depressive symptomatology or physical health.

     To test mediation, three regression equations were estimated for each set of

variables as described by Baron and Kenny (1986). To test whether a variable functions

as a moderator the independent variable and the proposed moderator 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. A statistically significant increase in R^2 after the addition of the interaction term indicates a moderation effect. Among the sets of variables included in the analysis, three met criteria for coping as a partial mediator, one met criteria for complete mediation, and one met criteria as a moderator. Results of these regressions are shown in Tables 18 through 27.

Findings for Research Questions and Hypotheses

Research Question #2: Does greater family member use of adaptive or maladaptive coping strategies mediate or moderate the impact of illness-related stressors on family member well-being?

Hypothesis VI: The relationship between family member stressors and family member well-being is mediated by family member adaptive coping. Greater illness-related stressors are associated with lower levels of adaptive family member coping and lower family member well-being.

Findings Hypothesis VI: Findings did not support this hypothesis. Adaptive coping was correlated with both a predictor variable and an outcome variable in only one instance. However, family member adaptive coping was not correlated in the hypothesized direction. Contrary to expectations, the findings indicate that as illness-related stressors increase, family member adaptive coping and family member Worry also increase. Family member adaptive coping functions as a partial mediator between client behavior problems and family member Worry (Table 18). 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 ≤ .01), using

emotional support (.421, p ≤ .01), and using instrumental support (.265, p ≤ .05). One

maladaptive coping subscale, self-distraction, was also correlated with Worry (.273, p ≤

.05).

Hypothesis VII: The relationship between family member stressors and family

member well-being is mediated by family member maladaptive coping. Greater illness-

related stressors are associated with higher levels of maladaptive family member coping

and lower family member well-being.

Findings Hypothesis VII: This hypothesis was supported by findings that family

member maladaptive coping does function as a partial or complete mediator between

illness-related stressors and some types of family member burden. Family member

maladaptive coping completely mediates the relationship between client behavioral

problems and family member Stigma (Table 19). This hypothesis was also tested with

respect to client behavior problems and the Displeasure subscale (Table 20). However,

maladaptive coping was not found to mediate this relationship. Family member

maladaptive coping was found to function as a partial mediator between client behavior

problems and family member Impact (Table 21) and extent of client drug or alcohol use

and family member Impact (Table 22).

Findings related to coping as a mediator may be further explained by examining

correlations between adaptive or maladaptive coping subscales and mediated outcomes.

The Stigma outcome found to be completely mediated by maladaptive coping was

associated with one adaptive coping subscale, using emotional support (.352, p ≤ .01),

and three maladaptive coping subscales, self-distraction (.319, p ≤ .01), denial (.317, p ≤

.01), and self-blame (.221, p ≤ .05). 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 ≤ .01), venting (.371, p ≤ .01), substance use (.278, p ≤ .05), behavioral disengagement (.264, p ≤ .05), and self-blame (.329, p ≤ .01).

Hypothesis VIII: Alternatively, the relationship between family member stressors and family member well-being is moderated by family member adaptive coping. Specifically, the effect of stressors on family member burden, depressive symptoms, and physical health will be stronger when adaptive coping is lower. Similarly, among persons with high adaptive coping, the effects of stressors on family member burden, depressive symptoms, and physical health will be weaker.

Findings Hypothesis VIII: The set of variables previously tested for adaptive coping as a hypothesized mediator was tested to determine whether adaptive coping could be better understood as a moderator. No support was found for the role of adaptive coping as a moderator between illness-related stressors and family member well-being. Table 23 shows the non-significant results of testing family member adaptive coping as a possible moderator between client behavioral problems and family member Worry.

Hypothesis IX: The relationship between family member stressors and family member well-being is moderated by family member maladaptive coping. Specifically, the effect of stressors on family member burden, depressive symptoms, and physical health will be stronger when maladaptive coping is higher. Similarly, among persons with low maladaptive coping, the effects of stressors on family member burden, depressive symptoms, and physical health will be weaker.

Findings Hypothesis IX: All sets of variables previously tested for maladaptive coping as a hypothesized mediator were tested to determine whether maladaptive coping could be better understood as a moderator. Family member maladaptive coping was not found to function as a moderator between client behavioral problems and family member Stigma (Table 24), client behavioral problems and family member Displeasure (Table 25), or client behavioral problems and family member Impact (Table 26). The alternative hypothesis that maladaptive coping functions as a moderator between stressors and family member well-being is supported in one instance. Family member maladaptive coping was found to function as a moderator between extent of client drug/alcohol use and family member Impact (Table 27). As maladaptive coping was previously found to mediate between the same variables (Table 22), the findings suggest that maladaptive coping functions as both a mediator and moderator in this case.

Table 1

Women's Current Substance Use (N = 82)

Substance	Dependence		Abuse	
	n	%	n	%
Cocaine	45	(55.6)	3	(3.7)
Alcohol	41	(50.6)	11	(13.6)
Marijuana	22	(27.2)	12	(14.8)
PCP	7	(8.6)	2	(2.5)
Opiates	4	(4.9)	--	
Sedatives	1	(1.2)	--	
Hallucinogens	--		--	
Inhalants	--		--	
Amphetamines	--		--	

Source: C-DIS

Table 2

Women's Current Psychiatric Disorders in Addition to Substance Use Disorder (N = 82)

	n	%
Current Dual Disorder	46	(56.1)
Major Depression	33	(40.2)
Posttraumatic Stress Disorder	23	(28.0)
Mania	18	(22.0)
Generalized Anxiety Disorder	11	(13.4)
Hypomania	3	(3.7)
Dysthymia	2	(2.4)

Source: C-DIS

Table 3

Illness-Related Stressors (N = 82)

	n	M	SD	Actual Range	Potential Range	α
Cl. Behav. Probs. (F)	82	89.76	47.09	2 to 194	0 to 232 (low to high)	.97
Cl. Trtmt. Motivation (C):						
-Problem Recognition	82	36.68	7.98	10 to 45	9 to 45 (higher=more)	.88
-Treatment Readiness	82	33.91	4.66	18 to 40	8 to 40 (higher=more)	.74
-Desire for Help	82	31.62	4.41	13 to 35	7 to 35 (higher=more)	.83
Client Substance Use (F):						
-Frequency	80	2.05	1.52	0 to 4	0 to 4 (higher=greater)	--
-Extent	82	1.68	1.28	0 to 3	0 to 3 (higher=greater)	--
Client Institutional Status:						
-Hosp. Drug/Alc. (F)	80	.26	.44	0 to 1	0 to 1 (1=yes)	--
-Hosp. Emo. (F)	80	.16	.37	0 to 1	0 to 1 (1=yes)	--
-Been Arrested (C)	82	.20	.40	0 to 1	0 to 1 (1=yes)	--
-Jail or Prison (C)	80	.19	.39	0 to 1	0 to 1 (1=yes)	--
Cl. Curr. Dual (C/C-DIS)	81	.56	.50	0 to 1	0 to 1 (1=yes)	--

Data Source:

F – Family Member Interview

C – Client Interview

C/C-DIS – Client Diagnostic Interview

Table 4

Family Member Adaptive Coping with Subscales and Sample Items (N = 82)

	N	M	SD	Actual Range	Potential Range	α
Adaptive Coping Scale	82	26.32	8.07	5 to 46	0 to 48 (high=more)	.78

- Active Coping: "I concentrate my efforts on helping my family member to do something about her problems."

- Planning: "I try to come up with a strategy about what to do."

- Positive Reframing: "I look for something good in this situation."

- Acceptance: "I accept the reality of the fact that my family member is using alcohol or drugs."

- Humor: "I make jokes about it."

- Religion: "I pray or meditate about the situation."

- Using Emotional Support: "I try to get emotional support from friends or relatives about my family member's drug or alcohol use."

- Using Instrumental Support: "I ask people who have had similar experiences with their family members what they did."

Table 5

Family Member Maladaptive Coping with Subscales and Sample Items (N = 82)

	N	M	SD	Actual Range	Potential Range	α
Maladaptive Coping Scale	82	11.34	5.77	0 to 26	0 to 36 (high=more)	.70

- Self-Distraction: "I turn to work or other activities to take my mind off this problem."

- Denial: "I say to myself, 'This isn't really happening.'"

- Venting: "I say things to let my unpleasant feelings escape."

- Substance Use: "I use alcohol or drugs to make myself feel better."

- Behavioral Disengagement: "I give up trying to deal with my family member."

- Self-Blame: "I blame myself for things that happened."

Table 6

Family Member Outcomes (N = 82)

	N	M	SD	Actual Range	Potential Range	α
Burden:						
-Worry	82	18.30	6.30	3 to 28	0 to 28 (low to high)	.79
-Stigma	82	8.96	8.84	0 to 33	0 to 36 (low to high)	.89
-Displeasure	82	20.70	5.70	8 to 32	8 to 32 (low to high)	.90
-Impact	82	4.90	3.93	0 to 15	0 to 16 (low to high)	.79
Health:						
-Depressive Symptomatology	82	13.51	9.38	0 to 41	0 to 60 (low to high)	.85
-Overall Health	82	3.04	1.10	1 to 5	1 to 5 (poor-excellent)	--

Table 7

Hypothesis I – Client Behavioral Problems and Family Member Outcomes - Correlations
(N = 82)

	-Client--	----------------------Family Member-------------------------						
	Behavior	Worry	Stigma	Displeas	Impact	CES-D	Health	Gender
Cl. Behav.	1							
FM Worry	.531**	1						
FM Stigma	.265*	.331**	1					
FM Displeas.	.541**	.477**	.355**	1				
FM Impact	.432**	.370**	.467**	.584**	1			
FM CES-D	.220*	.176	.182	.139	.093	1		
FM Health	-.067	-.103	-.052	-.045	-.016	-.397**	1	
FM Gender	.059	.163	-.241*	.145	-.084	.042	-.109	1
FM Sig. Oth.	-.082	-.188	.224*	-.236*	.077	.005	.192	-.777**

** Correlation is significant at the 0.01 level (2-tailed).
*   Correlation is significant at the 0.05 level (2-tailed).

Note: Family Member Gender was coded 1 = male, 2 = female; Family Member
          Significant Other was coded no = 0, yes = 1. Significant others of the women
          in treatment were predominantly male.

Table 8

Hypothesis II – Client Treatment Motivation and FM Outcomes - Correlations (N = 81)

	Treat. Ready	Desire Help	Prob. Recog.	Worry	Stigma	Displs.	Impact	CES-D	Health	Gender
	--Client Treat. Motivation--			--------------Family Member------------------------------						
Cl. Treat. Ready	1									
Cl. Desire Help	.570**	1								
Cl. Prob. Recog.	.500**	.851**	1							
FM Worry	.065	.288**	.250*	1						
FM Stig.	-.015	.136	-.049	.326**	1					
FM Displs.	.110	.380**	.355**	.472**	.352**	1				
FM Impact	-.093	.180	.095	.371**	.467**	.584**	1			
FM CES-D	.012	-.038	-.058	.186	.185	.142	.094	1		
FM Health	-.038	-.065	-.035	-.122	-.059	-.053	-.019	-.396**	1	
FM Gender	-.097	.105	.124	.181	-.237*	.152	-.082	.039	-.100	1
FM Sg. Oth.	.036	-.138	-.175	-.204	.220*	-.243*	.076	.008	.186	-.775**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Note: Family Member Gender was coded 1 = male, 2 = female; Family Member
       Significant Other was coded no = 0, yes = 1. Significant others of the women
       in treatment were predominantly male.

Table 9

Hypothesis III – Frequency and Extent of Client Drug/Alcohol Use and FamilyMember Outcomes - Correlations (N = 80)

	------Client--------		--------------------Family Member--------------------------------						
	Freq. DA Use	Extent DA Use	Worry	Stigma	Displeas.	Impact	CES-D	Health	Gender
Freq. Cl. DA Use	1								
Extent Cl. DA Use	.830**	1							
FM Worry	.244*	.307**	1						
FM Stigma	.220	.302**	.333**	1					
FM Displeas.	.114	.268*	.470**	.360**	1				
FM Impact	.247*	.402**	.362**	.477**	.576**	1			
FM CES-D	.149	.176	.176	.183	.140	.088	1		
FM Health	-.016	.024	-.112	-.052	-.060	-.029	-.399**	1	
FM Gender	-.090	-.071	.161	-.244*	.139	-.084	.051	-.119	1
FM Sig. Oth.	.259*	.211	-.187	.226*	-.233*	.077	-.002	.201	-.774**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Data Source: Frequency and extent of client drug or alcohol use are as reported by family members.

Note: Family Member Gender was coded 1 = male, 2 = female; Family Member Significant Other was coded no = 0, yes = 1. Significant others of the women in treatment were predominantly male.

Table 10

Hypothesis IV – Client History of Arrest, Incarceration, Hospitalization for Drug/Alcohol, Hospitalization for Emotional Problems and Family Member Outcomes - Correlations (N = 77)

| | ------------Client------------- | | | --------------------Family Member---------------------- | | | | | | | |
	Arrest	Jail/ Prison	Hosp. DA	Hosp. Emo.	Worry	Stigma	Displs.	Impact	CES-D	Health	Gender
Cl. Arrest	1										
Cl. Jail/ Prison	.917**	1									
Cl. Hosp. DA	.023	.023	1								
Cl. Hosp. Emo.	-.031	-.031	.252*	1							
FM Worry	.269*	.236*	.199	.097	1						
FM Stigma.	.159	.249*	.115	-.002	.272*	1					
FM Displeas.	.184	.225*	.287*	-.026	.444**	.344**	1				
FM Impact	.293**	.293**	.216	.038	.333**	.458**	.565**	1			
FM CES-D	.089	.123	.164	-.092	.135	.150	.120	.072	1		
FM Health	.071	.101	-.101	-.015	-.095	-.031	-.055	-.030	-.409**	1	
FM Gender	-.184	-.118	-.006	.072	.192	-.251*	.159	-.076	.074	-.089	1
FM Sig. Oth.	.219	.219	-.140	.008	-.209	.239*	-.255*	.073	-.021	.176	-.766**

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Data Source: Data on client hospitalization for drug or alcohol problems or for emotional problems are from the family member interview; data on client history of arrest, jail or prison are from the client interview.

Note: Family Member Gender was coded 1 = male, 2 = female; Family Member Significant Other was coded no = 0, yes = 1. Significant others of the women in treatment were predominantly male.

Table 11

Hypothesis V – Client Dual Disorder and Family Member Outcomes – Correlations (N = 81)

	-Client-- Dual Disorder	Worry	Stigma	Displeas.	Impact	CES-D	Health	Gender
Cl. Dual Disorder	1							
FM Worry	.175	1						
FM Stigma	-.034	.326**	1					
FM Displs	.049	.473**	.342**	1				
FM Impact	.052	.366**	.461**	.580**	1			
FM CES-D	.226*	.184	.199	.156	.103	1		
FM Health	-.038	-.103	-.052	-.045	-.016	-.400**	1	
FM Gender	.162	.174	-.227*	.167	-.073	.029	-.110	1
FM Sg. Oth	-.094	-.184	.237*	-.228*	.085	-.003	.192	-.797**

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Data Source – Client Dual Disorder: C-DIS

Note: Family Member Gender was coded 1 = male, 2 = female; Family Member Significant Other was coded no = 0, yes = 1. Significant others of the women in treatment were predominantly male.

Table 12

Summary of Significant Correlations from Previous Tables – Illness-Related Stressors and Family Member Outcomes

---Stressors-----	------------------------Family Member Outcomes --------------------					
	Worry	Stigma	Displeas.	Impact	CES-D	Health
Client Behavior Problems (F) (N = 82)	.531**	.265*	.541**	.432**	.220*	-.067
Treatment Ready (C)	.065	-.015	.110	-.093	.012	-.038
Desire for Help (C)	.288**	.136	.380**	.180	-.038	-.065
Prob. Recognition (C) (N = 81)	.250*	-.049	.355**	.095	-.058	-.035
Freq. DA Use (F)	.244*	.220	.114	.247*	.149	-.016
Extent DA Use (F) (N = 80)	.307**	.302**	.268*	.402**	.176	.024
Arrested (C)	.269*	.159	.184	.293**	.089	.071
Jail/Prison (C)	.236*	.249*	.225*	.293**	.123	.101
Hospital DA (F)	.199	.115	.287*	.216	.164	-.101
Hospital Emo. (F) (N = 77)	.097	-.002	-.026	.038	-.092	-.015
Dual Disorder (C) (N = 81)	.175	-.034	.049	.052	.226*	-.038

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Data Source:
F – Family Member Interview
C – Client Interview (Data on dual disorder is from C-DIS)

Table 13

Multiple Regression Family Member Burden – Worry Subscale (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.060***	.014	.446
Treatment Motivation – Desire for Help	.135	.145	.094
Extent of Client's Drug/Alcohol Use	.555	.536	.113
Client Ever Been Arrested	1.065	1.707	.067

R^2 .32***
F   8.881 (df = 81)

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

Table 14

Multiple Regression Family Member Burden – Stigma Subscale (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.041*	.021	.221
Extent of Client's Drug/Alcohol Use	1.309	.773	.190
FM is Client's Significant Other	3.882	2.018	.206

R^2 .16**
F 5.009 (df = 81)

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

Table 15

Multiple Regression Family Member Burden – Displeasure Subscale (N = 80)

Variable	B	SEB	β
Client Behavior Problems	.051***	.014	.411
Treatment Motivation – Desire for Help	.231	.131	.181
Extent of Client's Drug/Alcohol Use	.614	.449	.137
Client Ever Hospitalized Drug/Alcohol Problems	.061	1.400	.005
FM is Client's Significant Other	-2.521*	1.165	-.208

R^2 .37***
F 8.794 (df = 79)

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

Table 16

Multiple Regression Family Member Burden – Impact Subscale (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.027**	.009	.329
Extent of Client's Drug/Alcohol Use	.703*	.344	.230
Client Ever Been Arrested	1.119	1.086	.114

R^2 .26***
F   9.399 (df = 81)

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

Table 17

Multiple Regression Family Member Depressive Symptomatology (CES-D) (N = 81)

Variable	B	SEB	β
Client Behavior Problems	.042	.022	.209
Client's Current Dual Disorder	3.817	2.042	.203

R^2 .09*
F   4.054 (df = 80)

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

Table 18

Family Member Adaptive Coping as Mediator
Between Client Behavior Problems and Family Member Worry

First Equation: Effect of Client Behavior Problems on Family Member Worry (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.071***	.013	.531

R^2 .282***
F 31.478 (df = 81)

Second Equation: Effect of Client Behavior Problems on Family Member Adaptive Coping (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.042*	.019	.243

R^2 .059*
F 5.027 (df = 81)

Third Equation: Effect of Adaptive Coping on Family Member Worry with Behavior Problems Controlled (N = 82)

Variable	B	SEB	β
Family Member Adaptive Coping	.199**	.073	.254
Client Behavior Problems	.063***	.013	.470

R^2 .343***
F 20.636 (df = 81)

---

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

Table 19

Family Member Maladaptive Coping as Mediator
Between Client Behavior Problems and Family Member Stigma

First Equation: Effect of Client Behavior Problems on Family Member Stigma (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.050*	.020	.265
R^2 .070*			
F 6.036 (df = 81)			

Second Equation: Effect of Client Behavior Problems on Family Member Maladaptive Coping (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.036**	.013	.290
R^2 .084**			
F 7.350 (df = 81)			

Third Equation: Effect of Family Member Maladaptive Coping on Family Member Stigma with Client Behavior Problems Controlled (N = 82)

Variable	B	SEB	β
Family Member Maladaptive Coping	.601***	.160	.393
Client Behavior Problems	.028	.020	.151
R^2 .211***			
F 10.584 (df = 81)			

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

Table 20

Family Member Maladaptive Coping as Mediator between
Client Behavior Problems and Family Member Displeasure

First Equation: Effect of Client Behavior Problems on Family Member Displeasure
(N = 82)

Variable	B	SEB	β
Client Behavior Problems	.065***	.011	.541

R^2 .292***
F 33.019 (df = 81)

Second Equation: Effect of Client Behavior Problems on Family Member Maladaptive
Coping (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.036**	.013	.290

R^2 .084**
F 7.350 (df = 81)

Third Equation: Effect of Maladaptive Coping on Family Member Displeasure
with Client Behavior Problems Controlled (N = 82)

Variable	B	SEB	β
Family Member Maladaptive Coping	.168	.096	.170
Client Behavior Problems	.059***	.012	.491

R^2 .319***
F 18.480 (df = 81)

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

Table 21

Family Member Maladaptive Coping as Mediator between
Client Behavior Problems and Family Member Frequency of Impacts

First Equation: Effect of Client Behavior Problems on Family Member Frequency of
Impacts (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.036***	.008	.432
R^2 .186***			
F 18.316 (df = 81)			

Second Equation: Effect of Client Behavior Problems on Family Member Maladaptive
Coping (N = 82)

Variable	B	SEB	β
Client Behavior Problems	.036**	.013	.290
R^2 .084**			
F 7.350 (df = 81)			

Third Equation: Effect of Family Member Maladaptive Coping on Family Member
Frequency of Impacts with Client Behavior Problems Controlled (N = 82)

Variable	B	SEB	β
Family Member Maladaptive Coping	.321***	.063	.471
Client Behavior Problems	.025**	.008	.295
R^2 .389***			
F 25.200 (df = 81)			

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

Table 22

Family Member Maladaptive Coping as Mediator between
Extent of Client Drug/Alcohol Use and Family Member Frequency of Impacts

First Equation: Effect of Extent of Client Drug/Alcohol Use on
Family Member Frequency of Impacts (N = 82)

Variable	B	SEB	β
Extent of Client Drug/Alcohol Use	1.185***	.315	.387

R^2 .150***
F 14.122 (df = 81)

Second Equation: Effect of Extent of Client Drug/Alcohol Use on
Family Member Maladaptive Coping (N = 82)

Variable	B	SEB	β
Extent of Client Drug/Alcohol Use	1.352**	.479	.301

R^2 .091**
F 7.974 (df = 81)

Third Equation: Effect of Family Member Maladaptive Coping on Family Member
Frequency of Impacts with Extent of Client Drug/Alcohol Use Controlled (N = 82)

Variable	B	SEB	β
Family Member Maladaptive Coping	.329***	.064	.484
Extent of Client Drug/Alcohol Use	.739*	.288	.242

R^2 .363***
F 22.501 (df = 81)

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

Table 23

Family Member Adaptive Coping as Moderator between Client Behavioral Problems and Family Member Worry (N = 82)

Variables	R^2 Change	Sig.	Cum. R^2
FM Adaptive Coping (Centered)	.136**	.001	.136
Client Behavioral Problems (Centered)	.207***	.000	.343
Client Behavioral Problems x Adaptive Coping	.001	.773	.344

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

Table 24

Family Member Maladaptive Coping as Moderator between Client Behavioral Problems and Family Member Stigma (N = 82)

Variables	R^2 Change	Sig.	Cum. R^2
FM Maladaptive Coping (Centered)	.190***	.000	.190
Client Behavioral Problems (Centered)	.021	.152	.211
Cl. Behavioral Probs. x Maladaptive Coping	.013	.262	.224

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

Table 25

Family Member Maladaptive Coping as Moderator between Client Behavioral Problems and Family Member Displeasure (N = 82)

Variables	R^2 Change	Sig.	Cum. R^2
FM Maladaptive Coping (Centered)	.098**	.004	.098
Client Behavioral Problems (Centered)	.221***	.000	.319
Cl. Behavioral Probs. x Maladaptive Coping	.031	.057	.350

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

Table 26

Family Member Maladaptive Coping as Moderator between Client Behavioral Problems and Family Member Frequency of Impacts (N = 82)

Variables	R^2 Change	Sig.	Cum. R^2
FM Maladaptive Coping (Centered)	.310***	.000	.310
Client Behavioral Problems (Centered)	.080**	.002	.389
Cl. Behavioral Probs. x Maladaptive Coping	.003	.566	.392

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

Table 27

Family Member Maladaptive Coping as Moderator between Extent of Client Drug/Alcohol Use and Family Member Frequency of Impacts (N = 82)

Variables	R^2 Change	Sig.	Cum. R^2
FM Maladaptive Coping (Centered)	.310***	.000	.310
Extent of Client Drug/Alcohol Use (Centered)	.053*	.012	.363
Extent Drug/Alcohol x Maladaptive Coping	.052*	.010	.415

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

Chapter 6: Conclusions and Implications

This investigation furthers understanding of the impact of substance use or dual disorders on relatives of women in treatment and helps to explain how family member coping efforts affect outcomes. Findings support the validity of the stress-coping model as a way to conceptualize family member responses to a relative's illness. Results replicate some findings from prior research on family member burden. They are also consistent with non-blaming theoretical approaches found in recent research on family interventions for substance abuse or psychiatric disorders. Although this exploratory study has limitations, it does have implications for theory and for the design and delivery of services related to family members of women with substance use or dual disorders.

Review of Findings

Research Question #1:

What is the impact of illness-related stressors (client behavioral problems, client treatment motivation, client substance use, client institutional status, and client dual disorder) on well-being (burden, depressive symptoms, and physical health) of family members of persons with a substance use disorder or co-occurring substance use and mental disorders?

In general, the illness-related stressors were related to family member well-being in the hypothesized directions, with client behavioral problems the most consistent predictor of poorer family member outcomes. Behavioral problems were related to higher family member burden (Worry, Stigma, Displeasure, and Impact) and family member depressive symptomatology. In the bivariate analysis, client treatment motivation, frequency and extent of drug or alcohol use, arrest, and hospitalization for drugs or

alcohol were also significantly associated with family member burden. Client dual disorder was significantly associated with family member depressive symptomatology at the bivariate level. None of the illness-related stressors were significantly associated with family member physical health. An unanticipated finding was that higher client treatment motivation (desire for help and problem recognition) was associated with higher family member Worry and Displeasure. This finding is the inverse of the hypothesized direction for the relationship between client treatment motivation and family member burden. In the multivariate analysis, only client behavioral problems and extent of client drug or alcohol use remained signficantly related to family member outcomes; greater client behavioral problems predicted higher family member Worry, Stigma, Displeasure, and Impact and greater extent of client drug or alcohol use predicted greater family member Impact.

Research Question #2:

Does greater family member use of adaptive or maladaptive coping strategies mediate or moderate the impact of illness-related stressors on family member well-being? Findings with respect to adaptive coping did not support the hypotheses that adaptive coping mediates the relationship between illness-related stressors and family member well-being. Family member adaptive coping does function as a partial mediator between client behavior problems and family member Worry, but increases in adaptive coping are associated with a greater amount of family member Worry, rather than less Worry as hypothesized. Maladaptive coping, however, was found to mediate the relationship between illness-related stressors and family member well-being. Family member maladaptive coping completely mediates the relationship between client behavioral

problems and Stigma, and maladaptive coping also partially mediates the relationships between client behavior problems and Impact and between extent of client drug or alcohol use and Impact. No support was found for the role of adaptive coping as a moderator, and maladaptive coping functioned as a moderator in only one instance. Maladaptive coping was a moderator (as well as a mediator) between extent of client drug or alcohol use and family member Impact.

Findings in Relationship to the Literature

This study replicates previous findings that client behavior problems are the most important predictor of family member burden (Biegel & Schulz, 1999; Song, Biegel, & Milligan, 1997; O'Farrell & Fals-Stewart, 2000; Clark, 2001). The other illness-related stressors (client treatment motivation, frequency and extent of drug or alcohol use, arrest, and hospitalization for drugs or alcohol) associated with negative family member outcomes appear more directly related to client alcohol or drug use than to the presence of a dual disorder. Reasons for this conclusion are that the treatment motivation variable refers to substance abuse treatment, arrest is a frequent outcome of drug or alcohol use, and the extent of drug or alcohol use and hospitalization for drugs or alcohol variables are explicitly related to alcohol or drug use. This is consistent with research documenting the negative impact of substance use disorders on family members (O'Farrell & Fals-Stewart, 2000).

The association found by previous researchers between illness-related stressors and poorer family member physical health (Stowell, Kiecott-Glaser, & Glaser, 2001; Schulz, O'Brien, Bookwala, & Fleissner, 1995; Schulz & Martire, 2004) was not replicated in this study. However, findings that both client problem behavior and client

dual disorder are associated with increased family member depressive symptomatology at the bivariate level are consistent with prior observations that drug or alcohol use exacerbates problem behavior among persons with psychiatric disorders (Drake & Mueser, 2000). Findings that these illness-related stressors are specifically related to family member depressive symptomatology accord with the work of previous researchers (e.g., Song, Biegel, & Milligan, 1997), and are important in light of the very high rates of depression among women and even higher rates among low income women (Yee & Schulz, 2000; Kessler, 2003; Bassuk, Buckner, Perloff, & Bassuk, 1998).

Although no associations between stressors and family member physical health were found, a significant correlation between higher family member depressive symptomatology and poorer physical health was noted. Findings that client problem behavior and client dual disorder are associated with family member depressive symptomatology suggests a possible pathway for client illness to affect family member physical health. Stressors may trigger depression which may predispose family members to increased physical health problems.

The unanticipated finding in the bivariate analysis that higher client treatment motivation (desire for help and problem recognition) is associated with higher, rather than lower, family member Worry and Displeasure is interesting because of the role family members may play in interventions to treat substance use or dual disorders. In the context of intervention, family members are often called upon to reinforce positive behaviors or to help motivate clients to engage in treatment (Sisson & Azrin, 1986; Barrowclough et al., 2001; Meyers, Apodaca, Flicker, & Slesnick, 2002). The finding that greater client treatment motivation is associated with greater family member Worry

and Displeasure suggests that some forms of family member distress may have positive aspects. The findings can be interpreted to mean that family Worry and Displeasure related to drinking or drug use can sometimes help clients realize that a problem exists and motivate them to seek help.

Overall, findings on coping as a mediator in the present study support the conceptualization of Carver, Scheier, and Weintraub (1989) that certain responses to stress can be understood as maladaptive coping because they are consistently associated with negative outcomes. By contrast, adaptive coping as conceptualized by these researchers appears to have much less impact than maladaptive coping on family member well-being. In the one instance where adaptive coping mediated a relationship between stressors and family member outcomes, it was associated with greater family member Worry, rather than less. Worry was associated with one maladaptive coping dimension (self-distraction), but was also associated with three adaptive coping dimensions: planning, using emotional support, and using instrumental support. This suggests that some degree of family member Worry may be desirable because of its relationship to adaptive coping.

This study hypothesized that adaptive and maladaptive coping would not be associated with illness-related stressors in the same direction: adaptive coping would decrease and maladaptive coping would increase as stressors increased. This hypothesis was not supported by the findings. However, the findings are consistent with stress-coping theory as described by Lazarus and Folkman (1984). Those theorists proposed that all forms of coping are efforts to manage specific demands. Within that framework, adaptive and maladaptive coping may both increase in response to a stressful situation, as

they are seen to do in the present study. However, findings of this investigation also suggest that maladaptive coping increased more readily in response to stress and was the more powerful mediator of outcomes.

Implications for Theory

A major implication of the finding that family member maladaptive coping mediates between illness-related stressors and family member outcomes is that it supports the position of theorists (e.g., Rotunda & Doman, 2001) who propose that maladaptive behavior occurs in families as a normal response to a stressful situation. Statistical tests demonstrating mediation support a causal model in which maladaptive coping increases in response to stress. This suggests that family members were not necessarily dysfunctional enablers or codependents prior to exposure to the illness-related stressors. The model also helps to explain how the stressors result in negative outcomes for family members: stressors lead to increased maladaptive coping and, in turn, to poorer family member outcomes.

In addition, the subscales of maladaptive coping that appear to mediate the relationship between illness-related stressors and family member burden overlap conceptually with constructs that have been investigated in relation to client recovery. The venting dimension of maladaptive coping ("I say things to let my unpleasant feelings escape") bears a strong resemblance to the high expressed emotion construct (family member criticism, hostility, overinvolvement) that has been shown to be associated with relapse of persons with alcohol dependence, schizophrenia, mood disorders, PTSD, and anorexia (O'Farrell, Hooley, Fals-Stewart, and Cutter, 1998; Bebbington & Kuipers, 1994; Vaughn & Leff, 1976; Hooley, Orley, & Teasdale, 1986; Miklowitz, Goldstein,

Nuechterlein, Snyder, & Mintz, 1988; Miklowitz et al., 2000; Tarrier, Sommerfield, & Pilgrim, 1999; Butzlaff & Hooley, 1998).

Substance use by family members of people in treatment for substance use disorders is another dimension of maladaptive family member coping found in the present study to be associated with negative family member outcomes. Although very few family members met C-DIS diagnostic criteria for current substance use disorders, family members did report drinking to cope as a response to their relative's substance use or mental disorder, and family member drinking to cope was associated with greater reported frequency of Impact from the diagnosed relative's illness. These findings are consonant with previous research. In prior studies, drinking to cope has been found to be a negative prognostic indicator associated with negative outcomes for persons using this coping strategy. For example, drinking to cope has been found to be associated with future problematic drinking and depressive symptoms (Kjobli et al., 2004; Holahan, Moos, Holahan, & Cronkite, 2003).

In addition to negative implications for the family members, family member use of drugs or alcohol to cope with stressors associated with a diagnosed relative's illness also has implications for client substance abuse treatment outcomes. Family member drinking has been conceptualized by some theorists as an enabling behavior likely to reinforce client drinking (Rotunda, West, & O'Farrell, 2004). Evidence also exists that prognosis is poorer when a person in treatment for a substance use disorder is in an intimate relationship with another drug user (Fals-Stewart, Birchler, & O'Farrell, 1999).

Implications for Practice, Research, and Policy

Implications for practice are that clinicians need not assume that family members are a threat to the recovery of clients in treatment. Rather, family support is often helpful to clients. Also, the needs of family members themselves are an appropriate focus of professional attention because family members are at risk for increased burden and health consequences as a result of their exposure to a relative's illness. Clinicians need to be aware that family members of persons with substance use or co-occurring disorders are at greater risk for depression. Professionals can help to educate family members about the impact of family coping efforts on family member well-being and client recovery. Family members should also be encouraged to think that their constructive efforts can have a positive impact. Family member cognitive appraisals that they can do nothing to change the situation for the better may be associated with increased use of maladaptive coping behavior.

Findings that family member self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame are all associated with poorer family member outcomes may be shared with families. Further, family member worry may be helpful if it encourages more planning and seeking emotional and instrumental support. Families should be encouraged to refrain from venting negative feelings in the presence of an ill relative. Instead, a therapist or support group may provide a safer venue for expression of these emotions. The issue of family member drinking or drug use also needs to be explored. If family members are reluctant to refrain from drinking (or using drugs) in their relative's presence, clinicians should consider the possibility that the family member also has a substance use problem. More services need to be available to directly address

the needs of family members whether or not an ill relative is receiving treatment. Further, treatment programs for substance use and psychiatric problems need to offer family interventions that promote better outcomes for both clients and family members. Policies that make services more accessible for family members may help to alleviate family member distress, promote stable client recovery, and minimize institutionalization and other service use.

Limitations of the Study and Future Research

This exploratory study is limited by a small, non-random sample (N = 82), a correlational design, and measurement issues. The sample included women currently in treatment for a substance use disorder and a supportive relative. Although a high rate of eligible subjects agreed to participate in the study, the findings cannot be generalized to other family members of substance-abusing women not in current treatment. Further limitations are that the study was conducted in one mid-western community and the data are cross-sectional. Therefore, findings may not be relevant in other contexts, and time order and causation cannot be established.

As explained by Baron and Kenny (1986), the estimation of a mediational model using multiple regression assumes two conditions. The first assumption is that there is no measurement error. The authors go on to point out that mediational variables often represent internal psychological processes and are therefore likely to have measurement error. However, such measurement error is likely to produce an underestimate of the mediator's effects. Therefore, it is possible that the mediation effects noted in this study have been understated.

The second assumption of using multiple regression to test mediational hypotheses is that the dependent variable does not cause the mediator. Within this study, it is possible that some feedback exists from the increased burden experienced by family members. Increased burden may function as an additional stressor that affects family members' ability to cope. However, logically the illness-related stressors temporally precede the increased burden reported by family members. Nonetheless, the correlational design and the possibility of reverse causality are major limitations that need to be addressed in future research. Controlled longitudinal studies can be used to clarify problems related to time order and possible feedback effects of additional burden on family member coping. Furthermore, since family member reports are used for both illness-related stressors and family member outcomes, it is possible that family member perceived burden both increases use of family member maladaptive coping and colors family member assessments of client illness-related behaviors. Increased burden from multiple sources, not just from stressors related to a relative's illness, may be affecting family member perception of burden and ability to cope. To address these problems in future studies, family member assessments of client behavior need to be cross-validated with data from other sources and other possible sources of family member stress need to be controlled.

The correlational study design, issues of time order, and lack of control of covariates limit support for specific interpretations of other findings presented here. For example, the suggestion that higher family member Worry and Displeasure may be related to higher client treatment motivation (problem recognition and desire for help) is very tentative because clients reported current treatment motivation, whereas family

member Worry and Displeasure were reported for the 12 month time period immediately preceding the interview. Therefore, it is not possible to know whether previous family member Worry/Displeasure or some other variable, such as currently being in treatment, is affecting client treatment motivation. It is also possible that both family member Worry/Displeasure and client treatment motivation increase in response to a third variable or variables reflecting a generally worsening situation with more severe consequences. Examples of other variables related to symptom severity are client arrest, imprisonment, or hospitalization. Future research might look at the possible contribution of family factors in client treatment motivation controlling for these other types of negative consequences.

Another important goal for future research is the development of measures with improved reliability and validity for this population. To this end, measures of family member coping could be included in protocols with measures of relevant constructs from previous research, such as enabling, expressed emotion, anger, and family functioning. Findings on the various measures can then be compared in an effort to isolate components of effective family coping in the context of these illnesses.

The adaptive coping scale had acceptable internal consistency (Cronbach's alpha = .78). However, the specific validity of the adaptive coping construct used in the Brief COPE may need further work for use with this population. Family members may have a different understanding of the scale items, which might help to explain why adaptive coping was not found to be a mediator between illness-related stressors and family member outcomes. For example, the active coping dimension, "I take action to try to solve my family member's problems," is more complex because the problem belongs to

the ill relative and not the family member who is trying to cope. Frequently, family members are advised that they can do nothing to change their ill relative's behavior. While it is true that family members cannot change their relative's behavior directly, the reinforcements they offer and the ways they respond to the situation do matter. However, making the necessary positive changes is often difficult and counterintuitive, and may require knowledge of specialized techniques, such as motivational interviewing or community reinforcement. Families may conclude that their efforts are useless before any potentially helpful behavioral changes have been implemented. Therefore, scale items should acknowledge the indirect nature of family member influence. Wording such as "I actively encourage my family member to address her problems" might be tried. Family members also experience problems over which they do have some direct control, such as increased family member social isolation related to a relative's illness. Additional scale items might also assess whether family members are actively trying to solve the problems more amenable to change through direct family member action.

Similarly, obtaining effective instrumental support ("I try to get advice from someone about problems I have with my family member") is difficult for this population. A family member who turns to a professional or others in the social network for advice may not be able to locate a person who has specific knowledge of how to proceed constructively when dealing with a relative's substance abuse or dual disorder. Consequently, the family member's ability to come up with an effective plan ("I think hard about what steps to take") may be compromised. As with substance abusers, the quality rather than quantity of the social support offered to family members may be of

critical importance. Instrumental and emotional social support provided to family members needs to reflect a clear understanding of the social dynamic of substance abuse.

Family member acceptance of the reality that a relative's drug or alcohol use is a problem is another dimension of adaptive coping that may have specific meanings for this population. This investigation has found that family member Worry and Displeasure are related to client treatment motivation (problem recognition and desire for help). A possible direction for future research may be to look at the relationship over time between family member problem recognition and problem recognition and treatment motivation of the ill relative. It may be that family member problem recognition precedes client problem recognition and is positively associated with it.

The issue of problem recognition is related theoretically to primary appraisal, the initial perception that a threat exists. The family member's perception that they can do little to change the situation is theoretically related to secondary appraisal and Bandura's concept of self-efficacy. In future research, it will be helpful to measure family member primary and secondary appraisals over time as they relate to specific family member coping efforts.

The maladaptive coping scale also had acceptable internal consistency (Cronbach's alpha = .70). However, maladaptive coping may have been more consistently related to family member outcomes in this study because the maladaptive behaviors described in the scale have greater specific validity and relevance for the study population. Findings that self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame are related to poorer family member outcomes may point the way for further research on specific variables. Although denial of a problem and

subsequent problem recognition have been studied in substance abusers, they have been little studied in relation to family members. As previously discussed, venting may be related to the family member high expressed emotion construct that has been extensively studied and found to be an important variable in various clinical populations. Also, substance use by a family member has received some previous research attention and may be a promising area for further investigation.

References

Almberg, B., Grafstrom, M., & Winblad, B. (1997). Major strain and coping strategies as reported by family members who care for aged demented relatives. *Journal of Advanced Nursing, 26,* 683-691.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Aneshensel, C. S., Pearlin, L. I., & Schuler, R. H. (1993). Stress, role captivity, and the cessation of caregiving. *Journal of Health and Social Behavior, 34,* 54-70.

Arditti, J. A., Lambert-Shute, J., & Joest, K. (2003). Saturday morning at the jail: Implications of incarceration for families and children. *Family Relations, 52,* 195-204.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44,* 1175-1184.

Barber, J. G., & Crisp, B. R. (1995). The Pressures to Change approach to working with the partners of heavy drinkers. *Addiction, 90,* 269-276.

Baron, R. M., & Kenney, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Baronet, A. (1999). Factors associated with caregiver burden in mental illness: A critical review of the research literature. *Clinical Psychology Review, 19,* 819-841.

Barrowclough, C., Haddock, G., Tarrier, N., Lewis, S. W., Moring, J., O'Brien, R., Schofield, N., & McGovern, J. (2001). Randomized controlled trial of motivational interviewing, cognitive behavior therapy, and family intervention for

patients with comorbid schizophrenia and substance use disorders. *American Journal of Psychiatry, 158,* 1706-1713.

Bassuk, E. L., Buckner, J. C., Perloff, J. N., & Bassuk, S. S. (1998). Prevalence of mental health and substance use disorders among homeless and low-income housed mothers. *American Journal of Psychiatry, 155,* 1561-1564.

Bebbington, P., & Kuipers, L. (1994). The predictive utility of expressed emotion in schizophrenia: An aggregate analysis. *Psychological Medicine, 21,* 1-11.

Becker, D. (2000). When she was bad: Borderline personality disorder in a posttraumatic age. *American Journal of Orthopsychiatry, 70,* 422-432.

Beckham, J. C., Lytle, B. L., & Feldman, M. E. (1996). Caregiver burden in partners of Vietnam War veterans with posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 64,* 1068-1072.

Biegel, D. E. (in press). Informal caregiving. In R. Schulz (Ed.), *Encyclopedia of aging* (4th ed.). New York: Springer Publications, Inc.

Biegel, D. E., & Schulz, R. (1999). Caregiving and caregiver interventions in aging and mental illness. *Family Relations, 48*, 345-354.

Biegel, D. E., Milligan, E., Putnam, P., & Song, L. (1994). Predictors of burden among lower socioeconomic status caregivers of persons with chronic mental illness. *Community Mental Health Journal, 30,* 473-494.

Biegel, D. E., Robinson, E. A. R., & Kennedy, M. J. (2000). A review of empirical studies of interventions for families of persons with mental illness. *Research in Community and Mental Health, 11,* 87-130.

Biegel, D. E., Sales, E., & Schulz, R. (1991). *Family Caregiving in Chronic Illness.* Newbury Park: Sage Publications.

Bookwala, J., Zdaniuk, B., Burton, L., Lind, B., Jackson, S., & Schulz, R. (2004). Concurrent and long-term predictors of older adults' use of community-based long-term care services: The caregiver health effects study. *Journal of Aging and Health, 16,* 88-115.

Brook, R. H., Ware, J. E. D., Stewart, A. L., Donald, C. A., Rogers, W. H., Williams, K. N., & Johnson, J. A. (1979). Overview of adult health status measures fielded in Rand's Health Insurance Study. *Medical Care, 17,* 1-119.

Butzlaff, R. L., & Hooley, J. M. (1998). Expressed emotion and psychiatric relapse: A meta-analysis. *Archives of General Psychiatry, 55,* 547-552.

Cannon, W. B. (1932). *The wisdom of the body.* New York: Norton.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the brief COPE. *International Journal of Behavioral Medicine, 4,* 92-100.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56,* 267-283.

Chakrabarti, S., & Gill, S. (2002). Coping and its correlates among caregivers of patients with bipolar disorder: A preliminary study. *Bipolar Disorders, 4,* 50-60.

Chung, T., Langenbucher, J., Labouvie, E., Pandina, R. J., & Moos, R. H. (2001). Changes in alcoholic patients' coping responses predict 12-month treatment outcomes. *Journal of Consulting and Clinical Psychology, 69,* 92-100.

Clark, R. E. (1996). Family support for persons with dual disorders. In R. E. Drake & K. T. Mueser (Eds.), *Dual Diagnosis of Major Mental Illness and Substance Abuse Disorder II: Recent Research and Clinical Implications. New Directions for Mental Health Services* (Vol. 70, pp. 65-77). San Francisco: Jossey-Bass.

Clark, R. E. (2001). Family support and substance use outcomes for persons with mental illness and substance use disorders. Schizophrenia Bulletin, 27(1), 93-101.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd Ed.). Mahwah, NJ: Erlbaum.

Commerford, M. C., Gular, E., Orr, D. A., Reznikof, M., & O'Dowd, M. A. (1994). Coping and psychological distress in women with HIV/AIDS. *Journal of Community Psychology, 22,* 224-230.

Coon, D. W., Thompson, L., Steffen, A., Sorocco, K., & Gallagher-Thompson, D. (2003). Anger and depression management: Psychoeducational skill training interventions for women caregivers of a relative with dementia. *The Gerontologist, 43,* 678-689.

Copello, A., Orford, J., Velleman, R., Templeton, L., & Krishnan, M. (2000). Methods for reducing alcohol and drug related family harm in non-specialist settings. *Journal of Mental Health, 9,* 329-343.

Coyne, J. C., & Racioppo, M. W. (2000). Never the twain shall meet? Closing the gap between coping research and clinical intervention research. *American Psychologist, 55,* 655-664.

Cuijpers, P. (1999). The effects of family interventions on relatives' burden: A meta-analysis. *Journal of Mental Health, 8,* 275-285.

Darwin, C. (1859/2003). *The origin of species.* New York: New American Library.

De Leon, G., Melnick, G., Thomas, G., Kressel, D., & Wexler, H. K. (2000). Motivation for treatment in a prison-based therapeutic community. *American Journal of Drug and Alcohol Abuse, 26,* 33-46.

DiClemente, C. C., Bellino, L. E., & Neavins, T. M. (1999). Motivation for change and alcoholism treatment. *Alcohol Research and Health, 23,* 86-92.

Dittrich, J. E., & Trapold, M. A. (1984). A treatment program for wives of alcoholics: An evaluation. *Bulletin of the Society of Psychologists in Addictive Behaviors, 3,* 91-102.

Dixon, L., McNary, S., & Lehman, A. (1995). Substance abuse and family relationships of persons with severe mental illness. *American Journal of Psychiatry, 152*, 456-458.

Drake, R. E. & Mueser, K. T. (2000). Psychosocial approaches to dual diagnosis. *Schizophrenia Bulletin, 26* (1), 105-118.

Drake, R. E., Wallach, M. A., Alverson, H. S., & Mueser, K T. (2002). Psychosocial aspects of substance abuse by clients with severe mental illness. *The Journal of Nervous and Mental Disease, 190,* 100-106.

Dunkel-Schetter, C., Feinstein, L. G., Taylor, S. E., & Falk, R. L. (1992). Patterns of coping with cancer. *Health Psychology, 11,* 79-87.

Dyck, D. G., Short, R., & Vitaliano, P. P. (1999). Predictors of burden and infectious illness in schizophrenia caregivers. *Psychosomatic Medicine, 61,* 411-419.

Endler, N. S., & Parker, J. D. A. (1994). Assessment of multidimensional coping: Task, emotion, and avoidance strategies. *Psychological Assessment, 6,* 50-60.

Endler, N. S., Parker, J. D. A., & Butcher, J. N. (2003). A factor analytic study of coping styles and the MMPI-2 content scales. *Journal of Clinical Psychology, 59,* 1049-1054.

Epel, E. S., Blackburn, E. H., Lin, J., Dhabhar, F. S., Adler, N. E., Morrow, J. D., & Cawthon, R. M. (2004). Accelerated telomere shortening in response to life stress. *Proceedings of the National Academy of Sciences, USA, 101,* 17312-17315.

Falkin, G. P., & Strauss, S. M. (2003). Social supporters and drug use enablers: A dilemma for women in recovery. *Addictive Behaviors, 28,* 141-155.

Fals-Stewart, W., Birchler, G. R., & O'Farrell, T. J. (1999). Drug-abusing patients and their intimate partners: Dyadic adjustment, relationship stability, and substance use. *Journal of Abnormal Psychology, 108,* 11-23.

Fals-Stewart, W., & O'Farrell, T. J. (2003). Behavioral family counseling and naltrexone for male opioid-dependent patients. *Journal of Consulting and Clinical Psychology, 71*, 432-442.

Fals-Stewart, W., O'Farrell, T. J., Feehan, M., Birchler, G. R., Tiller, S., & McFarlin, S. K. (2000). 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, 18,* 249-254.

Farley, M., Golding, J. M., Young, G., Mulligan, M., & Minkoff, J. R. (2004). Trauma history and relapse probability among patients seeking substance abuse treatment. *Journal of Substance Abuse Treatment, 27,* 161-167.

Folkman, S., & Greer, S. (2000). Promoting psychological well-being in the face of serious illness: When theory, research and practice inform each other. *Psycho-Oncology, 9,* 11-19.

Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior, 21,* 219-239.

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology, 48,* 150-170.

Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology, 50,* 571-579.

Galanter, M. (1993). *Network therapy for alcohol and drug abuse.* New York: Basic Books.

Gallagher-Thompson, D., Lovett, S., Rose, J., McKibbin, C., Coon, D., Futterman, A., & Thompson, L. W. (2000). Impact of psychoeducational interventions on distressed family caregivers. *Journal of Clinical Geropsychology, 6,* 91-110.

Gass, K. A., & Chang, A. S. (1989). Appraisals of bereavement, coping, resources, and psychosocial health dysfunction in widows and widowers. *Nursing Research, 38,* 31-36.

Gaugler, J. E., Kane, R. L., Kane, R. A., Clay, T., & Newcomer, R. C. (2005). The effects of duration of caregiving on institutionalization. *The Gerontologist, 45,* 78-89.

Gearon, J. S., Bellack, A. S., Rachbeisel, J., & Dixon, L. (2001). Drug-use behavior and correlates in people with schizophrenia. *Addictive Behaviors, 26*, 51-61.

Gerstel, N., & Gallagher, S. K. (2001). Men's caregiving: Gender and the contingent character of care. *Gender and Society, 15,* 197-217.

Gitlin, L. N.,Winter, L., Corcoran, M., Dennis, M. P., Schinfeld, S., & Hauck, W. W. (2003). Effects of the home environmental skill-building program on the caregiver-care recipient dyad: 6-month outcomes from the Philadelphia REACH initiative. *The Gerontologist, 43,* 532-546.

Glaser, R., Sheridan, J., Malarkey, W. B., MacCallum, R. C., & Kiecolt-Glaser, J. K. (2000). Chronic stress modulates the immune response to a pneumococcal pneumonia vaccine. *Psychosomatic Medicine, 62,* 804-807.

Gonzalez-Salvador, M. T., Arango, C., Lyketsos, C. G., & Barba, A. C. (1999). The stress and psychological morbidity of the Alzheimer patient caregiver. *International Journal of Geriatric Psychiatry, 14,* 701-710.

Greenberg, J., Seltzer, M. M., 7 Krauss, M. W. (2003, January). *Understanding the predictors of expressed emotion across different family caregiving contexts.* Paper presented at the Annual Conference of the Society for Social Work and Research, New Orleans, LA.

Helzer, J. E., Robins, L. N., McEvoy, L. T., Spitznagel, E. L., Stoltzman, R. K., Farmer, A., et al. (1985). A comparison of clinical and Diagnostic Interview Schedule diagnoses. *Archives of General Psychiatry, 42,* 657-666.

Hogarty, G. E., Anderson, C. M., Reiss, D. J., Kornblith, S. J., Greenwald, D. P., Ulrich, R. F., & Carter, M. (1991). 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, 48,* 340-347.

Hogarty, G. E., Anderson, C. M., Reiss, D. J., Kornblith, S. J., Greenwald, D. P., Javna, C. D., & Madonia, M. J. (1986). Family psychoeducation, social skills training, and maintenance chemotherapy in aftercare treatment of schizophrenia: I. One-year effects of a controlled study on relapse and expressed emotion. *Archives of General Psychiatry, 43,* 633-642.

Holahan, C. J., Moos, R. H., Holahan, C. K., & Cronkite, R. C. (2003). Drinking to cope and alcohol use and abuse in unipolar depression: A 10-year model. *Journal of Abnormal Psychology, 112,* 159-165.

Hooley, J. M., Orley, J., & Teasdale, J. D. (1986). Levels of expressed emotion and relapse in depressed patients. *The British Journal of Psychiatry, 148,* 642-647.

Humphreys, K., Finney, J. W., & Moos, R. H. (1994). Applying a stress and coping perspective to research on mutual help organizations. *Journal of Community Psychology, 22,* 312-327.

Hurcom, C. A., Copello, A., & Orford, J. (1999). An exploratory study of the predictors of coping and psychological well-being in female partners of excessive drinkers. *Behavioural and Cognitive Psychotherapy, 27,* 311-327.

Joe, G. W., Simpson, D. & Broome, K. M. (1998). Effects of readiness for drug abuse treatment on client retention and assessment of process. *Addiction, 93,* 1177-1190.

Johnson, J. (2000). Cost-effectiveness of mental health services for persons with a dual
diagnosis: A literature review and the CCMCP. *Journal of Substance Abuse
Treatment, 18,* 119-127.

Kendler, K. S., Bulik, C. M., Silberg, J., Hettema, J. M., Myers, J., & Prescott, C. A.
(2000). Childhood sexual abuse and adult psychiatric and substance use disorders
in women: An epidemiological and cotwin control analysis. *Archives of General
Psychiatry, 57,* 953-959.

Kendler, K. S., Kessler, R. C., Heath, A. C., Neale, M. C., & Eaves, L. J. (1991). Coping:
A genetic epidemiological investigation. *Psychological Medicine, 21,* 337-346.

Kenny, D. A. (2006). *Mediation.* Retrieved May 15, 2006, from
http://davidakenny.net/cm/mediate.htm

Kessler, R. C. (2003). Epidemiology of women and depression. *Journal of Affective
Disorders, 74,* 5-13.

Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S.,
Wittchen, H. U., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of
DSM-III-R psychiatric disorders in the United States: Results from the National
Comorbidity Survey. *Archives of General Psychiatry, 51*, 8-19.

Kessler, R. C., Nelson, C. B., McGonagle, K. A., Edlund, M. J., Frank, R. G., & Leaf, P.
J. (1996). The epidemiology of co-occurring addictive and mental disorders:
Implications for prevention and service utilization. *American Journal of
Orthopsychiatry, 66*(1), 17-31.

Kjobli, J., Tyssen, R., Vaglum, P., Aasland, O., Gronvold, N. T., & Ekeberg, O. (2004). Personality traits and drinking to cope as predictors of hazardous drinking among medical students. *Journal of Studies on Alcohol, 65,* 582-585.

Knight, K., Holcom, M., & Simpson, D. D. (1994). *TCU psychosocial functioning and motivation scales: Manual on psychometric properties.* Retrieved February 14, 2006, from Texas Christian University, Institute of Behavioral Research Web site: http://www.ibr.tcu.edu/pubs/datacoll/kk6-srf-95.pdf

Lazarus, R. S. (1993). From psychological stress to the emotions: A history of changing outlooks. *Annual Review of Psychology, 44,* 1-21.

Lazarus, R. S. (2000). Toward better research on stress and coping. *American Psychologist, 55,* 665-673.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping.* New York: Springer.

Lefley H. P. (1996). *Family caregiving in mental illness.* Thousand Oaks, CA: Sage.

Lehman, A. F., Steinwachs, D. M., & Co-Investigators of the PORT Project (1998). Patterns of usual care for schizophrenia: Initial results from the schizophrenia Patient Outcomes Research Team (PORT) Client Survey. *Schizophrenia Bulletin, 24*, 11-20.

Lowenstein, A. (1984). Coping with stress: The case of prisoners' wives. *Journal of Marriage and the Family, 46,* 699-708.

Magliano, L., Fadden, G., Madianos, M., Caldas de Almeida, J. M., Held, T., Guarneri, M., Marasco, C., Tosini, P., & Maj, M. (1998). Burden on the families of patients

with schizophrenia: Results of the BIOMED I study. *Social Psychiatry and Psychiatric Epidemiology, 33,* 405-412.

Manne, S. L., & Zautra, A. J. (1989). Spouse criticism and support: Their association with coping and psychological adjustment among women with rheumatoid arthritis. *Journal of Personality and Social Psychology, 56,* 608-617.

Mannion, E., Meisel, M., Solomon, P., & Draine, J. (1996). A comparative analysis of families with mentally ill relatives: Support group members versus non-members. *Psychiatric Rehabilitation Journal, 20,* 43-50.

Martino, S., Carroll, K. M., O'Malley, S. S., & Rounsaville, B. J. (2000). Motivational interviewing with psychiatrically ill substance abusing patients. *The American Journal on Addictions, 9,* 88-91.

McClendon, M. J., Smyth, K. A., & Neundorfer, M. M. (2004). Survival of persons with Alzheimer's disease: Caregiver coping matters. *The Gerontologist, 44,* 508-519.

McFarlane, W. R., Dixon, L., Lukens, E., & Lucksted, A. (2003). Family psychoeducation and schizophrenia: A review of the literature. *Journal of Marital and Family Therapy, 29*(2), 223-245.

McFarlane, W. R., Lukens, E., Link, B., Dushay, R., Deakins, S. A., Newmark, M., Dunne, E. J., Horen, B., & Toran, J. (1995). Multiple-family groups and psychoeducation in the treatment of schizophrenia. *Archives of General Psychiatry, 52,* 679-687.

McWilliams, L. A., Cox, B. J., & Enns, M. W. (2003). Use of the coping inventory for stressful situations in a clinically depressed sample: Factor structure, personality correlates, and prediction of distress. *Journal of Clinical Psychology, 59,* 423-437.

Melnick, G., De Leon, G., Thomas, G., Kressel, D., & Wexler, H. K. (2001). Treatment

    process in prison therapeutic communities: Motivation, participation, and

    outcome. *American Journal of Drug and Alcohol Abuse, 27,* 633-650.

Meyers, R. J., Apodaca, T. R., Flicker, S. M., & Slesnick, N. (2002). Evidence-based

    approaches for the treatment of substance abusers by involving family members.

    The Family Journal: Counseling and Therapy for Couples and Families, 10, 281-

    288.

Meyers, R. J., & Smith, J. E. (1997). Getting off the fence: Procedures to engage

    treatment-resistant drinkers. *Journal of Substance Abuse Treatment, 14*, 467-472.

Meyers, R. J., Miller, W. R., Hill, D. E., & Tonigan, J. S. (1999). Community

    reinforcement and family training (CRAFT): Engaging unmotivated drug users in

    treatment. *Journal of Substance Abuse, 10,* 291-308.

Meyers, R. J., Miller, W. R., Smith, J. E., & Tonigan, J. S. (2002). A randomized trial of

    two methods for engaging treatment-refusing drug users through concerned

    significant others. *Journal of Consulting and Clinical Psychology, 70*, 1182-1185.

Miklowitz, D. J., Goldstein, M. J., Nuechterlein, K. H., Snyder, K. S., & Mintz, J. (1988).

    Family factors and the course of bipolar affective disorder. *Archives of General*

    Psychiatry, 45, 225-31.

Miklowitz, D. J., Simoneau, T. L., George, E. L., Richards, J. A., Kalbag, A., Sachs-

    Ericsson, N., & Suddath, R. (2000). Family-focused treatment of bipolar disorder:

    1-year effects of a psychoeducational program in conjunction with

    pharmacotherapy. *Biological Psychiatry, 48,* 582-592.

Miller, W. R., Meyers, R. J., & Tonigan, J. S. (1999). Engaging the unmotivated in treatment for alcohol problems: A comparison of three strategies for intervention through family members. *Journal of Consulting and Clinical Psychology, 67,* 688-697.

Mittelman, M. S., Roth, D. L., Haley, W. E., & Zarit, S. H. (2004). Effects of a caregiver intervention on negative caregiver appraisals of behavior problems in patients with Alzheimer's disease: Results of a randomized trial. *Journal of Gerontology, 59B,* P27-P34.

Moggi, F., Ouimette, P. C., Moos, R. H., & Finney, J. W. (1999). Dual diagnosis patients in substance abuse treatment: Relationship of general coping and substance-specific coping to 1-year outcomes. *Addiction, 94,* 1805-1816.

Moos, R. H. (Ed.). (1976). *Human adaptation: Coping with life crises.* Lexington, MA: Heath.

Moos, R. H., & Holahan, C. J. (2003). Dispositional and contextual perspectives on coping: Toward an integrative framework. *Journal of Clinical Psychology, 59,* 1387-1403.

Mueser, K. T., & Fox, L. (2002). A family intervention program for dual disorders. *Community Mental Health Journal, 38*(3), 253-270.

Mueser, K. T., & Glynn, S. M. (1999). *Behavioral family therapy for psychiatric disorders* (2nd ed.). Oakland, CA: New Harbinger Publications.

Mueser, K. T., Drake, R. E., & Miles, K. M. (1997). The course and treatment of substance use disorder in persons with severe mental illness. *National Institute of Drug Abuse (NIDA) Research Monograph, 172: Treatment of Drug-Dependent*

Individuals with Comorbid Mental Disorders (pp. 86-109). Rockville, MD: U. S. Department of Health and Human Services.

Nelson-Zlupko, L. L., Kauffman, E. & Dore, M. M. (1995). Gender differences in drug addiction and treatment: Implications for social work intervention with substance abusing women. *Social Work, 40,* 45-54.

O'Farrell, T. J., & Fals-Stewart, W. (2000). Behavioral couples therapy for alcoholism and drug abuse. *Journal of Substance Abuse Treatment, 18*, 51-54.

O'Farrell, T. J., Hooley, J., Fals-Stewart, W., & Cutter, H. S. G. (1998). Expressed emotion and relapse in alcoholic patients. *Journal of Consulting and Clinical Psychology, 66*, 744-752.

Orford, J., Natera, G., Davies, J., Nava, A., Mora, J., Rigby, K., Bradbury, C., Bowie, N., Copello, A., & Velleman, R. (1998). Tolerate, engage or withdraw: A study of the structure of families coping with alcohol and drug problems in South West England and Mexico City. *Addiction, 93,* 1799-1813.

Pearlin, L. I., & Schooler, K. (1978). The structure of coping. *Journal of Health and Social Behavior, 19,* 2-22.

Pearlin, L. I., Mullan, J. T., Semple, S. J., & Skaff, M. M. (1990). Caregiving and the stress process: An overview of concepts and their measures. *Gerontologist, 30,* 583-594.

Perlick, D. A., Rosenheck, R. A., Clarkin, J. F., Maciejewski, P. K., Sirey, J., Struening, E., & Link, B. G. (2004). Impact of family burden and affective response on clinical outcome among patients with bipolar disorder. *Psychiatric Services, 55,* 1029-1035.

Pinquart, M., & Sorensen, S. (2003). Associations of stressors and uplifts of caregiving with caregiver burden and depressive mood: A meta-analysis. *Journal of Gerontology: Psychological Sciences, 58B,* P112-P128.

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1,* 385-401.

Raune, D., Kuipers, E., & Bebbington, P. E. (2004). Expressed emotion at first-episode psychosis: Investigating a carer appraisal model. *British Journal of Psychiatry, 184,* 321-326.

Robins, L. N., Helzer, J. E. Croughan, J., & Ratcliff, K. S. (1981). National Institute of Mental Health Diagnostic Interview Schedule: Its history, characteristics, and validity. *Archives of General Psychiatry, 38,* 381-389.

Rotunda, R. & O'Farrell, T. J. (1998). Understanding and managing expressed emotion in the couples treatment of alcoholism. *In Session: Psychotherapy in Practice, 4,* 55-71.

Rotunda, R. J., & Doman, K. (2001). Partner enabling of substance use disorders: Critical review and future directions. *The American Journal of Family Therapy, 29,* 257-270.

Rotunda, R. J., West, L., & O'Farrell, T. J. (2004). Enabling behavior in a clinical sample of alcohol-dependent clients and their partners. *Journal of Substance Abuse Treatment, 26,* 269-276.

Rychtarik, R. G., & McGillicuddy, N. B. (2005). Coping skills training and 12-step facilitation for women whose partner has alcoholism: Effects on depression, the

partner's drinking, and partner physical violence. *Journal of Consulting and Clinical Psychology, 73,* 249-261.

Savage, A., & Russell, L. A. (2005). Tangled in a web of affiliation: Social support networks of dually diagnosed women who are trauma survivors. *Journal of Behavioral Health Services & Research, 32,* 199-214.

Schulz, R. (2003). End of life care and the effects of bereavement on family caregivers of persons with dementia. *The New England Journal of Medicine, 349,* 1936-1942.

Schulz, R., & Martire, L. M. (2004). Family caregiving of persons with dementia: Prevalence, health effects, and support strategies. *American Journal of Geriatric Psychiatry, 12,* 240-249.

Schulz, R., O'Brien, A. T., Bookwala, J., & Fleissner, K. (1995). Psychiatric and physical morbidity effects of dementia caregiving: Prevalence, correlates, and causes. *The Gerontologist, 35,* 771-791.

Schulz, R., O'Brien, A., Czaja, S., Ory, M., Norris, R., Martire, L. M., Belle, S. H., Burgio, L., Gitlin, L., Coon, D., Burns, R., Gallagher-Thompson, D., & Stevens, A. (2002). Dementia caregiver intervention research: In search of clinical significance. *The Gerontologist, 42,* 589-602.

Selye, H. (1956). *The stress of life.* New York: McGraw Hill.

Sheridan, M. J. (1995). A proposed intergenerational model of substance abuse, family functioning, and abuse/neglect. *Child Abuse and Neglect, 19,* 519-530.

Sisson, R. W., & Azrin, N. H. (1986). Family-member involvement to initiate and promote treatment of problem drinkers. *Journal of Behavior Therapy and Experimental Psychiatry, 17,* 15-21.

Solomon, P. (2000). Interventions for families of individuals with schizophrenia. *Disease Management and Health Outcomes, 8,* 211-221.

Solomon, P., & Draine, J. (1995). Adaptive coping among family members of persons with serious mental illness. *Psychiatric Services, 46,* 1156-1160.

Somerfield, M. R., & McCrae, R. R. (2000). Stress and coping research: Methodological challenges, theoretical advances, and clinical applications. *American Psychologist, 55,* 620-625.

Song, L., Biegel, D. E., & Milligan, S. E. (1997). Predictors of depressive symptomatology among lower social class caregivers of persons with chronic mental illness. *Community Mental Health Journal, 33,* 269-286.

Spangenberg, J. J., & Campbell, M. E. (1999). Anxiety, depression and coping strategies in recently detoxified alcoholics. *Alcoholism Treatment Quarterly, 17,* 55-65.

Stanton, M. D. (1997). The role of family and significant others in the engagement and retention of drug-dependent individuals. In *NIDA research monograph, number 165: Beyond the therapeutic alliance: Keeping the drug-dependent individual in treatment.* Retrieved May 2, 2005, from http://www.nida.nih.gov/pdf/monographs/monograph165/157-180_Stanton.pdf

Steadman, H. J., Mulvey, E. P., Monahan, J., Robbins, P. C., Appelbaum, P. S., Grisso, T., Roth, L. H., & Silver, E. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. *Archives of General Psychiatry, 55*, 393-401.

Stowell, J. R., Kiecolt-Glaser, J. K., & Glaser, R. (2001). Perceived stress and cellular immunity: When coping counts. *Journal of Behavioral Medicine, 24,* 323-339.

Strauss, S. M., & Falkin, G. P. (2001). Social support systems of women offenders who use drugs: A focus on the mother-daughter relationship. *American Journal of Drug and Alcohol Abuse, 27*(1), 65-89.

Suls, J., & Fletcher, B. (1985). The relative efficacy of avoidance and nonavoidance coping strategies: A meta-analysis. *Health Psychology, 4,* 249-288.

Sweet, L., Savoie, J. A., & Lemyre, L. (1999). Appraisals, coping, and stress in breast cancer screening: A longitudinal investigation of causal structure. *Canadian Journal of Behavioral Science, 31,* 240-253.

Tarrier, N., Sommerfield, C., & Pilgrim, H. (1999). Relatives' expressed emotion (EE) and PTSD treatment outcome. *Psychological Medicine, 29,* 801-811.

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

Timko, C., & Moos, R. H. (2002). Symptom severity, amount of treatment, and 1-year outcomes among dual diagnosis patients. *Administration and Policy in Mental Health, 30,* 35-54.

Tix, A. P., & Frazier, P. A. (1998). The use of religious coping during stressful life events: Main effects, moderation, and mediation. *Journal of Consulting and Clinical Psychology, 66,* 411-422.

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

Vaughn, C. E., & Leff, J. P. (1976). The influence of family and social factors on the course of psychiatric illness: A comparison of schizophrenic and depressed neurotic patients. *The British Journal of Psychiatry, 129,* 125-137.

Veysey, B. M., & Clark, C. (2004). Introduction. *Alcoholism Treatment Quarterly, 22*(3/4), 1-18.

Vollrath, M., Alnaes, R., & Torgersen, S. (2003). Differential effects of coping in mental disorders: A prospective study in psychiatric outpatients. *Journal of Clinical Psychology, 59,* 1077-1088.

Vosvick, M., Koopman, C., Gore-Felton, C., Thoresen, C., Krumboltz, J., & Spegel, D. (2003). Relationship of functional quality of life to strategies for coping with the stress of living with HIV/AIDS. *Psychosomatics, 44,* 51-58.

Webb, C., Pfeiffer, M., Mueser, K. T., Gladis, M., Mensch, E., DeGirolamo, J., & Levinson, D. F. (1998). Burden and well-being of caregivers for the severely mentally ill: The role of coping style and social support. *Schizophrenia Research, 34,* 169-180.

Williams, W., Weiss, T. W., Edens, A., Johnson, M., & Thornby, J. I. (1998). Hospital utilization and personality characteristics of veterans with psychiatric problems. *Psychiatric Services, 49,* 370-375.

Wolfradt, U., & Engelmann, S. (2003). Depersonalization, fantasies, and coping behavior in clinical context. *Journal of Clinical Psychology, 59,* 1117-1124.

Yee, J. L., & Schulz, R. (2000). Gender differences in psychiatric morbidity among family caregivers: A review and analysis. *The Gerontologist, 40,* 147-164.