CAREGIVING AMONG FAMILIES OF WOMEN WITH SUBSTANCE USE OR DUAL DISORDERS:

PREDICTORS OF CAREGIVER INVOLVEMENT AND THE ROLE OF CAREGIVER – CARE-RECIPIENT QUALITY OF RELATIONSHIP

by

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From the bottom of my heart,

Thank you.
Caregiving Among Families of Women with Substance Use or Dual Disorders:

Predictors of Caregiver Involvement and the
Role of Caregiver – Care-Recipient Quality of Relationship

Abstract

by

SHIRI KATZ-SALTZMAN

The objective of this study is to enhance understanding of the caregiving stress process among families of women with substance use or co-occurring substance and mental disorders (anxiety, PTSD, depression, or dysthymia). Two central aims direct the study’s inquiry. First, based on the caregiving stress model, the study aims to examine the relationship of primary caregiving stressors and caregivers’ well-being on family caregivers’ involvement with women with substance or dual disorders. Second, this study aims to evaluate the moderating role of the quality of caregiver-care recipient relationship in the caregiving stress process.

This study addresses significant gaps in the literature. Few studies have focused on co-morbidity between substance use disorders and mental disorders among women, and very few studies focused on the role of families of persons with dual disorders. Furthermore, little attention has been paid in the caregiving literature to the possible role
of the caregiver-care recipient relationship quality on the caregiving process and its outcomes.

This study is a secondary data analysis, utilizing data collected by through a NIDA funded grant. This study utilized a non-experimental cross-sectional survey design. The subjects of the current study are 82 family members (caregivers) of women clients in a residential or outpatient substance abuse treatment program.

Results indicated that while subjective burden (i.e., well-being) had a direct effect on involvement (i.e., supervision); neither subjective burden or depressive symptomatology mediated the relationship between caregivers’ primary stressors and caregivers’ involvement with the client. However, subjective burden had a complete mediation effect on the relationship between caregivers’ objective burden and supervision. No moderation effects were found for negative quality of relationship between the three domains of the caregiving process: caregivers’ stressors, caregivers’ well being, and caregivers’ involvement with the client. However, positive quality of relationship buffered the negative effect of care-recipients’ behavioral problems and care-recipients’ emotional and substance use problems (i.e., stressors) on frequency of contact. Furthermore, positive quality of relationship moderated the effect of caregivers’ depressive symptomatology (i.e., well-being) on caregivers’ supervision (i.e., involvement). The study’s implications for practice, service delivery and future research are discussed.
CHAPTER 1: INTRODUCTION

Problem Statement

The purpose of this study is to address the matter of family caregiving for women with substance use disorders or co-occurring substance and mental disorders (anxiety, PTSD, depression, or dysthymia). More specifically, this study aims to enhance understanding of the impact of having a women family member (or significant other) with a substance use disorder or a co-occurring disorder upon their family caregivers. Two central aims direct the study’s inquiry: First, based on the caregiving stress model, the study aims to examine the relationship of primary caregiving stressors and caregivers’ well-being, to family caregivers’ (or significant others’) involvement with women with substance use disorders or co-occurring substance and mental disorders. The term involvement broadly relates to family interactions with the client (nature, quantity, & perceived quality) (Townsend et al., 2006). Second, this study aims to evaluate the moderating role of the quality of caregiver-care recipient relationship in the caregiving stress process. Specifically, the purpose of the study’s inquiry is to identify whether caregivers’ perceptions of the positive and negative aspects of their relationship with the care-recipients (i.e., the clients) have a modifying effect (i.e., are moderators) in the relationship between the three main components of the study’s caregiving-process model: stressors, well-being, and involvement.

Families are the primary source of support to adults with substance or co-occurring substance and mental disorders (Clark, 1996; Trulsson & Hedin, 2004). Recent research suggests that families play a central role in the survival and well-being of their relatives with dual-disorders (DD), supplying large amounts of direct care, financial assistance and
emotional support (Clark, 2001; Clark & Drake, 1994; Franks, 1990). Families also provide support in the management of illness symptoms, and functional deficits (Mueser, Noordsy, Drake & Fox, 2003; Provencher, Perreault, St-Onge, & Rousseau, 2003). However, the caregiving role is often demanding and costly. The extended responsibilities of caregiving, combined with the patient’s multifaceted symptomatology can place much stress and psychological burden on the families (Mueser et al., 2003).

Family caregivers who are stressed by the caregiving experience and who subsequently develop physical and/or mental health problems of their own may not be able to provide adequate support and assistance to their ill family member. Unmet family caregiver needs can therefore negatively affect both, the caregiver and the care-recipient.

It should be noted that while the term “family caregiver” is widely used in the mental health research literature, it is has not been used in the substance abuse literature. Nonetheless, the extended amount of care, assistance and support often provided by family members to adult clients with substance use disorders or dual-disorders provides a base to suggest the relevance of the family caregiving term to this population.

In addition, while care of one family member to another seem a normative, continuance and relevant activity of the interpersonal relationships (Biegel, et al., 1991), Lefley (1997) calls attention to the social timing in which one is called to fulfill the role of care provision. In applying the social time concept to the caregiving matter, it is assumed that family members are most prepared to provide care to other family member is in later years, when the illness and the role expectations occur “on time”. However, family members are not socialized to expect responsibility for caregiving tasks in their younger years, nor are parents prepared to give care to their adult children (Lefley, 1997).
Thus, the extended responsibilities carried by family members to adult women with
substance or dual disorders, in addition to the ‘non-normative’ timing in which family
members are called to fulfill these responsibilities, corresponds with Biegel’s et al (1991)
definition of the caregiving situation as representing the increment of extraordinary care
that goes beyond the bounds of usual or normal care. The unanticipated nature of these
demands may contribute to the stress, difficulties, and experience of subjective burden.

Finally, the use of the term ‘family caregiver’ enables to relate the current study’s
outcomes to other studies concerning families of adults with mental health, dual disorders
and other chronic illnesses.

Extensive literature has demonstrated that social support has beneficial effects on
psychological well-being and physical health. In addition, studies suggest that social
support has a buffering effect, that is, supportive social relations can reduce the adverse
consequences (mental and physical) of stressful life events (Cohen & Wills, 1985; House,
Umberson, & Landis, 1988). Emotional support is characterized by exchange of concern,
appreciation, respect and affirmation that one is valued and understood (Cohen & Wills,
1985).

More recent research has pointed out the potential detrimental effects, or the
embedded risks, that exists in interpersonal relationships. As a wide range of research has
shown a favorable effect of supportive relationships on psychological and physical health
(Cohen & Wills, 1985), research has also indicated that social relationships can be a
source of frustration, disappointment and stress (Rook, 2003). Negative social
interactions, defined as, “unpleasant social encounters that are characterized by criticism,
rejection, competition, the violation of privacy, and the lack of reciprocity” (Rook, 2003,
p.88), have been shown to have a detrimental effect on well-being (i.e., depressive symptomatology and well-being) and physical health (Kiecolt-Glaser, Glaser, Cacioppo, & Malarkey, 1998; Rook, 1992). Moreover, numerous studies have indicated that negative interpersonal interactions have more potent impact on mental health as compared to supportive interactions (Abbey, Abramis, & Caplan, 1985; Fiore, Becker, & Coppel, 1983; Rook, 1984, 1990). While caregiving is broadly perceived as a two-person dyadic-process (Goodman, Zarit, & Steiner, 1997), and despite the recognition of the importance of interpersonal relationships, little attention has been paid in the caregiving literature to the possible role of the caregiver-care recipient relationship quality on the caregiving process and its outcomes (Townsend & Franks, 1995, 1997; White, Townsend, & Stephens, 2000).

A better understanding of the role that quality of relationships plays in the caregiving process for families of adults with dual disorders may expand and refine our understanding of the mechanisms through which the stress associated with the caregiving role is associated with caregiver’s well-being; as well as the association between caregiving stressors and the degree of caregiver’s involvement with their relative. Understanding these mechanisms may contribute to the development of more focused or specified interventions, for the enhancement of caregivers’ and care-recipients’ well-being, as well as strategies to enhance caregivers’ involvement with their ill family member.
Background and Significance of the Problem

In the late 1980’s, with the gradually emerging awareness of the high prevalence and the complexity of co-occurring mental and substance use disorders, clinicians, policy makers, and researchers faced the challenge of synthesizing the mental health and substance abuse fields, both theoretically (e.g., etiology of the problem, definition and epistemology of the disorder) and practically (e.g., development of services and evidence-based practices that will target the combined disorders) (Cuffel, 1996; Drake & Wallach, 2000; Sacks, 2000).

Dual diagnosis became a generally accepted term referring to adults diagnosed concurrently with mental health disorders and substance use disorders, with both disorders meeting diagnostic criteria (Sacks, 2000; Schofield, Quinn, Haddock, & Barrowclough., 2001). Nonetheless, it is important to note that the population of persons with dual mental and substance use disorders is by itself a heterogeneous population. It includes individuals with different levels of mental illness severity and those with either substance abuse or substance dependence.

Studies of the prevalence of mental and substance use disorders indicate wide ranging occurrence (Cuffel, 1996). Two major epidemiological studies from the U.S. provide data on the prevalence of co-occurring substance use and psychiatric disorders: the Epidemiological Catchment Area Study (ECA) and the National Comorbidity Survey (NCS). The ECA survey included structured interviews with 20,219 adults (18 years and older) in a combined community and institutional population, residing in one of 5 cities in the US (New Haven, Connecticut, Baltimore, Manhattan and St Louis). A diagnostic

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1 Often times, the terms dual diagnosis, dual disorders, and co-occurring disorders are used interchangeably. To avoid confusion of terms, this dissertation will use the term “dual diagnosis” exclusively when referring to this population.
assessment of both psychiatric and substance use disorders was conducted (Regier et al., 1990). The data indicate that people with psychiatric disorders (following DSM-III diagnostic criteria) were significantly more likely to have a substance use disorder than persons with no mental health disorder. For example, the life time prevalence of substance use disorder (alcohol or drugs) in the general population was 16.7%. For people with anxiety disorders, the rate was 23.7%, and a 32.0% rate was found among people with mood disorders and 47.0% among people diagnosed with schizophrenia. Similarly, the NCS survey, based on a representative sample of the USA population, indicated that 51% of those with a lifetime addictive disorder also had a lifetime mental disorder (Kessler, Nelson, McGonagle, Edlund, Frank, & Leaf, 1996).

Co-occurrence is highly prevalent in the adult population. The Office of the Surgeon General (1999), based on analysis of the ECA and the NCS estimates that during a 1-year period, 22 to 23 percent of the U.S. adult population—or 44 million people—have diagnosable mental disorders. In general, 19 percent of the adult U.S. population has a mental disorder alone (in 1 year); 3 percent have both mental and addictive disorders; and 6 percent have addictive disorders alone. Consequently, about 28 to 30 percent of the population has either a mental or addictive disorder (Surgeon General, 1999).

Research suggests that persons with dual diagnosis are at risk for a wide range of negative outcomes. Substance abuse adversely affects the course and outcomes of mental health problems. Persons with dual diagnosis are at risk for more severe illness symptoms (Mueser et al., 2003); increased non-compliance with medication and treatment (Osher & Kofoed, 1989); higher rates of institutionalization, both in hospitals and in jails (Abram & Teplin, 1991; Barteless, Teague, & Drake, 1993; Safer, 1987); and increased rates of
hostility, disruptive behaviors, and suicidal ideation (Drake & Wallach, 1989). In addition, there is an increased risk and negative physical consequences for the intravenous drug user in terms of HIV and hepatitis diseases, as well as homelessness (Caton et al., 1995; Clark, 1998; Drake, Wallach, & Teague, 1991). The knowledge about the course of dual disorders suggests a similar course for persons with primary substance use disorders, but complicated by an increased risk for disruptive behavior, relapse and hospitalization, and psychosocial problems (Mueser et al., 2003).

Substance use disorders and dual disorders are significant conditions among women. Data from the 2005 National Survey on Drug Use and Health indicate that 18.8% of the adults (18 years and older) in the U.S. have met criteria for current substance abuse or dependence. Among those, almost third were women (6.2% of the adults in the U.S. population) (Office of Applied Studies, 2006). Concerning lifetime diagnosis, 19% of U.S. women have been diagnosed with substance disorder (Kessler, 1995). Women with substance use disorders, as compared to men, present different course and problems related to their disorder. Women with substance use problems are more likely to have experienced prior sexual or physical abuse (Kang, Magura, Laudet, & Whitney, 1999). In addition, women who abuse drugs are more likely to develop alcohol-induced organ pathology, heart disease and brain disorders. Women with substance use disorders are at higher risk to engage in dangerous behaviors (sexual and needle risk behaviors), and thus are more susceptible to HIV and other infection diseases. Compared with men, women with substance abuse problems are more likely to be living with a partner who has a substance abuse problem and to be caring for dependent children (Chander & McCaul, 2003; Gearson et al., 2003).
Comorbidity of psychiatric and substance abuse disorders is highly prevalent among women. It is estimated that 50-60% of women entering substance abuse treatment have a co-occurring mental disorder (Newmann & Sallmann, 2004). Data from the National Comorbidity Survey (Kessler, 2001, as reported by Baker, 2001) indicates that of women with current mental disorder (diagnosis within the past 12-month), 14% also had a 12-month substance use disorder in any given year. In addition, of those women with 12-month severe mental disorder, 22% also had a current substance use disorder in the past year. In addition, the survey findings have indicate that lifetime prevalence rates of comorbid psychiatric and substance related diagnoses of 72% among women diagnosed with alcohol abuse and 86% for women diagnosed with alcohol dependence (Kessler et al., 1994). Furthermore, women with alcohol or drug dependency have higher rates of psychopathology compared to men, including anxiety disorder, mood disorders, phobias, and PTSD (DiNitto, Webb, & Rubin, 2002; King, Bernardy, & Hauner, 2003).

Despite the high prevalence of co-occurring substance and mental disorders among women, clinical research on co-morbidity has paid little attention to the effect of co-morbidity and mental disorders that are more common among women (Merikangas & Stevens, 1998). Given that women with dual disorders are more likely to be diagnosed with mood disorders, generalized phobias, and PTSD, there is a significant gap in the literature of the impact of co-morbid substance use disorders and those mental disorders (i.e., generalized anxiety, depression, PTSD and dysthymia) more frequently manifested among women compared to men (Chander, & McCaul, 2003; DiNitto et al., 2002; King et al., 2003; Sannibale & Hall, 2001).
Women with co-occurring substance use and mental disorders present special needs and distinct problems as compared to men with dual disorders; those include higher risk of exposure to violence and sexual abuse, higher prevalence of sexually transmitted and infectious disease, unemployment, poverty, and child abuse and neglect (Chander & McCaul, 2003; DiNitto et al., 2002; Gearon, Nidecker, Bellack & Bennett, 2003; Reed & Mowbray, 1999).

Furthermore, some evidence indicates that women with dual disorders are more sensitive to familial interactions compared to men. In a comparison of inpatient men and women with substance use and mental disorder (77% diagnosed with dysthmia, depression, PTSD and 23% with bipolar, schizophrenia or schizoaffective disorder), women reported being more concerned by family problems and expressed higher need for family counseling as compared to men. Furthermore, as compared to men, more women have reported having close relationships with their partner or children, though more women have also reported problems in getting along with family members (DiNitto et al., 2002). The findings indicate the centrality and greater sensitivity of women to issues of familial relationships, as compared to men.

Despite the high prevalence of co-occurring mental and substance use disorders among women and in spite of their special needs, little attention has been given to the study of this population (Baker, 2001); and even less attention has been given to the role and needs of families of women with dual disorders. ²

*The Role of Families as Caregivers*

² Due to the scarcity of literature concerning comorbidity of women with substance use and non-severe mental disorders, the review of the literature will mainly present evidence concerning persons with substance use and severe mental disorders and their families.
The provision of care to a family member with a chronic disorder (such as substance use, mental, or physical disorder) involves a significant expenditure of time, energy, and often money over potentially long periods of time and presents tasks that may be unpleasant and uncomfortable. Further, responsibilities are likely to be asymmetrical and assuming these responsibilities is a role that often has not been anticipated (Biegel, Sales, & Schultz, 1991).

Support and care of one family member to another is seen as a normative continuance of activity pertaining to interpersonal relationships. This normative perception of the caregiving concept may be a source for ambiguity and uncertainty about the definition and boundaries of the term. This paper, following the definition of Biegel et al. (1991), interprets the caregiving situation as representing the increment of care that goes beyond the bounds of usual or normal care. Pearlin, Mullan, Semple and Skaff (1990) further refine the differentiation between caring for a loved one in close relationship and the process of becoming a caregiver:

…caregiving is transformed from the ordinary exchange of assistance among people standing in close relationship to one another to an extraordinary and unequally distributed burden….Where impairment leads to increasing dependency on others for satisfaction of basic needs, a profound restructuring of the established relationship can occur. (p. 583).

Thus, the assumption of imbalanced reciprocity between the parties encompassed in the specific relationship is a significant component of the caregiving experience (Pearlin et al., 1990).

Family care provision to another family member who suffers chronic (or acute) illness is a socially expected and widely practiced phenomenon (Biegel et al., 1991). However, significant demographic, economic, and social changes in the last half of the
20th century have emphasized and expanded the role of family members as a salient factor in the care provision arena. The deinstitutionalization movement resulted in a reduction of institutional care and has been followed by more (though insufficient) community-based treatment options. In addition, changes in health care policies and medical technology have shifted the burden of post institutionalization care to the informal support systems, mainly families (Biegel et al., 1991; Biegel, Tracy, & Corvo, 1994; Cook et al., 1997; Lefley, 1997). The combination of insufficient community support services, severity of symptoms, and social expectations of maintaining the family member in the community introduces greater demands on families today than in the past (Lefley, 1996).

As discussed earlier, dual disorders can have more negative outcomes for both clients and family members, compared to a single disorders (Clark, 1996; Drake, Rosenberg & Mueser, 1996). Thus, the role of family relationships and involvement with the client often become of significant importance. Family involvement with clients with comorbid substance and mental disorders has been shown to be associated with various positive outcomes for the client. Those include reduction or elimination of substance use (Clark, 2001), shorter hospital admissions (Schofield et al., 2001), as well as reduction of risk for homelessness (Odell & Commander, 2000). However, families can also unintentionally contribute to or maintain clients’ ongoing substance abuse by performing a wide range of enabling behaviors (Mueser et al., 2003). Thus, families play a significant role in the lives of people with dual disorders, and their potential influence on the disorders’ course is a considerable one.
Although family support may benefit persons with dual disorders, its cost is often high. While only a few studies have been focused on the families of people with dual disorders, extensive literature has discussed caregivers of people with mental illnesses, and to a lesser degree, families of persons with substance use disorders. Research concerning families of adults with severe mental illness has indicated that families bear enormous emotional, social, and financial costs when they assume the caregiving responsibilities of their family members with mental illness (Biegel, et al., 1991; Clark, 1994; Crotty & Kulys, 1986). In addition, studies indicate that families of persons with substance use disorder experience much stress in addition to financial and social difficulties (Cronkite, Finney, Nikich, & Moos, 1990; Finney, Moos, Cronkite, & Gamble, 1983; Kogan & Jackson, 1964). Among the most significant problems that caregivers experience are: coping with disruptive behavior, restriction on social and leisure activities, disruption of household and work/school routines, conflicting multiple role demands, disruption of family relationship, sense of isolation, and lack of sufficient interaction with and assistance from substance abuse and mental health professionals (Biegel, Johnson & Shafran, 1997; Biegel et al., 1991; Stengard, 2002; Tesseler & Gamach, 1994). Dual diagnosis increases the risk of problems for clients and their families beyond the risk posed by mental illness or substance use disorder alone (Mueser et al., 2003).

Examination of the range of possible negative or harmful consequences of dual disorders clarifies the potential burden and strain embedded in the caregiving situation that often leads to breakdown in family members’ ability to cope (Mueser et al., 2003).
Family caregivers who are stressed and burdened by the caregiving role may not be able to provide necessary support to their ill relative (Mueser et al., 2003).

It is often shown in stress research that people exposed to seemingly similar stressors are affected by them in dissimilar ways (Pearlin, et al., 1990). This is the case in studies of caregivers. Different caregivers experience the caregiving role in different ways and with a variety of physical and emotional consequences. While some families continue providing direct financial and emotional support to their relative despite of great demands and stress, others withdraw from the caregiving role (Clark, 1994). While gratification and burden can coexist in the caregiver’s overall experience, some families perceive the caregiving role as mostly gratifying, while others experience mainly stress and burden (Clark & Drake, 1994; Greenberg, Greenley, & Benedict, 1994; Schwartz, & Gidron, 2002). The variability in the outcomes is usually attributed to different mediators or moderators. Several studies in the caregiving literature (mainly in the mental health field) have focused on adaptive qualities, strengths, burden resilience and rewards of family caregiving. Recent studies identified a number of variables as protectors against caregiving burden and stress, including: socio-demographic characteristic of the caregivers, clinical characteristics of the illness, social support and personal resources (Magliano et al., 1998; Saunders, 2003). However, few studies in the field of substance abuse, mental health or dual-disorders have evaluated the role of the caregiver-care recipient relationship in the caregiving process.

The significance of interpersonal relationship and social support for well-being, as indicated in numerous studies, provides a basis for suggesting that the quality of relationship has a role in the caregiving stress process and its psychological outcomes
Caregiver – care recipient relationships are of particular importance in light of the fact that caregivers are more likely to become more constrained in their social and leisure activities due to their caregiving responsibilities, and consequently are at higher risk of becoming isolated from their usual companions (Johnson & Catalano, 1983; Mueser et al., 2003). Accordingly, the quality of the existing relationships, including the one with the care-recipient, becomes more prominent in the caregiver’s life (Kiecolt-Glaser, Dyer, & Shuttleworth, 1988). Moreover, Shinn, Lehmann, & Wong (1984) have suggested that since social undermining in intimate relationship (i.e., among married couples) encompasses a direct threat to well-being, negative interpersonal interactions should be conceptualized as a stressor. Thus, whereas greater positive interaction (i.e., support) may have a buffering/protective effect on caregivers’ well being, greater negative interaction (i.e., undermining of the caregiver by the care recipient) may have an adverse effect on caregivers’ mental health. Additionally, studies in the gerontology field have indicated that the quality of caregiver-care recipient relationship has an important role in caregivers’ involvement with the client. Caregivers’ positive perception of the relationship quality has been shown to impact the quality of the provided care (i.e., abuse or neglect) (Reay & Browne, 2001) as well-as the continuance of care (Spruytte, Van Audenhove, & Lammertyn, 2001; Young, Kolsloski, & Montgomery, 1998).

This study will focus on an understudied population. Few studies have focused on co-occurring substance use disorders and mental disorders among women, and very few studies have focused on families of women with dual disorders. This study aims to enhance understanding of caregiving upon family members for women with substance
use disorders or co-occurring substance use and mental disorders. Two central questions will lead the investigation: The first question will focus on predictors of caregivers’ involvement with the client. Specifically, the study will examine what are the relationships between primary caregiving stressors (i.e., client diagnosis, client behavioral problems, and substance use and mental health problems,), and caregivers’ well-being (i.e., burden and depressive symptomatology) to caregivers’ involvement with the client. Furthermore, the study will examine whether the linkage between caregiving stressors and involvement is mediated by the caregivers’ well-being. That is, does caregivers’ well-being mediate the association between caregivers’ stressors and the amount of caregivers’ involvement with the client?

The second research question aims to determine whether the quality of caregiver-care recipient relationships plays a moderating role in the caregiving process among family caregivers to people with dual disorders. While quality of relationship can be viewed as the outcome of the stressors associated with the caregiving role, it can also be viewed as “providing a particular lens through which stressors are interpreted or appraised” (Lawrence, Tennstedt, & Assmann, 1998, p. 150). That is, in the caregiving process, the quality of relationship may be harmed by the continuous stress, but can also buffer its consequences. Thus, the study will examine whether quality of caregiver – care recipient relationships moderates relationships between the three domains of the caregiving process: caregivers’ stressors, caregivers’ well being, and the amount of caregivers’ involvement with the client. Specifically, the study will aim to answer the following questions: Does caregivers’ perception of their quality of relationship with the care-recipient (CR) moderate the association between stressors and caregivers’ well-being; does the quality of
the relationship moderate the association between caregivers’ well-being and the amount of involvement with the client; and does the quality of the relationship moderate the association between caregivers’ stressors and the amount of involvement with the client?

This study is of significant relevance to social work and social welfare. Answers to the research questions offered by this study are of significant importance to client, family members, service provider as well as policy makers in the field of substance abuse and dual disorders. First, while research findings indicate that persons with substance use or dual disorders experience better outcomes (e.g., course of illness, number and frequency of relapses, relationship satisfaction, or residential situation) when their family members continue to be involved in their lives (as compared to clients whom families are not involved in their lives), little is known about what predict family involvement with this client population. A better understanding of the process leading to involvement may enable clinicians as well as policy makers to develop and implement more focused interventions, which will promote family involvement with their relatives with substance or dual disorders. For example, identification of specific stressors, as well as mapping the background situation (e.g., living situation, financial situation) with regards to the caregiver and the client, is a first step for planning adequate interventions. Recognizing which stressors are unchangeable (such as the illness itself), and working toward the change of those that are changeable (such as providing family members with psycho-educational information as to the nature of the problem), may be a further step. Furthermore, appreciation of the moderating role of the caregiver-care recipient quality of relationship may focus the intervention on the utilization of existing resources (i.e., supportive interactions) and on the development or alteration of required ones (e.g., development of more supportive interactions, alternation of undermining patterns of communication), for the strengthening of caregivers’ and care-
recipients’ well-being, as well as the promotion of caregivers’ involvement with their ill family member.

Family members play a crucial role in the care-providing arena; providing services that otherwise would have been called to be delivered (and paid for) by health and social services. Hence, informal family care is not only significant in the client and family level, but also in the communal and national level. As such, there is a considerable importance in ensuring that caregivers receive adequate support to enable them to continue to fulfill their caregiving role, as well as maintaining their own health and well being. Hence, a better understanding of the caregiving process and its impact upon families of people with dual disorders is of special importance for clients, families, service delivery professionals and the community in large.

In order to answer the research questions this study will utilize the conceptual underpinnings of stress process model as well as conceptual themes based on the social support framework.
CHAPTER 2: CONCEPTUAL MODEL

The Stress Process Model – Historical Development in the Caregiving Field

The growing awareness of increasingly complex demands being placed on family caregivers of adults with chronic illnesses (such as mental or substance use disorder) has drawn the focus of researchers in a variety of academic and applied disciplines to the caregiving issue. Given the concern with patient problems and stresses, initial discussions and research in the field were focused on the family caregivers’ role as facilitators of patient well-being as well as their potential impact on patient’s illness outcomes, such as substance use reduction or shorter psychiatric hospitalization (Clark, 2001; Lowyck, Hert, Peeters, Gilis, & Peuskens, 2001; Schofield et al., 2001). With the growing recognition of the potential heavy emotional (e.g., burden, depressive symptoms) and instrumental (e.g., time, money) tolls paid by family members, caregiving research has further developed along two major streams: the first focused on the caregiving process itself, with emphasis on the outcomes of the caregiving role for the caregiver (such as stress, burden, or physical health); and the second focused on the effect of interventions designed to address caregiver and patient needs and to ameliorate caregivers’ well-being (Biegel et al., 1991).

This study emerges out of the first stream of inquiry and focuses on the effects of the caregiving role on family caregivers of women with substance abuse or comorbid substance and mental disorders. The outcomes of the caregiving experience (i.e., caregivers’ well being and degree of involvement with the client) will be examined and analyzed in light of the caregiving stress model.
Application of the Stress-Process Model to Family Caregiving

The dominant conceptual model for caregiving assumes that chronic illness and physical disability are stressful situations for both patient and caregiver and, as such, can be studied within the framework of stress process models (Biegel & Schulz, 1999). Based on the notion of caregiving as “potentially a fertile ground for persistent stress” (p. 583), Pearlin et al. (1990) have offered the caregiving stress process model. The conceptual model of the current study is based on this caregiving stress process model (Pearlin, et al., 1990). In general, the caregiving stress process model focuses the attention on the inter-relationship among various conditions that may lead to personal stress of caregivers and the ways in which these relationships develop and change over time (Pearlin et al., 1990). Four domains make up the stress process, each comprising multiple components. The domains are:

(a) **Background and context of stress** – This domain consist of contextual or situational aspects that contribute to the variability in caregiver outcomes. Various socio-economic and personal characteristics are seen as potential influential factors in the entire stress process. Such factors include, for example, caregiver age, gender, education level, occupation and income level.

(b) **Stressors (primary and secondary)**– Pearlin and his colleagues (1990) define stressors as “…the conditions, experiences, and activities that are problematic for people; that is, that threaten them, thwart their efforts, fatigue them, and defeat their dreams” (p.586).

The caregiving process model suggests that two types of stressors drive the process: First, *primary stressors* are made up directly of the needs, demands, and tasks
associated with the actual provision of care. Those include, for example, illness characteristics, such as behavioral problems, cognitive impairment, illness trajectory, and degree of care receiver’s dependency. As primary stressors continue to consume caregivers’ resources, other problems in other social roles (such as conflicting demands between the caregiving role and caregivers’ other roles, such as occupational demands, parenthood demands, or other social interactions) and feelings about self (such as role captivity or loss of self) develop or intensify, which are referred to as secondary stressors.

(c) Mediators of stress – This domain consist of contextual or situational aspects that contribute to the variability in caregiver outcomes. Such outcomes are thought to be mediated by a variety of factors. The caregiving stress model discusses two principal mediators: social support and coping strategies.

(d) Outcomes or manifestations of stress are the cumulative consequences of being exposed to the stress of caregiving. Different outcomes are discussed in the literature concerning caregiving outcomes, including burden, physical health, depression, and the ability to sustain social roles.

The Role of Quality of Relationship in the Caregiving Process

The stress process model of caregiving discusses the role of social support as directly effecting or mediating the negative consequences of stressors, such those associated with the caregiving process (e.g., burden, depression, or health) (Pearlin, et al., 1990; Saranson, Saranson, & Pierce, 1990). Thus, having support from others may directly enhance individuals’ well-being, and may also facilitate coping with stress (Rook, 1984).
The positive effect of emotional support on psychological well-being (e.g., for review, see Cohen & Wills, 1985) and physical health (e.g., for review see House et al., 1988) is well demonstrated in the caregiving as well as in the general literature of stress. Emotional support is believed to enhance feelings of well-being by providing the individual with a sense of being cared for, loved, valued and appreciated by meaningful others, by enhancing feeling of belonging, of self-worth and self-esteem (Sarason et al., 1990); as well as by having others to turn to for help or to discuss personal difficulties and problematic events (Rook, 1984; Cohen & Wills, 1985).

Nevertheless, interpersonal relationships encompass potential costs alongside their rewards. Social exchange models suggest that social interaction involves both benefits and costs for both participant in the support exchange situation – provider and recipient (Blau, 2003; Coleman, 2003). Providers are rewarded by the association itself as well as by the social approval of providing support, but their costs are associated with time, resources, and at times money consumed in the supporting process. Recipients benefit from the supportive resources provided to them, but following norms of reciprocity and equity they are obligated to pay back (reciprocate) the support received. Following exchange theories, the inability to reciprocate support (due to lack of physical, financial, or emotional resources) may reduce the likelihood that people will ask for support as well as the amount of support they will receive (Coleman, 2003).

Thus, while social support has been shown to play a significant role in the caregiving stress process – encompasses potential benefits and costs to the caregiver facing caregiving stress, the focus has been on social support given to the caregiver from various individuals in his/her social network, other then the care-recipient (e.g., for review see
House et al., 1998; Sarason, et al., 1990). Furthermore, increasing criticism in the caregiving literature led to the study of caregiving gratifications and gains (in addition to the costs) for the caregiver, resulting from the interaction with the care-recipient (e.g., Greenberg et al., 1994; Chen & Grenberg, 2004). Nonetheless, little attention has been given to the dyadic relationships between the caregiver and the care-recipient, and to its impact on the caregiving stress process, with only a few studies in this area (e.g., Baronet, 2003; Horwitz et al., 1992; Li & Seltzer, 2003; Lyonette & Yardley, 2003; Spruytte et al., 2001).

The quality of relationships concept in the caregiving literature addresses both positive qualities (i.e., emotional support) and negative qualities (i.e., emotional undermining) of interpersonal caregiver-care recipient relationships. Positive qualities of the relationships are characterized by exchange of concern, appreciation, respect and affirmation that one is valued and understood (Cohen & Wills, 1985). Negative qualities of the relationships, or social undermining refers to “unpleasant social encounters that are characterized by criticism, rejection, competition, the violation of privacy, and the lack of reciprocity” (Rook, 2003, p.88).

Even though negative interactions occur less often in caregiving families, compared to positive interactions (e.g., Townsend & Franks, 1995), they provoke considerable distress when they do occur (Rook, 1998). Furthermore, in close relationships, support and conflict co-exist, and the closer the relationship, the more there is of both. The literature of close relationships as well as the caregiving literature often demonstrates that negative interpersonal interactions have stronger effects on well-being compared to positive interactions (Okun & Keith, 1998; Rook, 1984, 1990; Townsend & Franks,
1995; White et al., 2000). Moreover, negative interactions within close relationships (compared to less significant relationships) have a greater negative effect on well-being (Abbey, Abramis, & Caplan, 1985; Vinokur & van Ryn, 1993).

Only several studies in the field of mental health and gerontology have examined the impact of quality of caregiver-care recipient quality of relationship on caregivers involvement with the client. However, results indicate that supportive quality of relationship is associated with higher levels of involvement (Horwitz et al., 1992; Spruytte et al., 2001), whereas negative quality of relationship was associated with lower levels (and withdrawal) of involvement (Spruytte et al., 2001; Young et al, 1998; Williamson & Shaffer, 2001).

As discussed earlier, family caregivers to individuals with substance or dual disorders often carry an extensive array of responsibilities and commitment associated with their caregiving role. Those responsibilities are likely to constrain their social and leisure activities, and consequently they are put in higher risk to become isolated from their usual companions (Clark, 1996; Mueser et al., 2003). Therefore, the quality of the caregiver care-recipient dyadic relationships is of significant importance in the study of family caregivers to people with substance or dual disorders.

The importance of interpersonal relationships for caregivers’ well-being and to some extent, to caregivers’ involvement with the client; as well as the embedded potential for both rewards and costs in close relationships provide a basis for suggesting that quality of caregiver-care recipient relationships may have a moderating role in the caregiving stress process and its outcomes.
Research Model

The current research model is based on the caregiving stress process model (Pearlin et al., 1990, discussed above). Nonetheless, whereas the stress process model focuses on caregivers’ well-being as its central outcome, the current study offers additional outcome of the caregiving stress process: caregiving involvement with the care-recipient.

The research model applies the term involvement, rather then support, as this term allows incorporating aspects of family interactions that are not traditionally examined in the support literature (Townsend, Biegel, Ishler, Wieder, & Rini, 2006). Family involvement with the care-recipient refers in the model to the amount (frequency of contact) and nature (supervision) of the caregivers’ participation in the life of the care-recipient.

Family involvement with clients with substance abuse or dual disorders has been shown to have positive impact on clients substance abuse outcomes (Clark, 2001) as well as the management of psychiatric symptoms and hospitalization (Schofield et al., 2001). However, several studies in the fields of substance abuse and mental health have indicated that higher levels of caregivers’ stress (Biegel, Johnsoem & Shafran; Fals-Stewart, O’Farrell, Birchler, Cordova, & Kelley, 2005) and lower levels of caregivers’ well-being (Pickett Cook, Cohler, & Solomon, 1997; Reinhard & Horwitz, 1995) may negatively impact family members’ involvement with the client.

Thus, borrowing from the stress process model, the current research model (see Figure 2) suggests that family caregivers’ involvement with the care-recipient is a function of caregivers’ stressors (Path A), as well as caregivers’ well-being (Path C) (in conjunction with social-contextual variables). Following Pearlin et al. (1990) stressors
are conceptualized as “conditions, experiences, and activities that are problematic for people” (p. 586). Well-being is defined as bi-dimensional concept, including caregivers’ subjective burden (the emotional cost of having a relative with substance or dual disorder in the family (Hoenig & Hamilton, 1996)) and depressive symptomatology.

More specifically, the model suggests that care-recipient disorder related stressors (i.e., care-recipient’s diagnosis, behavioral problems, and perceived substance use and mental health problems) are expected to impact caregiver’s well-being (subjective burden & depressive symptomatology) (Path B). In turn, both caregiver’s stressors (Path A) and well-being (Path C) will impact caregivers’ involvement with the care-recipient.

It is important to note that the model recognizes the role of objective burden (i.e., control variable in the model) as a potential caregiver stressor. However, restricted statistical power (due to relatively small sample size), and the fact that objective burden is not a direct ‘care-recipient’s disorder related factor’, led to the decision to use “objective burden” as a control variable and not as a primary stressor.

Furthermore, the model suggests that caregiver’s well being plays a mediating role in the linkage between caregiving stressors and caregiver’s involvement with the care-recipient.

While the caregiving stress process recognizes that social support plays an important mediating role in the caregiving process and contribute to the variability of its outcomes it does not offer differentiation between the impact of positive (i.e., supportive) and negative (i.e., undermining) social interaction given by the care recipient to the caregiver, on caregiver’s outcomes. The more recent literature of close relationship calls attention to the potential role that both positive and negative aspects of interpersonal
interaction may play in different situation of close relationship, such as caregiving (Rook, 1990; Townsend & Franks, 1997; Vinokur, & van Ryn, 1993). Therefore, this study model will examine the role of relationship quality in the caregiving process. Following the idea that close interpersonal relationship may serve a dual function – generating stress as well as buffering its consequences (Rook, 1984, 1990) – the study’s model suggests that relationship quality will play a moderating role within the different linkages of the caregiving stress process model (i.e., alter the association between the model components). Explicitly, this model aims to explore whether relationship quality moderates the association between stressors and caregivers’ well-being (Path 2); the association between caregivers’ well-being and involvement with the care-recipient (Path 3); and the association between caregivers’ stressors and their degree of involvement with the care recipient (Path 1).
Figure 1: Research Model - *Predictors of Involvement & the Role of Caregiver – Care Recipient Quality of Relationship in the Caregiving Situation of Families of Women with Co-Occurring Substance and Mental Quality of Relationship*.

**Primary Stressors (Disorder(s) related factors):**
- Diagnosis (DD / SA)
- Behavioral problems
- MH/SA problems (caregivers’ perception)

**Quality of Relationship**
- A

**Caregiver Well-being:**
- Subjective Burden
- Depressive Symptomatology

**Caregiver Involvement with the Care Recipient:**
- Frequency of contact
- Supervision

**Note:** The model will control for selected socio-economic, demographic, and other background characteristics of the caregiver and the care recipient. These include: type of relationship, living arrangement, inpatient/outpatient treatment, overall social support, caregiver’s employment status, and caregiver’s objective burden (frequency of everyday disturbances/interruptions).
CHAPTER 3: LITERATURE REVIEW

Framework

Relatively little research has been focused on families of persons with dual disorders. This lack of research is important because researchers’ believe that individuals with dual disorders put more demands on families for support and assistance, compared to persons with a single diagnosis (Clark, 1996; Drake & Wallach, 2000). Due to the scarcity of dual disorder research, the following literature review will also present research from the fields of mental health, substance abuse, as well as relevant caregiving studies from the gerontology field that pertains to the caregiving stress model.

In order to further explore the current state of knowledge and to illuminate gaps in the research literature of the caregiving process and its outcomes for family caregivers of individuals with dual disorders (DD), this chapter is divided into several main parts: The first part will discuss in depth the issue of dual disorders among women. The purpose of this section is to provide a broader picture of the prevalence, complexity and special needs as they manifest among women with co-occurring disorders. The second part of the review will follow the proposed research caregiving process model (Paths A, B, C in the research model)(see p. 24): (a) existing evidence on the nature and predictors of family involvement with clients with mental illness, substance use disorder, and dual diagnoses, will be presented. Specifically, the review will focus on caregiving stressors associated with caregivers’ involvement with the care-recipient (Path A); the association between caregiving stressors and caregivers’ well-being (Path B); and the impact of caregivers’ well-being on caregivers’ involvement with the care-recipient (Path C). (b) The second part of the caregiving process discussion will present evidence that assesses the possible
role of caregivers’ well-being as mediator between caregivers’ stressors and involvement with the care-recipient. The third part of the literature review will focus on the role of the caregiver-care recipient quality of relationship in the caregiving process model (Paths 1, 2, 3 in the research model).

Women with Co-Occurring Substance and Mental Disorders - Background

The majority of clinical research has been focused on co-morbidity between substance use disorders and externalized mental health disorders (Merikangas & Stevens, 1998); thus leaving a gap in the study of co-occurring substance use disorders and psychopathology of disorders that are more prevalent among women (i.e., internalized disorders, such as major depression, generalized anxiety or PTSD). Therefore, the following review of the literature will also draw upon research on clients with co-morbid substance use disorders and severe mental illnesses (mainly bipolar disorder, schizophrenia, and schizoaffective disorders).

Co-occurring substance and mental disorders present a range of challenges, adverse outcomes and treatment considerations for people with dual disorders. Substance abuse among persons with mental illness can have various adverse outcomes on the client’s life, including mental illness outcomes (e.g., increase risk of suicide and depression, increased risk for relapse and rehospitalization); physical health outcomes (e.g. dual diagnosis is associated with increased risk for HIV or hepatitis infections in addition to the direct effect of alcohol and drugs use on health); and social functioning outcomes (such as housing instability, homelessness or involvement in illegal activities). The effects of co-occurring substance use disorders among individuals with mental illnesses appear to exacerbates the negative outcomes associated with only one disorder (i.e., physical and...
mental health as well as social functioning) (Mueser, et al., 2003). Nonetheless, important differences exist between men and women with co-occurring disorders which results in different needs. The high prevalence of co-occurrence mental and substance use disorders among women calls for further attention to the gender-specific problems, difficulties and needs experienced by women with dual diagnosis:

**Course of substance abuse among women.** The course of substance-use disorder, particularly alcohol-use disorder, seems to be different for women compared with men. Women progress more rapidly from first drink to regular drinking, to regular intoxication, and to severe dependence (Sannibale & Hall, 2001), as well as to the realization of problem drinking and treatment seeking (Helzer et al, 1991). Although men generally drink alcohol in larger amounts than women, alcohol-dependent women often experience greater physical impairment once they begin to drink heavily (National Institute on Alcohol Abuse and Alcoholism, 1999). There is some evidence that women may be more predisposed than men to the physical harm associated with the use of substances. For example, relative to their lower prevalence of excessive drinking, women have a higher prevalence of alcohol-related problems than men (Glenn & Parsons, 1989). Women develop alcohol-related liver disease, heart disease, and brain disorder earlier than men. Furthermore, among pregnant women alcohol and drug use not only presents a risk of intoxication but may also harm the development of the fetus (Brady & Randall, 1999; Chander, & McCaul, 2003).

**Victimization among women with dual diagnosis.** Women with co-occurring disorders are more likely to experience emotional, physical, or sexual victimization compared to women in the general population (Gearon & Bellack, 1999) and to men with
co-occurring disorders (DiNitto et al., 2002). Baker (2001) estimates that “the percentage of women in treatment for substance abuse with past histories of sexual abuse range as high as 75% and as high as 81% for women institutionalized with serious mental illness” (p. 27). Due to the high prevalence of physical and sexual victimizations, women with co-occurring disorders are at higher risk to further develop post traumatic stress disorder (PTSD) (Brady & Randall, 1999; Gearon, Kaltman, Brown, & Bellack, 2003; Gil-Rivas, Fiorentine & Anglin, 1996).

Familial situation. Compared to men, women with co-occurring disorders are more likely to be caring for dependent children (Brunette & Drake, 1997). Furthermore, compared to men, women with dual disorders are more likely to be living with a partner who has a substance use problems. Ravndal & Vaglum (1994) found that drug addicted women who do less well in treatment are more likely to have physically violent partners. Furthermore, Powis et al. (1996) found that many women injectors had been given their first injection by a male sexual partner.

Finally, although substance use disorders are socially stigmatized for both genders, women experience more social disapproval, as substances-consuming behavior is considered to be incompatible with the traditional female role, such as motherhood (Reed, 1985). In addition, mental-illness is a highly stigmatized attribute in the western world. The stigmatized disorders may hinder women willingness to reach for formal or informal support (Chander & McCaul, 2003; Copeland & Hall, 1993).

To summarize, it has been recognized that women experience significant medical, physiologic, psychological, and social difficulties in the face of co-occurring psychiatric and substance use disorders and present with special and extended needs. Family
members may have a crucial role in providing support to help address at least some of these needs. The next section will focus on the role families play in the lives of their relatives with co-occurring disorders.

The Caregiving Process of Families of Individuals with Mental Illness, Substance Use Disorder, and Dual Disorders

*Family Involvement with Family Member with Dual Diagnoses, Mental Illness, and Substance Use Disorder*

Family members play a significant role in the lives of their family members with dual disorders. While families are often the source of economic, social and emotional assistance to their family members, their own lives can be considerably affected by the caregiving role (Clark, 1994; Dixon, McNary, & Lehman, 1995). The financial burden and emotional distress accompanying coping with a relative with dual disorders may "take a huge toll – often overwhelming family coping, and leading to the breakup of families, the loss of support and home instability for many clients [and their families]" (Mueser et al., 2003, p. 204). Despite great demands and stress experienced by family caregivers many families continue to be involved with their ill family members (Clark, 1996). Why some families continue providing instrumental and emotional care to their relative with mental, substance or dual disorders in while others might withdraw from the caregiving role over time needs further examination.

Two general dimensions of involvement with the care-recipient are often indicated in the caregiving literature. One is more subjective, and focuses on emotional closeness, feelings of intimacy, care and personal warmth. The second focuses on provision of concrete forms of material, financial, or other kinds of assistance (Fisher, Benson, &
Tessler, 1990). Tessler and Gamache (1994) have further refined the second dimension of tasks provided by families. One type of task is related to routine care. Care tasks include provision of transportation, meal preparation, and time and money management. The other type of care is related to control, and often is associated with behavioral problems, substance abuse, night disturbances, as well as other troublesome behaviors. With regards to this typology of caregiving involvement, Clark (1996) suggests that whereas it is reasonable to expect “that persons with dual disorders would require more efforts to control behaviors than people with mental illness alone. It is less clear how dual disorders might affect the amount of general supportive care required” (p. 68).

The following review will present evidence pertaining to the significance of family involvement for persons with dual disorders, mental illness or substance disorders, and predictors that may facilitate or hinder such involvement.

The Significance of Family Caregivers’ Involvement - Client’s Outcomes

Studies in the field of dual disorders, substance disorders and mental health have examined the relationship between family involvement with the client and clients’ outcomes. Research in substance use and dual disorders has examined the association between family involvement and substance use outcomes (i.e., relapse, frequency of use and recovery). Studies of clients with dual disorders have also examined the relationship between family involvement with the client and outcomes such as psychiatric symptoms and hospitalization. Studies in mental health have shown the association between family involvement and clients’ homelessness.

Clients’ outcomes of family involvement for persons with dual disorders. Family involvement has been shown to be associated with various positive outcomes for persons
with co-morbid mental illness and substance use disorders. Clark (2001) explored the relationship between family financial expenditure and hours of care and substance use outcomes among clients with dual disorders. Findings show that higher family financial expenditure and more hours of care were associated with clients’ reduction in substance use over 3 years. However, while associated with substance abuse reduction, family involvement was not associated with any change in clients’ psychiatric symptoms.

Frequency of contact between family members and individuals with dual-disorders has been shown to be associated with length of hospitalization. Schofield, Quinn, Haddock, & Barrowclough (2001) followed clients with (n=61) and without (n=50) regular contact with family ‘carer’. ‘Carer’ referred to an informal caregiver with whom the client has weekly contact of 10 hours or more. Patients with no ‘carer contacts’ had significantly longer hospital stays compared to patient with ‘carer contacts.’

Client outcomes of family involvement for persons with substance use disorders. Family involvement with family members with substance abuse disorders is associated with recovery and reduced risk for post-treatment relapse. For example, Ellis, Bernichon, Yu, Roberts, & Herrell (2004) followed women’s substance abuse relapse within 6 months after discharge from residential treatment. The results showed positive family involvement, such as family members providing help and getting along with the woman during the post-discharge period significantly decreased the likelihood of relapse.

Similarly, in a 5-year follow-up of substance use outpatient treatment program, patients in recovery and patient who were not recovered were compared on their perception of their family and friend involvement in their lives. Compared to patients who experienced relapse post treatment, patients in recovery were more likely to report
their family as involved in their lives. In particular, they perceived their family and friends as providing them help with problems, help in emergencies, and providing encouragement to stop using drugs (Flynn, Joe, Broome, Simpson, & Brown, 2003).

Client outcomes of family involvement for persons with mental illness3. Several studies in the mental illness field have showed the association between lack of family contact and higher risk for homelessness. In two consecutive case-control design studies, Caton et al., (1994, 1995) examined the role of family involvement (measured by frequency of contact, material support, emotional support, and companionship available from family members) as a buffer for homelessness among individuals with severe mental illnesses. Results indicated that clients with lower level of family involvement were at higher risk for homelessness (Caton et al., 1994; Caton et al., 1995). Similarly, Odell and Commander (2000) studied the risk factors for homelessness among individuals with psychotic disorders. Key risk factors for homelessness were absence of contact with family members and substance use.

Caton et al. (1995) suggest that the finding that comorbid substance abuse increases the risk for homelessness, among men and women, indicate a mediation explanation: the effect of substance abuse in addition to mental illness may decrease family support, which in turn increases the likelihood to homelessness. The results of these studies suggest that substance abuse and family involvement are significant factors in the prevention of homelessness among individuals with severe mental illness.

Overall, research findings indicate that persons with co-occurring disorders, substance use disorders, or mental illness for whom their family members continue to be

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3 The mental health literature about families of clients with mental disorders has been primarily focused on severe/serious mental disorders. Therefore this review presents mainly evidence concerning persons with severe mental illnesses.
involved in their lives experience better outcomes (i.e., substance abuse outcomes, such as recovery and relapse reduction, shorter length of hospitalization and reduced risk for homelessness) compared to clients whom families are less or not at all involved with them. Therefore, a better understanding the predictors of such involvement has important implications for clients, family caregivers, treatment providers and policy makers. A better understanding of the process leading to family involvement may enable clinicians as well as policy makers to develop and implement more focused interventions, which will promote family involvement with their dually diagnosed relatives.

Nonetheless, it is important to note that, overall, little is known about the levels and types of involvement that families have with their relatives with co-occurring disorders. The relative small number of studies on the impact of family involvement with clients with substance abuse or dual disorders, in addition to the inconsistency in the concept operationalization (i.e. involvement) highlights the need for further investigation in this field.

**Predictors of Family Involvement with Family Members with Dual Diagnoses, Mental Illness, and Substance Use Disorder**

The following review of the literature presents the central factors associated with family caregivers involvement with clients with dual disorders, substance disorders or mental illness. The review is organized following the study’s conceptual model, beginning with the relationship between caregivers’ stressors and involvement (Path A), following by review of the relationship between family members’ stressors and well-being (Path B) and family members’ well-being and involvement (Path C).
Family Caregiving Stressors and Family Involvement with the Care-Recipient (Path A).

A number of studies in the fields of dual disorders, substance disorders, and mental health have examined the impact of stressors experienced by family members on family members’ involvement with their ill relative. Across studies, clients’ behavioral problems (pertaining to mental illness and/or substance disorder) stand out as a central stressor impacting family involvement. For example, in an effort to understand what barriers or obstacles may hinder families’ involvement, focus groups were conducted interviewing family members to clients with mental illness (Biegel, Johnsen & Shafran, 1997). Client’s behavioral problems including refusal to participate in treatment, manipulation of the mental health system, or more passive behaviors that leads to situations in which the client is taken advantage of by others have been identified as central obstacles for involvement. Further more, client behavioral problems have been found to disrupt family functioning and interaction (e.g., money management difficulties and conflicts with other family members about financial priorities), leading to emotional isolation in families (Biegel, et al., 1997). Similarly, through interviews with family members to clients with dual disorders, Mueser and Fox (2002) examined obstacles that interfere with families’ provision of help to their relative. Several different themes emerged regarding stressors and needs of the families: a range of problems related to the dual disorders was emerged as barrier for family involvement. Those include: clients behavioral problems, difficulties in symptoms management, and high level of familial conflict.

Several studies have suggested that comorbid substance abuse problems among patients with mental disorders may lead to reduction and even withdrawal of family involvement with the client (Clark & Drake, 1994; Kashner, Rader, Rodell, Beck, Rodell,
& Muller, 1991). A retrospective study of randomly selected patients with schizophrenia who were discharged from a Veterans Affairs (VA) facility examined how family characteristics influenced the relationship between substance abuse and the use of inpatient psychiatric care. The findings suggested that family member’s difficulties which related to substance abuse (e.g., high level of conflict, refusal to discuss patient’s problems, cynicism and pessimism about the client’s future) are partially responsible for higher rates of hospitalization among patients with schizophrenia (Kashner et al., 1991).

Clark & Drake (1994) examined expenditures of time and money by family members of adults with dual disorders. Results indicate that families spend considerable amounts of money and providing direct care to their relative with dual disorders. However, as substance abuse become more severe, the amount of family monetary expenditure provided to the client decreased. Nonetheless, the amount of direct care (e.g., providing transportations, structuring leisure activities, or household activities like cleaning and cooking) appeared to be unaffected by the substance use. Thus, the research findings indicate that substance abuse problems may have a different impact on different types of involvement (monetary expenditure and provision of direct care).

However, some evidence indicates that substance abuse problems among patients with mental disorders may not impact the frequency of family involvement with the client. Dixon, et al., (1995) aimed to determine whether clients with severe mental illness differ in their family contacts and feelings about their family relationships from individuals with comorbid substance abuse. While objective indicators of family involvement (i.e., frequency of family contact) did not differ between the two groups, patients with co-morbid substance abuse reported feeling significantly less satisfied with
their family relationship and believed that obtaining family treatment was more important than the group with mental diagnoses only. The authors conclude that “substance abuse is associated with low levels of satisfaction with family relationships among persons with severe mental illness” (p. 458). The authors suggest that comorbid substance abuse problems among patients with mental disorders may reduce clients’ perceived family involvement, though not necessarily the actual frequency of family contact. Furthermore, Clark (1996) indicated that many families continue to provide instrumental and emotional support to their relative with dual disorders despite great demands and stress.

The review of the current literature illuminates the impact of several family members’ stressors associated with family involvement with a relative diagnosed with mental illness, substance use or co-occurring disorders. Those include: extent of client behavioral problems, the severity of mental disorder, as indicated by history of psychiatric hospitalizations, and the presence of substance use disorders in addition to psychiatric disorder (except for Dixon et al., 1995). Other background factors include: family members sense of isolation and lack of formal and informal support, client’s living arrangement and the nature of caregiver’s familial relationship to the client (Biegel et al., 1997; Clark & Drake, 1994; Dixon et al., 1995; Kashner et al., 1991; Mueser & Fox, 2002).

While the studies discussed above provide support to the current research model, suggesting that clients’ illness characteristics affect family caregivers’ involvement with the client, several aspects of the caregiving stress process remain unstudied. First, what is known about the impact of co-morbid substance use and mental disorders on families’ involvement with the client has come from research that has focused on clients with
severe mental illnesses (e.g., Biegel et al., 1997; Dixon et al., 1995; Kashner et al., 199).

Thus very little is known on the impact of co-morbid substance use and mental disorders on family involvement. Second, while the majority of the studies (but Kashner et al., 1991, that examined male clients only) have studied mixed-gender clients’ population, the nature of the studied psychopathologies (i.e., severe mental disorders) have led to a higher representation of men over women. Thus a further investigation is necessary concerning family involvement with women with dual disorders.

*Predictors of Well-Being among Family Caregivers to Family Members with Dual Diagnoses, Mental Illness, and Substance Use Disorder (Path B)*

While family members’ stressors can directly affect family levels of involvement with the care-recipient, stressors may also have indirect effects on family involvement, through their impact on family members’ well-being. The following section of the review will first present the concept of well-being (i.e., burden and depressive symptomatology), followed by a presentation of evidence of the association between family stressors and family members’ well-being.

*Burden and depressive symptomatology – Presentation of the concepts.* Chronic illnesses, such as mental illness, substance abuse or dual disorders, present a host of demands and costs to family members. The extended responsibilities of caregiving can place much stress and psychological burden on the families (Biegel, Milligan, Putnam, & Song, 1994; Clark & Drake, 1994; Mueser, et al., 2003; Ohaeri, 2003). Across chronic illnesses, many family caregivers report experiencing moderate to high levels of burden and/or depression.
A significant number of studies in the fields of mental illness, substance abuse and dual disorders have examined the relationship between family caregivers’ stressors and family members’ well being. Two central indicators of well-being are often discussed in the caregiving literature, named: burden and depressive symptomatology. The following review of the literature will focus on these indicators.

Numerous studies in the field of family responses to chronic illness have pointed to the burden placed on family members (Ohaeri, 2003). The underlying assumption of the family burden framework with respect to the caregiving role is that caring for a relative with chronic illness presents various difficulties that may create negative impacts on the family caregiver. This possible negative impact is perceived as *family burden* (Ohaeri, 2003; Rungreangkulki & Gilliss, 2000). Thus, providing care for relatives with chronic illness has been described as a potentially stressful experience that may erode the physical and psychological health of the caregiver (e.g., Aneshensel, Pearlin, & Schuler 1993; Ohaeri, 2003).

In general, the term *family burden* refers to the practical difficulties and mental pain that accompany the caregiver experience (Schwartz & Gidron, 2002). The concept of burden defined as the subjective perception of caregivers related to the degree of problems they experience in caring to their ill relative (Poulshock & Deimling, 1984; Webb et al., 1998). Hoenig and Hamilton (1996) offered a distinction between objective and subjective burden. The *objective burden* has been defined as the observable concrete cost to the family and their needs resulting from their relative’s health condition (e.g., financial loss, disruption of routines, or impairment of work efficiency). The *subjective burden* has been defined as the personal appraisal of the situation and the extent to which
caregivers perceive that they are carrying a burden (e.g., caregiver’s attitude toward the caregiving role or subjective feeling of difficulty). The subjective burden is the emotional cost of having a relative with chronic illness. The subjective burden includes a range of negative emotional reactions and negative psychological impact on the caregiver - stress, tension, anger, worry, displeasure, sadness, and feelings of guilt and shame. Whereas few studies in the mental health field found that a high level of objective burden related to a high level of subjective burden (Bulger, Wandersman, & Goldman, 1993), other studies found that a higher objective burden was not necessarily associated with a high level of subjective burden (Jones, Roth, & Jones, 1995).

In discussing family members’ burden it is important to note that while the substance abuse literature on family involvement has placed important emphasis on the impact of family involvement on client outcomes, it has not paid significant attention to the impacts of family involvement on family members themselves. In fact, the concept of “burden” of family members, a key variable in the stress-coping literature does not appear in the substance abuse literature. On the other hand, the mental health literature has placed significantly more emphasis on the impact of the care recipient’s illness on the family (Biegel, Ishler, et al., in press; Biegel, Katz-Saltzman, Tracy & Townsend, 2007).

*Depressive Symptomatology* - Depression is among the most prevalent of mental health problems in the general population (Devins & Orme, 1985). Approximately 18.8 million American adults, or about 9.5 percent of the U.S. population age 18 and older in a given year, have a depressive disorder (National Institute of Mental Health, 2001). However, most of the caregiving research has focused on depressive symptomatology.
and assessment of risk for clinical depression rather than providing a clinical diagnosis of depression.

The separation of the two outcomes, burden and depressive symptoms is important since burden (objective and subjective) is associated directly with the caregiving experience; whereas depressive symptomatology is associated with a broader contextual situation in which the caregiving role takes place (George & Gwyther, 1986; Poulshock & Deimling, 1984).

Caregivers’ Stressors and Caregivers’ Burden (Path B). Consistent evidence from studies of dual disorders, substance abuse and mental illness indicate that family member stressors can negatively impact family member well-being. Most of the research on the impact of chronic illnesses on families’ burden comes from the research on caregivers of persons with severe mental illness (e.g., Biegel et al., 1994; Ohaeri, 2003; Rungreangkulkij & Gilliss, 2000). Review of research in the field of mental illness and dual disorders indicate that the strongest and most persistent predictor of family members’ subjective burden is the extent of the clients’ behavioral problems. For example, Ohaeri (2003) has reviewed the published 2002 research on the caregiver burden in families to clients with mental illness. His findings indicate that the most significant predictor of family subjective burden is the severity of illness symptoms, especially the frequency of behavioral problems (e.g., Chakarabarti & Gill, 2002; Jiska, Wollhause, & Peter, 2002, as cited in Oheari, 2003). Similarly, Biegel et al. (1994) examined the predictors of objective and subjective burden among lower social class caregivers of persons with chronic mental illness. Findings indicated that higher levels of
client behavioral problems were associated with higher levels of overall caregiving burden as well as with higher levels of both, objective and subjective burden.

Three studies in the field of dual-disorders have examined the impact of family members’ stressors on family members’ burden. Consistent with finding from the mental illness field, Biegel, Ishler et al. (in press) found that the strongest predictor of caregivers’ subjective and objective burden experienced by caregivers’ to women with substance use disorder or dual disorder was the extent of clients’ behavioral problems. Furthermore, the nature of the diagnosis (i.e., substance use disorder or dual disorders) did not impact the level of burden experienced by the family caregiver (It should be noted that this study utilized the same study sample that will be utilized for the analysis of the current study).

Silver (1999) compared the emotional and social costs borne by families who cared for adults with dual disorders to families who cared for adults with severe mental illness alone. The researcher hypothesized that family caregivers for people with dual disorders would experience higher levels of subjective burden, stigma and depression compared to family caregivers of people with mental illness only. While family members reported moderate to high levels of subjective burden, no differences were found in the levels of burden and stigma experienced by the two groups. Silver (1999) suggested that the absence of differences in the level of burden may be due to the modification of stress by the caregivers' participation in support groups as coping and social support are regarded as mediators of stress. Similarly, Salyers & Mueser (2001) found no differences in the level of subjective burden experienced by family members to clients with schizophrenia to family members of clients with dual-disorders (schizophrenia and substance use).
Overall, family members to clients with dual disorders, substance abuse disorder, and mental health experience moderately high levels of subjective burden (Biegel, Ishler et al., in press; Salyers & Mueser, 2001; Ohaeri, 2003; Silver, 1999; Webb et al., 1998).

*Caregivers’ Stressors and Caregivers’ Depressive Symptomatology (Path B).*

Several studies on substance abuse disorders, mental health and dual disorders examined the association between family members’ stressors and family members’ levels of depression. Findings indicate that more severe illness outcomes (i.e., more frequent relapses, more frequent behavioral problems, and dual disorders) are predictors of higher levels of family members’ depression (Moos, Finney, & Gamble, 1982; Moos, Finney, & Cronkite, 1990; Silver, 1999; Song et al., 1997).

A longitudinal study followed alcoholics and their families for 2 years from the beginning of treatment (N=105) and compared their functioning to a socio-demographically matched community control group (N=105). The findings indicated that spouses whose partners relapsed experienced more functional difficulties and higher levels of stress compared to spouses of alcoholic partners who successfully resolved their drinking problem and to the control group. The spouses of those who relapsed reported higher levels of depression (Moos et al., 1982). A 10-year follow-up study of 62 spouses of alcoholics, and 85 controls yielded similar results (Moos, et al., 1990).

Similarly, Song et al., (1997) examined predictors of depressive symptomatology among lower socioeconomic status [SES] family caregivers of adults with severe mental illnesses. Over two-fifths of Caucasian caregivers and over one-quarter of African-American caregivers were found to be at risk for clinical depression (i.e., scored 16 or higher on the CES-D). The results indicated that higher levels of client behavioral
problems were associated with higher levels of caregiver depressive symptomatology (Song, et al., 1997).

With regard to family caregivers’ of persons with dual-disorders, Silver (1999) found that family members of individuals with dual disorders experience higher levels of depressive symptomatology, as compared to family members of individuals who diagnosed with mental illness alone.

Thus, research in mental illness, substance use, and dual disorders, provides evidence that family members stressors can negatively impact family members well-being. Nonetheless, overall, very little research has examined the effect of substance abuse on family members’ burden, or the predictors of family members’ depression among families to individuals with dual disorders. Furthermore, little attention has been given to families of women dually diagnosed or to families of clients with internalized mental disorders, such as major depression, generalized anxiety or PTSD. Of the three studies that examined the well-being of caregivers’ to individuals with dual disorders, two have focused on clients with severe mental illnesses (Salyers & Mueser, 2001; Silver, 1999), and only one have focused exclusively on families of women with dual disorders (Biegel, Ishler, et al., in press).

Caregiver’s Well-Being and Caregivers’ Involvement with the Care-Recipient (Path C).

The majority of evidence of the association between family caregivers’ well-being and caregivers’ involvement with their ill relative comes from caregiving research in the fields of mental illness and gerontology. Overall, research findings indicate different associations between caregivers’ well-being and involvement with care-recipient, depending on the specific well-being indicators. Whereas higher levels of family
members burden have been found to be associated with greater involvement with the client (Jutras, & Veilleux, 1991; Reinhard & Horwitz, 1995; Stueve, Vine, & Struening, 1997), higher levels of family members depression have been shown to be associated with less involvement with the client (Gallagher, Leitsch, Zarit, & Pearlin, 2000; Pruchno, Michaels & Potashnik, 1990).

For example, interviews with family members of adults with severe mental illnesses were conducted immediately prior to patients’ discharge from psychiatric hospitalization (Reinhard & Horwitz, 1995). The nature of the study was retrospective, as caregivers were asked to reflect on their caregiving experience over the past year. Findings indicated that higher degrees of overall experienced burden were associated with higher levels of overall caring behaviors, including concrete assistance (e.g., help with household tasks or loaning money) and emotional involvement (e.g., talking about personal problems). A similar association between the degree of perceived burden and level on involvement was reported by Stueve et al., (1997). The investigators examined the differences in perceived burden among Black, Hispanic and White groups of caregivers for adults with mental illness. Among all three groups, higher levels of burden were observed among those who were engaged in more caregiving activities.

Higher levels of burden had been shown to be associated with higher levels of involvement with the client among caregivers for elder individuals. Telephone interviews with a randomized sample of 294 people in Quebec involved informal caregivers to functionally dependent elderly. The results indicated that higher caregiving burden, was related to higher level of assistance provided, more participation in personal care
activities of daily living, and more interaction with professionals on behalf of the elderly person (Jutras, & Veilleux, 1991).

Several studies in the gerontology field have examined the association between family caregivers’ depression and their involvement with elderly care recipients. Data on the association between caregivers’ depressive symptomatology and involvement with the client has not been looked at in the mental health, substance use or dual disorders literature. Although not directly parallel to this study population, the literature cited following is relevant to this study in the sense that it examines caregivers’ level of depression and its association to their continuance involvement with the care-recipient. The reviewed findings can only point out a direction for further investigation, and cannot be generalized to family caregivers of individuals with substance or dual disorders.

Several studies have examined the predictors of institutionalization of elderly relatives. Out-of-home placement is the outcome of caregivers (mostly family caregivers) decision to relinquish care to professionals through institutional arrangements (Colerick & George, 1986). In order to examine predictors of the out-of-home-placement decision, spouses of demented clients were interviewed at two points of time (baseline and 12 month) regarding their caregiving experience, desire to institutionalize and actual institutionalization (Pruchno et al., 1990). Results indicated that compared to spouses who continued to care for their partners at home, the spouse caregivers who institutionalized their spouses had higher levels of depressive symptomatology. In a different study, primary caregivers of a cognitively impaired elderly relatives were assessed prior to and after the relative’s institutionalization (Gaugler et al., 2000). Caregivers who experienced higher levels of depressive symptomatology prior to the
placement were less likely to visit their relative in the nursing home. The authors concluded that higher levels of stress and lower levels of well-being predicted a decrease (and at times, withdrawal) in the degree of caregiving involvement (Gaugler, et al., 2000).

In sum, caregiving research in the fields of mental health and gerontology provide support for the association between caregivers’ well-being (i.e., caregiving burden, depressive symptomatology) and their involvement with their relatives with illness. The review of the studies indicated that while higher levels of depressive symptomatology were associated with the deterioration of familial involvement, higher levels of caregivers’ burden were associated with greater involvement with the client. Nonetheless, the lack of research about caregivers’ involvement and well-being in the substance abuse and dual disorder literatures restrict the generalizability of the existing findings to the process of caregiving for dually-diagnosed women. However, the observed associations between caregivers’ well-being and caregivers involvement with clients with mental illnesses or with elderly clients provides the ground/rationale for the examination of this association among family caregivers’ to women with dual disorders.

*Contextual and Demographic Characteristics*

The impact of social and contextual factors on family involvement with family members with substance or dual disorders had received little attention (Townsend et al., 2006). Nonetheless, several socio-contextual factors have been shown to directly impact family involvement with clients with dual disorders or mental illness, while others may affect family involvement indirectly, through their effect on caregivers’ well-being:
**Family Caregiver’s Kin Relationship.** The idea of hierarchy of obligations among kin suggests that different relatives experience different levels of obligation in providing care to dependent adult relative (Horwitz et al., 1992). The first line of support is provided by the spouse, followed by parents and children. Beyond spouse, parents and children, responsibilities for care become more ambiguous. Based on the idea of relational closeness, in comparisons between parents and siblings of adults with mental illness, several studies have found that although siblings provide less overall help, the amount of help they give is a stronger predictor of burden for them than for parents (Horwitz et al., 1992; Reinhard & Horowitz, 1995). However, Biegel et al. (1993) found no differences in levels of burden of parents and non-parents caregivers to clients with mental disorders.

The type of family caregiver’s kin relationship has been found to be associated with the level of family involvement with clients with dual disorders or mental illnesses. Two studies of families to persons with dual disorders (Clark, 1996; Clark & Drake, 1994) indicated that whereas persons who abuse drugs or alcohol more severely were less likely to live with relatives, parents were more willing than other relatives to house their child who is actively abusing substances (Clark & Drake, 1994). Similar patterns of caregiving involvement were reported in a study of siblings and parents to relatives with severe mental disorders (Horwitz, Tessler, Fisher, & Gamache, 1992). Adult siblings to brothers or sisters with mental illness were less involved and provided less assistance to their ill sibling as compared with parents.

The amount of assistance and involvement siblings provided depended on additional contextual variables, including: having to deal with competing roles (such as,
familial roles like parenthood, work obligations, or household maintenance), as well as their perception of the brother/sister needs. Siblings’ willingness to help their siblings seems to be more conditional, whereas parents’ willingness to provide assistance and support to their children seems to be more obligatory (Horwitz et al., 1992).

Living arrangement. Research findings about the association between living arrangements (co-residence) and caregivers’ well-being are inconsistent. Some studies in the mental health field indicate the family caregivers who live together with the client experience higher levels of burden (Tessler & Gamache, 1994) and higher levels of depressive symptomatology (Canuscio, Jones, & Kawachi, 2002) as compared to caregivers who live in a separate household. However, other evidences suggest that co-residence is not related to burden (Reinhard & Horwitz, 1995), or even relates to lower levels of caregiving burden (Greenberg et al., 1994). In a study of wives of alcoholics, Jackson (1954) found that living with an alcoholic spouse led to emotional disturbances caused by isolation from emotional support and feelings of inadequacy. Living arrangement has been found to be associated with levels of involvement as well. Clark & Drake (1994) examined family members’ involvement with their relatives with dual disorders. The amount of direct care provided by the caregivers’ to their relative was dependent on the relative’s living arrangement. Clients who lived with their families received more direct care compared to those who lived outside of their caregivers’ house.

Hospitalization and Treatment History. Research has found that care-recipients with dual disorders who reported more lifetime psychiatric hospital admissions received significantly less direct care from families compared to individuals with dual-disorders
who reported a lower number of previous psychiatric hospitalizations (Clark & Drake, 1994).

*Overall social* support. Several studies have indicated the protective effect of overall perceived social support on burden (Biegel, Ishler et al., in press; Provencher et al., 2003; Webb et al., 1998) and depressive symptomatology (Jackson, 1954; Song et al., 1997) among family caregivers to people with mental disorders, substance use disorders and dual disorders.

*Gender.* Findings generally indicate that women experience higher levels of burden (e.g., Grenberg & Greenley, 1997) and higher levels of depressive symptoms (Prunch & Resch, 1989) than men. However, Reinhard & Horowitz (1995) reported that gender did not have an independent impact on burden, among either caregiving parents or siblings.

*Age.* A number of studies found an association between burden and young age, with younger caregivers experience higher levels of burden (Bulger, 1993; Pickett, Cook, & Cohler, 1994; Provencher et al., 2003). Some restriction of this tendency was found in Reinhard & Horwitz (1995) study, which found that age is a significant predictor of burden (younger age) for parents, but not for siblings. Further, Biegel et al. (1994) did not find any association between caregivers’ gender or age and the level of subjective or objective burden. Moreover, Lefley (1996) states that the relationship between age and burden are complex, since caregiving stress also varies as a function of physical energy and other role demands which influenced by the caregiver’s age or by a particular stage in his or her life cycle.
Well-Being as a Mediator between Stressors and Involvement

The first overarching question of the current study concerns caregivers’ involvement with their relatives with substance abuse or dual disorders. As the review of the literature has discussed in length, family involvement is of considerable importance for the care-recipient’s life, providing a host of needs, including the meeting of basic needs (e.g., money management and residential solutions), illness management, and emotional support (e.g., Clark, 2001; Ellis et al., 2004; Schofield et al., 2001). Whereas the importance of family involvement is grounded in empirical evidence as well as in theoretical perspectives supporting the association between individual well-being and the social (family, friend, community) context (i.e., social support theory, environmental theories) (e.g., Biegel & Schultz, 1999; Boss, Doherty, LaRossa, Schumm, & Steinmetz, 1993), little is known about what predicts familial involvement with their relative with chronic illness. Moreover, even less is known about predictors of family involvement with women with dual disorders.

The overall conceptual model of the current study, based on the stress process model, suggests that family involvement with the client is predicted by caregivers’ stressors as well as by their well-being. Furthermore, the conceptual model proposes that caregivers’ well-being may play a mediation role in determining the association between caregivers’ stressors and family involvement. A mediation model suggests that the relationship between a predictor variable (i.e., stressor) and a criterion variable (i.e., involvement) is partially or totally accounted by a third (mediating) variable (i.e., well-being). A mediating variable functions as the driving force between the independent
variable and the dependent variable. In essence, mediators explain how or why the effects of interest occur (Baron & Kenny, 1986, p. 1176).

Several central themes have emerged from the literature review, offering the basis for the theoretical framework of inquiry: First, the review above indicates that caregivers’ stressors may impact caregivers’ involvement with the client. In addition, caregivers’ stressors have been shown to have potential impact on family caregivers’ well-being. Furthermore, evidence indicates that similar stressors are associated with caregivers’ involvement with the client and with caregivers’ well-being. These include the extent of client behavioral problems, and substance use in addition to psychiatric disorder. In addition, studies have shown that caregivers’ well-being is associated with family caregivers’ involvement with the client. Thus, in addition to the potential direct effect of family member’ stressors on family members’ involvement with the client, family members’ stressors may have indirect effect on family involvement, through their impact of family members’ well-being. This evidence is the ground for the model assumption that caregivers’ well-being may play a mediating role in associating stressors with involvement in the caregiving process.

The Role of the Caregiver – Care Recipient Quality of Relationship in the Caregiving Process

The following review presents the role of quality of relationship between caregivers and care recipients in the caregiving process. The review begins with a definition of the *quality of relationship* concept. In the second part, a discussion of the relationship between caregivers’ -care recipients’ quality of relationship and involvement with the client (Path 1 & 3 of the research model) is presented. Finally, the third part of the review
presents research findings concerning the association between the quality of the caregiver-care recipient relationships and caregivers’ well-being, as well as the potential moderation role of quality of relationship between caregivers’ stressors and well being (Path 2).

Quality of Relationships – Definition of the Concept

Quality of relationship encompasses both positive qualities (i.e., emotional support) and negative qualities (i.e., emotional undermining) of interpersonal relationships. Emotional support is conceptualized as caregivers’ perceptions of concern, appreciation, and respect from a role partner (care recipient). Furthermore, social support is conceived to incorporate the provision of emotional support, affirmation of the self, appraisal of the situation, instrumental support and information (Cohen & Wills, 1985). From the same transactional perspective, Vinokur and van Ryn (1993) have operationally defined emotional undermining as “…behaviors directed toward the target person that (a) display negative affect (anger, dislike), (b) display negative evaluation of the person in terms of his or her attributes, actions, and efforts (criticism), and (c) make difficult or hinder the attainment of instrumental goals” (p.350). Negative Interaction (i.e., emotional undermining) refers to “unpleasant social encounters that are characterized by criticism, rejection, competition, the violation of privacy, and the lack of reciprocity” (Rook, 2003, p.88).

One aim of the present study is to determine whether the quality of the caregiver-care recipient relationship moderates the relationships between the three main constructs of the caregiving process (i.e., Path C – stressors and well-being; Path B- well-being and involvement; and Path A – stressors and involvement). Moderating implies that the
relationship between two variables changes as a function of a third variable – the moderator. The first criterion for establishing moderation relationships is to establish that the potential moderator (i.e., quality of relationships) is an important predictor of the criterion under investigation (i.e., quality of relationship has a main effect on the outcome of interest – e.g., caregiver’s well-being and involvement with the care-recipient). The next step is to consider potential factors that may interact with the potential moderator (i.e., positive and negative interactions) to alter the outcome (Baron & Kenny, 1986).

**Quality of Relationship and Caregivers’ Involvement with the Care-Recipient (Paths 1 & 3)**

Overall, only a few studies have examined the association between caregiver-care recipient quality of relationship and caregivers’ involvement with the client. The majority of studies which have examined the impact of quality of relationship on caregiving involvement have been focused on the potential main effect model of social support (Horwitz et al., 1992; Spruytte et al., 2001; Williamson & Shaffer, 2001; Young et al., 1998). Furthermore, most of what is known about the association between caregivers-care recipients’ quality of relationship and levels of caregivers’ involvement with the client are based on the mental health and gerontology literature. Overall, existing evidence provides support for the association between better (i.e., positive) quality of relationships and higher levels of caregivers’ involvement with the client (e.g., Horwitz et al., 1992; Spruytte et al., 2001).

Quality of caregiver-care recipient relationships was indicated to have main effect on involvement among siblings of adults with mental illness. Horwitz et al. (1992) interviewed 109 respondents’ siblings who reported on their interactions with their
brother or sister with severe mental illness, in order to examine predictors of siblings’ involvement. Two dimensions of involvement provided by the respondent sibling to the patient were assessed: emotional involvement (i.e. “how deeply are you involved with [ill sibling]”) and provision of concrete support (i.e., assistance) (e.g., financial support, transportation, household). The quality of the sibling relationship was indicated by the extent of positive feeling and attitudes toward the client (e.g., “enjoy being with him/her”, “he/she makes me happy”, “very proud of him/her”). Multivariate analysis indicated that more positive feelings toward the ill sibling are significant predictor of both types of involvement (emotional and instrumental).

Horwitz et al. (1992) replicated the multivariate analysis analyzing the support provided by the parents of the same clients. The results showed that positive relationship quality was a significant predictor of only emotional support (not instrumental support), and the strength of this association was considerably weaker than the association between siblings’ relationship quality and involvement.

The results of the study suggest that, in an assessment of caregivers’ involvement with clients with mental illness, both the type of familial relationship (parents vs. siblings) as well as the dimensions of involvement (instrumental vs. emotional) should be considered. Concerning the quality of personal relationship, overall positive feelings and attitudes toward a relative with mental illness is a better predictor of siblings’ than of parental caregiving involvement. Nonetheless, positive quality of personal relationship was associated with more emotional involvement (among parents and siblings) and more instrumental support (among siblings).
The quality of the current caregiver-client relationship may influence the caregiver’s decision about whether to continue to provide care to his or her relative (Oyebode, 2003). Several studies in the field of gerontology which have studied predictors of out-of-home placement of elderly relatives with cognitive impairment support this notion.

In a longitudinal study, Spruytte et al., (2001) interviewed family caregivers (partner, children, and children-in-law) of elderly relatives suffering from dementia as to their preference for institutionalization and as to the actual institutionalization (at six months after the initial interview). The quality of current relationship was assessed in terms of warmth, conflict and criticism. Findings indicated that current relationship quality played a significant role in the out-of-home placement process. Poor current relationship quality (in terms of lower presence of warmth and higher presence of conflict or criticism) predicted higher caregiver’s preference for institutionalization, whereas good current relationship (in terms of higher presence of warmth and lower conflict or criticism) between the caregiver and the patient reduced the probability of out-of-home placement. Thus, negative quality of relationship was indicated to be a risk factor for actual out-of-home placement, whereas positive relationship can be viewed as a protective factors against withdrawal of in-home involvement (Spruytte et al., 2001).

Similarly, Young, Kolsloski, and Montgomery (1998) studied psychosocial factors associated with institutionalization of Alzheimer’s patients. In a longitudinal study (18 months) structured interviews were conducted with 575 family caregivers. The findings indicated that caregivers’ poorer attachment to patients (referred to as lower levels of
experienced closeness) was related to a greater desire for institutionalization and a higher likelihood to exercise out-of-home placement.

Structured interviews with 142 caregivers (98 wives, 44 husbands) to impaired elderly were conducted in order to investigate the association between the quality of the caregiver-care recipient relationship and the quality of care provided to the impaired spouse (Williamson & Shaffer, 2001). Quality of relationship was conceptualized as the degree to which the relationship was perceived as rewarding (e.g., caregivers feel happy with their relationship with the patient, feel emotionally close to the patient, or the patient makes them feel good about themselves). Results indicated that caregivers’ who perceived their relationships with the care-recipient to be currently more rewarding were less likely to treat the care-recipient in a potentially harmful ways. Thus, quality of current relationship plays a significant role in the determination of the quality of the provided care (Williamson & Shaffer, 2001).

Overall little is known about the relationships between the caregiver’s relationship quality with her or his dependent relative and the degree of his/her involvement in care provision. Whereas research has provided evidence for the main effect of the quality of caregiver-care recipient relationships on the continuity as well as the quality of care provision, little is known about the potential moderation effect of quality of relationship on caregivers’ involvement in the caregiving process. More specifically, little is known about the potential stressors or well-being indicators that may interact with the support and/or undermining presented in the caregiver-care recipient relationships, to alter the degree or direction of the provided care. Research on the association between quality of relationship and involvement has not examined potential underlying factors that may
interact with involvement. Nonetheless, the context in which these studies were conducted – caregiving situations, provide some consistency to the buffering model of social support. The buffering model suggests that support more strongly relates to well-being when individuals are under stress. Since caregiving situations have been characterized as potentially stressful situations (e.g., Biegel et al., 1991), the main effect of quality of relationship on involvement observed in caregiving situations provides the basis for assuming the potential buffering effect of support (Cohen & Wills, 1985).

Quality of Relationship and Caregivers’ Well-Being – The Main Effect and Moderation Models (Path 2)

The quality of caregiver – care recipient relationship has been found to affect caregivers’ well-being among different caregiving populations. Numerous studies have demonstrated the main effect of quality of relationships between family caregivers and care recipient on caregivers’ well-being.

Main Effect of Quality of Relationship on Caregivers’ Well-Being (Path 2)

Most of the evidence on the impact of the quality of caregiver-care recipient relationship on caregivers’ well-being comes from the mental-health and gerontology literature. Several studies have demonstrated the beneficial main effect of positive caregiver-care recipient interpersonal relationships on caregivers’ well-being (i.e., lower levels of subjective burden and depressive symptomatology) (e.g., Lawrence et al., 1998; Pickett, Cook, Cohler, & Solomon, 1997), and a few have demonstrated the negative main effect of negative interpersonal relationships on caregivers’ subjective burden (Baronet, 2003; Lyonette & Yardley, 2003).
Focusing on negative qualities of interpersonal relationships (defined as relationship difficulties in mutual understanding, acceptance, and communication) among families to person with mental illness, Baronet (2003) studied the effect of family interactions on caregivers’ appraisal of their caregiving situation. Results showed that higher levels of relationship difficulties predicted higher levels of subjective burden.

Pickett et al., (1997) studied the association between positive quality of parent-adult child relationship (defined as “parents’ positive ratings of their relationship with the adult child”) and parental subjective burden. It should be noted that the in this study quality of relationship was conceptualized as an outcome of burden, rather than its predictor. Results indicated that parents who reported lower levels of parental burden perceived the quality of their relationship with their child more positively than did those who experienced higher levels of burden. These results were consistent regardless of the child’s psychiatric status (with or without psychiatric diagnosis), and after controlling for parent’s and child’s background characteristics.

Utilizing a similar unidimensional construction of the quality of relationship concept, several studies in the aging caregiving literature have examined the impact of quality of caregiver – care recipient relationship on caregivers’ well-being. Lawrence et al., (1998) examined the role of positive caregiver – care recipient relationships quality (defined as general closeness, communication, similarities of views about life and the degree of getting along) in the caregiving stress process, among family caregivers to older relatives with disabilities. Better relationship quality predicted lower levels of depressive symptomatology and decreased sense of role captivity (defined as a
component of subjective burden), controlling for disability level, cognitive impairment, and behavioral problems (Lawrance et al., 1998).

Li and Seltzer (2003) examined the effects of positive quality of relationship between adult daughter caregivers and their aging parents on daughters’ depressive symptomatology. Relationship quality was conceptualized as “the daughters’ perceptions of positive sentiments in their relationships with their parents” (p. 490). Results indicate that quality of relationships with aging parents was associated with depressive symptoms among the daughters. Specifically, lower levels of positive sentiments with the aging parent were associated with higher levels of depressive symptomatology in the daughters, regardless of the severity of their parents’ disability (Li & Seltzer, 2003).

In order to study the role of relationship quality on caregivers’ perceived burden, 100 adult-child caregivers for frail parent or parent-in-law were interviewed (Strawbridge & Wallhagen, 1991). Relationship quality was operationalized as a unidimensional construct in which a higher score indicated better (i.e., more positive) relationship quality. Path analysis results demonstrated that better quality of relationship with the parent had direct and negative effect on caregivers’ perceived burden.

Similarly, Lyonette and Yardley (2003) have studied the effect of relationship quality on caregivers’ stress (referred to the amount of stress experienced by the carer in performing caregiving associated tasks), among women caring for elder parents or parents-in-law. Relationship quality was operationalized via one inclusive scale that included both positive aspects (e.g., respect, sympathy or understanding of the older relative) and negative aspects (e.g., frustration and conflict) of the relationship. Results
indicated that poorer quality of the relationship, as perceived by the caregiver, predicted higher levels of caregiving stress.

The studies reviewed above demonstrate the potential beneficial main effect of positive caregiver-care recipient relationships on caregivers’ burden and depressive symptomatology, as well as the potential detrimental effect of negative interpersonal relationships on caregivers’ experienced burden. However, none of the above studies have examined both positive and negative aspects of the caregiver-care recipient quality of relationships on caregivers’ well-being.

Few studies have demonstrated the differentiating effects of positive and negative aspects of relationship quality between caregivers and care recipients on caregivers’ well-being. Whereas negative ties in caregiving relationship were shown to have detrimental influence, positive ties have been indicated to have beneficial influence on caregivers’ well-being. Furthermore, evidence suggests that negative interactions are stronger predictors of caregivers’ well-being compared to positive interactions (Fiore, et al., 1983; Rook, 1984, 1990; Townsend & Franks, 1995; Vinokur & van Ryn, 1993).

In a study of 60 parents of adult-children with schizophrenia, Bulger, Wandersman, and Goldman (1993) explored the role of interpersonal relationships in predicting caregivers’ subjective burden. Two domains of relationship were assessed: intimacy (i.e., positive ties) and conflict (i.e., negative ties). Results indicated that greater conflicts between the caregiver and the care recipient were associated with higher levels of burden, whereas greater intimacy was associated with lower levels of burden (Bulger et al., 1993).
Townsend and Franks (1995) examined the role of quality of relationship between adult-child caregivers and older parents with cognitive or functional impairment. Two aspects of the relationship quality (closeness and conflict), and two measures of well-being (i.e., subjective caregiving stress and depression) were utilized in the study’s model. Findings indicated higher levels of closeness (i.e., positive quality of relationships) predicted lower levels of caregiving subjective stress. Higher levels of conflict (i.e. negative quality of relationships) predicted higher levels of subjective caregiving stress and greater depressive symptomatology experienced by adult-child caregivers. The authors conclude that, overall, negative ties were more consistently and strongly predictive of well-being than positive ties were. These results underline the importance of assessing both aspects of relationship when assessing the effects of relationship quality in the caregiving stress process (Townsend & Franks, 1995).

Another example of assessing both aspects (i.e., positive and negative) of relationship quality is found in a study of quality of relationship in stressful marital situations (Vinokur & van Ryn, 1993). Although marital relationships are different from caregiving relationships in the context of chronic illness or impairment, several significant similarities between these two types of relationships establish the ground to believe that understanding the mechanisms through which relationship quality plays a role at stressful times among married couples can enhance our understanding about potential stress processes mechanisms among caregiving dyads. First, similar to the relationship between caregiver and care-recipient, marital relationships are viewed as dyadic relationships that are characterized as close, interdependent relationships (Vinokur, Price & Caplan, 1996; Vinokur & van Ryn, 1993). Furthermore, following the
idea of relational closeness and hierarchy of obligations among family relatives (Horwitz et al., 1992), spouses retain the highest level of obligation to provide care and support in times of need to their partner. In that sense, spouses can be seen as caregivers to their partners at times of stress.

Utilizing a longitudinal design (three waves), Vinokur and van Ryn (1993) examined the impact of spousal supportive and undermining (conflictual) behaviors on recently unemployed respondents’ mental health (indicated by measures of anxiety and depression). Social support referred to the emotional, appraisal, informational and instrumental support (e.g., provision of encouragement, useful information), whereas social undermining represented behaviors that directly undermine or diminish the sense of self worth (e.g., act unpleasant, dislike behavior). Social undermining had a direct and strong adverse impact on poor mental health, at each measurement time. Social support, on the other hand, had a significant positive (beneficial) impact on mental health only at baseline. Similarly to others (e.g., Ingersoll-Dyton, Morgan, & Antonucci, 1997; Rook, 1984, 1990; Townsend & Franks, 1995), the authors concluded that negative interactions are stronger predictors of well-being compared to positive interactions (Vinokur & van Ryn, 1993). Similarly, in a longitudinal study (base line, and 6 months follow-up) Vinokur et al. (1996) examined the impact recent unemployment on changes of marital relationship quality (i.e., social support and social undermining) and depressive symptomatology among job seekers. The results indicated that over time changes in relationship quality, as manifested by a decrease in supportive behavior and an increase in undermining behavior, increased depressive symptoms among job-seekers.
Evidence from the caregiving literature on interpersonal relationships support the association (main effect) between caregiver-care recipient quality of relationship to caregivers’ well-being. Furthermore, research findings have demonstrated the stronger effect of negative interactions on caregivers’ well-being, as compared to positive interactions. This illuminates the importance of assessing both aspects of relationship quality when assessing caregivers’ well-being.

It is important to note, though, that some previous research has shown that the main effects of social support on caregivers’ well-being were mediated by different psychological and social variables, such as self esteem (Li & Seltzer, 2003), role mastery (Martire, et al., 1998), and family conflict (Strawbridge & Wallhagen, 1991).

The Moderating Effect of Quality of Relationships on the Association between Caregivers’ Stressors and Well-Being (Path 2)

In addition to its main impact, the impact of social support on well-being under stressful situations (such as caregiving) is discussed through a different model - the stress-moderating model. Moderational hypotheses suggest that relation between two variables (predictor and criterion) changes in direction and/or strength as a function of a third variable (the moderator) (Baron & Kenny, 1986). Thus, the stress-buffering/moderating model of social support suggests that supportive relationship function as a buffer, protecting against or reducing the potential negative effects embedded in stressful situations (Cohen & Wills, 1985; House, Umberson, & Landis, 1988).

Several studies in the gerontology and physical illnesses fields provide an empirical support to the stress-buffering model of social support on caregivers’ depressive
symptomatology and emotional distress. Gibson and Dilworth-Anderson (2002) studied the impact of overall social support on caregivers’ depressive symptomatology, among an ethnically diverse sample of family caregivers to elderly relatives with dementia. Among three of the four groups (European American, Chinese American, and African American), social support buffered the effects of stress appraisals on caregivers’ depressive symptomatology. However, among Hispanic caregivers, social support did not buffer the effects of stress appraisals on depressive symptomatology. In addition to its support for the moderating-model of social support, the results emphasize the possible differential effect of race on the caregiving stress process (Gibson & Dilworth-Anderson, 2002).

Another example of the buffering effect of overall social support on stress among caregivers was offered in a study of caregivers to persons who suffered traumatic brain injury. Similarly to other chronic health conditions, traumatic brain injury has a long term effect on the injured person, and thus requires families to adjust to the responsibilities associated with caring to a person with a long term illness. This cross-sectional study evaluated the level of neurobehavioral and neuropsychological functioning of the person with injury (i.e. stressors), as well as family caregivers’ perceived overall social support on family caregivers’ emotional distress (Ergh, Rapport, Coleman, & Hanks, 2002). Results indicated a moderation effect of social support on caregiver psychological distress, in face of care-recipient cognitive dysfunction. Further analysis indicated that where caregivers reported low levels of social support, caregiver distress increased as care-recipient demonstrated cognitive dysfunction. However, cognitive dysfunction was not associated with distress among caregivers with adequate (i.e., high levels) social support (Ergh et al., 2002).
Two studies in the gerontology field investigated the moderating effect of different types of social-support on caregivers’ well-being. The findings indicate that different types of social support may result in different well-being outcomes, when provided in different individual contexts and in face of different stressors. For example, based on a stress-buffering model, depressive symptomatology and burden were assessed among primary family caregivers of older relatives with dementia (Son, Zarit, Rovine, Femia, & Stephens, 2003). Two types of informal support were examined: emotional-support and instrumental-support. Instrumental-support moderated the relationship between limited daily activities [IADL] to burden and depressive symptoms, whereas informal emotional support moderated the relationship between overload and depressive symptoms. The authors conclude that while their results support the stress-buffering effect of social support, it is important to match specific types of support to specific needs (stressors) (Son et al., 2003).

Another study examined whether three types of social support: social participation, emotional support and caregiving support were related to depressive symptomatology among wives caring for their elderly husbands and daughters caring for their elderly parents. Caregiving stressors included limitations in personal and instrumental activities of daily living (ADL/IADL limitations) and behavior problems of the care recipient. Emotional support moderated the effect of the stress associated with the husbands’ behavior problems on wives’ depression. For daughters, emotional support buffered the stress associated with both caregiving stressors: the behavior problems and the ADL/IADL limitations of the parent care recipient. Whereas social participation had a main effect on depressive symptoms for daughters, caregiving support did not have a main
or buffering effect, for either wives or daughters. The authors conclude that in order to further understand the impact of social support in the caregiving stress process, as well as its impact on caregivers’ well-being, different types of stressors, various types of social support, and the individual context should be taken into account (Li et al., 1997).

The research reviewed above provides evidence to the buffering-effect of social support on caregivers’ depressive symptomatology and subjective burden. However, the operationalization of social support in the aforementioned studies refers to caregivers’ received support (either overall support or specific support) from his/her broad personal network. Two studies have further narrowed the focus of their inquiry, and examined the impact of the exchange of support within the caregiver-care recipient dyad on caregivers’ well-being.

Lawrence et al. (1998) examined the direct and buffering effect of positive caregiver – care recipient quality of relationship on family caregivers to older relatives with disabilities. Two well-being indicators were assessed: depressive symptomatology and subjective burden. Results indicate that relationship quality had a moderating effect on the association between the caregivers’ stressors (as measured by care-recipient level of dependency in performance of physical, social and role activities in the course of daily life) and perceived burden. However, contradictory to expectation, for those with better quality of relationship, increased clients’ dependency was related to higher levels of caregivers’ perceived burden. Furthermore, whereas better quality of relationships were found to have a main and negative effect on caregiver’s depression symptoms, relationship quality did not moderate the association between caregivers’ stressors (i.e.,
clients’ level of dependency) and caregivers’ depressive symptoms (Lawrance et al.,
1998).

The potential differences in the effects of positive and negative aspects of quality of
relationships on caregivers’ depressive symptomatology have been demonstrated by
Nijboer and his colleagues (Nijboer, Tempelaar, Triemstra, van den Bos, & Sanderman,
2001). The longitudinal study followed newly diagnosed cancer (colorectal carcinoma)
patients and their partners, in order to examine the impact of social relationships on
caregivers’ depressive symptomatology over time. Positive social interaction was
assessed by six subscales (Daily Emotional Support, Problem-Oriented Emotional
Support, Esteem Support, Instrumental Support, Social Companionship, and Informative
Support), whereas one subscale assessed negative social interactions. The results
provided partial support for the moderation hypotheses. Emotional support moderated the
effect of caregivers’ stressors (i.e., objective burden – measured the extent to which
caregiving interrupted the usual activities of the caregiver), on caregivers’ depressive
symptomatology. Caregivers who perceived less objective burden and who reported
higher levels of emotional support reported lower levels of depressive symptoms at
baseline (two weeks prior to the patient’s hospital admission) as well as at follow up (six
months after discharge). Negative social interactions were shown to have a main effect on
caregiver depressive symptomatology over time. In particular, less negative interactions
predicted more favorable caregiver outcome in the long term, regardless of the amount of
stressful events. However, negative interactions did not moderate the relationship
between caregivers’ objective burden and depressive symptoms. The results illustrate the
potential difference in mechanisms through which different types (i.e., qualities) of social interactions impact caregivers’ well-being (Nijboer et al., 2001).

Quality of Relationship and Caregivers’ Well-Being (Path 2) – Summary

Research regarding the association between the quality of caregiver-care recipient relationships and caregivers’ well-being provides empirical support to the main effect model as well as to the buffering effect model of social support. Quality of relationships have been indicated to have a main effect on caregivers’ subjective burden (e.g., Bulger et al., 1993; Lawrence et al., 1998; Strawbridge & Wallhagen, 1991), gratification and satisfaction with the caregiving situation (e.g., Baronet, 2003; Bulger et al., 1993), and sense of role mastery and effectiveness (e.g., Martire et al., 1998; Townsend & Franks, 1995). In addition, quality of relationship has been shown to have a direct effect on caregivers’ depressive symptomatology (e.g., Lawrence et al., 1998; Li & Seltzer, 2003). Moderation effects of social support were demonstrated between various caregiving stressors (e.g., behavioral problems, objective burden, and care-recipient dependency) and caregivers’ subjective burden (e.g., Son et al., 2003), emotional distress (e.g., Ergh et al., 2002), as well as depressive symptomatology (e.g., Gibson & Dilworth-Anderson, 2002; Li, et al., 1997).

While studies of social support in the context of caregiving have provided evidence to support the buffering effect model, several aspects of the social-support conceptualization constrain the understanding of the mechanisms through which social support impacts well-being in caregiving situations. First, the majority of the studies have assessed social support as the support received from the caregivers’ general personal network without identifying the specific source of support and and at times without
specifying any particular type of support (e.g., Ergh et al., 2002; Gibson & Dilworth-Anderson, 2002). Second, the majority of the studies of social support in the context of caregiving have solely focused on the positive aspect of social relationship, while neglecting to investigate the potential impact of the negative aspects (e.g., criticism, disagreement, anger, or disrespect) embedded in any interpersonal close relationships. Finally, the absence of studies on the impact of quality of relationship between caregivers’ to care-recipients (in particular women) with substance abuse or dual disorders on caregivers’ well-being is a significant gap in the literature, which restricts our understanding of the caregiving process in this population.

**Quality of Caregivers-Care Recipients Relationship in the Caregiving Process**

Research has demonstrated that quality of caregiver-care recipient relationships plays an important role in the caregiving process, and can impact caregivers’ well-being as well as the amount and quality of their care provision. Nonetheless, several aspects of the current state of knowledge limit/restrict our understanding of the quality of relationship’s role in the caregiving process for adult women with substance use disorder or dual disorders.

Across the reviewed studies, the majority of the caregivers were female and Caucasian. This situation illuminates a significant gap in the research literature and restricts the generalizability of the findings to male caregivers and to caregivers of other ethnicities. The significance of this gap is further emphasized by other research indicating differences in the levels of caregiving burden (e.g., Grenberg et al., 1997) and depressive symptoms (e.g., Prunch & Resch, 1989) among male and female caregivers; as well as
differences between Black and White caregivers’ well-being (e.g. Reinhard &., Horowitz, 1995; Stueve et al, 1997). Furthermore, while studies have indicated that the type of care recipient impairment can differentially affect caregivers’ perception of quality of relationship with the care-recipient (e.g., Li & Seltzer, 2003; Townsend & Franks, 1995), no study has examined the impact of quality of relationship on the caregiving process (i.e., caregivers’ well-being and involvement with the client) among caregivers to individuals with substance use disorders or co-occurring substance use and mental disorders.

This current study aims to address several gaps in the existing state of knowledge by focusing on an understudied population – family caregivers to women with substance use disorders or dual disorders. Furthermore, the overwhelming majority of the caregivers in the current study sample are African American and almost half of the caregivers are male. This aspect is important since much of the research on caregiving processes and the effect of quality of relationship in the process have been focused on White female caregivers.

Finally, the social support literature has illuminated the importance of both positive and negative social interactions to the understanding of individuals’ well-being (e.g., Rook, 1984; 1990). Furthermore, studies have shown that social support and social undermining have independent and different effects on caregivers’ well-being. Nonetheless, the majority of the studies which examined the quality of the relationships between caregivers and care recipients have mainly focused on the positive aspect of relationship quality (e.g., Horwitz et al., 1992; Lawrence et al., 1998; Li et al., 1997; Li & Seltzer, 2003; Pickett et al., 1997), or utilized a general measure which encompassed
both positive and negative qualities into one indicator (e.g., Lyonette & Yardley, 2003; Spruytte et al., 2001). The scarcity of studies that have utilized and examined the dual dimensions of interpersonal relationships illuminates an important measurement gap in the caregiving literature and calls for further investigation of the roles of positive and negative exchanges in the caregiving process. This study will utilize two separate measures of quality of relationship (i.e., interpersonal support and interpersonal undermining) in order to assess the potential differential effects of those two dimensions of relationship quality, on the caregiving stress process.

Summary

This study, based on the theoretical framework of the caregiving stress process model (Pearlin, et al., 1990), aims to enhance our understanding of the family caregiving process of women with substance use disorder or co-occurring substance use and mental disorders. The study aims to address several gaps in the research of family caregiving to women with substance or dual disorders. The study participants represent an understudied population.

Research on women with substance use or dual disorders have paid more attention to the individuals with the disorders and less to the families in which the individuals are often embedded. Nonetheless, family involvement with individuals with substance use or dual disorders has been shown to be associated with an array of positive outcomes for the care-recipient. Among the studied outcomes are reduced risk for relapses or recovery from substance disorder (Clark, 2001; Ellis et al., 2004), shorter psychiatric hospitalizations (Schofield et al., 2001), and reduced risk for homelessness (Caton et al., 1994, 1995).
Despite the high prevalence of women with substance use or dual disorders, and despite the significant demands on families to support and assist their relative with the disorder (Clark, 1996; Drake & Wallach, 2000), little research has examined the roles (i.e., types and levels of involvement with the client) of families of people with dual disorders; as well as the impact of having a family member with dual disorders on family members’ well-being (i.e., burden and depressive symptomatology). Even less research has paid attention to the roles and needs of families of women with dual-disorders. A better understanding of the needs and stresses experienced by families is important, because unmet needs may negatively impact family involvement with their relative with substance use or dual disorders. Furthermore, attention to the potential predictors of families’ involvement is important, as a better understanding of the process may enable care providers to develop and implement a better/more focused intervention to promote family members’ well-being and involvement.

The theoretical framework of caregiving stress recognizes the significant role of interpersonal relationships in the caregiving stress process. The importance of interpersonal relationships to individuals’ physical health and psycho-social well-being has been widely demonstrated (e.g., Cohen & Wills, 1985; House, et al., 1988). As caregiving processes have been often conceptualized as a dyadic process between the caregiver to the care-recipient (Goodman et al., 1997), it seems important to pay attention to the support exchange that takes place within this dyad and in the context of caregiving situations. Furthermore, prior research in the fields of gerontology and mental health has demonstrated the importance of caregiver - care-recipient quality of relationship to the caregiving process, including caregivers’ well-being and their involvement with the
client. Nonetheless, little attention has been given in the substance use or dual diagnoses caregiving literature to the role that caregiver-care recipient quality of relationships plays in the caregiving process. Thus, little is known about the role or the potential impact of the quality of caregiver care-recipient relationship on caregivers’ well-being and its’ effect on their involvement with their relatives with dual diagnoses. This study aims to examine the impact of quality of relationship among caregivers to women with substance use disorders or dual disorders. By studying both positive and negative patterns of the interpersonal interactions the study aims to address an understudied theme in the caregiving literature. Studying the potential differential effects of both aspects of the caregiver-care recipient quality of relationship may enhance our understanding as for the mechanisms through which the different components of the caregiving process are related to each other, and the ways in which they shape the caregiving process and its outcomes.
CHAPTER 4: RESEARCH QUESTIONS AND HYPOTHESES

Two general research questions guided the review of the literature:

**RQ1:** What is the relationship between caregiver’s primary stressors, caregivers’ (CG) involvement with the care-recipient (CR) and caregiver’s well-being?

In order to address this question, three consecutive questions and hypotheses will be assessed:

**RQ1a:** Do higher levels of primary stressors (i.e., dual diagnosis, greater behavioral problems, and greater perceived substance abuse and mental health problems) predict lower levels of CGs’ involvement with the CR?

**H1a:** Higher levels of caregiver’s primary stressors (i.e., dual diagnosis, greater behavioral problems, greater perceived substance abuse and mental health problems) will predict lower levels of CG involvement with the CR (i.e., less frequent contact and less supervision).

**RQ1b:** Do higher levels of primary stressors predict lower levels of caregivers’ well-being?

**H1b:** Higher levels of CGs’ primary stressors (i.e., dual diagnosis, greater behavioral problems, and greater perceived substance abuse and mental health problems) will predict lower levels of caregivers’ well-being (i.e., higher levels of subjective burden and higher levels of depressive symptomatology).

**RQ1c:** Does CG well-being mediate the association between CGs’ stressors and the level of CGs’ involvement with the CR?
H1c: Higher levels of CGs’ stressors (i.e., dual diagnosis, greater behavioral problems, and greater perceived substance abuse and mental health problems) will impact the level of CGs’ involvement with the CR (i.e., frequency of contact and supervision involvement), both directly and indirectly, through CG’s well-being (i.e., subjective burden and depressive symptomatology).

H1c1: Higher levels of subjective burden will predict higher levels of CG involvement with the CR (i.e., more frequent contact and more supervision), controlling for CG primary stressors.

H1c2: Higher levels of depressive symptomatology will predict lower levels of CG involvement with the CR (i.e., less frequent contact and less supervision), controlling for CG primary stressors.

The second research question focuses on the role of the quality of the relationship between the CG and the CR in predicting CG involvement.

RQ2: Does quality of the CG – CR relationship moderate the relationships among the three domains of the caregiving process: CGs’ stressors, caregivers’ well being, and the amount of CGs’ involvement with the CR?

Hypotheses:

In order to address the moderation question, two preliminary hypotheses will be assessed:

H2a: It is expected that higher levels of positive quality of relationship (i.e., supportive interaction) between CG and CR will be associated with lower levels of CGs’ stressors (as measured by substance abuse only diagnosis, lower levels of behavioral problems, and lower levels of perceived substance abuse and mental health problems), higher levels of CG’s well-being (as measured by lower levels
of subjective burden and depressive symptomatology), as well as higher levels of CG’s involvement with the CR (as measured by more frequent contact and more supervision involvement).

H2b: It is expected that higher levels of negative quality of relationship (i.e., undermining interactions) between CG and care recipient will be associated with higher levels of primary stressors (i.e., dual diagnosis, greater behavioral problems, and greater perceived substance abuse and mental health problems), lower levels of CGs’ well-being (as measured by higher levels of subjective burden and depressive symptomatology), as well as lower levels of CG’s involvement with the CR (as measured by less frequent contact and less supervision involvement).

Moderation Hypotheses:

H2c: Quality of relationship will moderate the effect of stressors on CG involvement with the CR. Higher level of positive quality of relationship (i.e., higher levels of supportive interactions) will buffer the negative effect of CG stressors on CG involvement with the CR (as measured frequency of contact and supervision), whereas higher level of negative quality of relationship (i.e., higher levels of undermining by the CR) will exacerbate the negative effect of stressors on CG involvement with the CR (as measured frequency of contact and supervision).

H2d: Quality of relationship will moderate the effect of stressors on CG well-being. Higher level of positive quality of relationship (i.e., higher levels of supportive interactions) will buffer the negative effect of CG stressors on CG well-being, whereas higher level of negative quality of relationship (i.e., higher levels of
undermining by the CR) will exacerbate the negative effect of stressors on CG subjective burden and depressive symptomatology.

H2e:  Quality of relationship will moderate the effect of CG well-being on CG involvement with the CR. Higher level of positive quality of relationship (i.e., higher levels of supportive interactions) will buffer the negative effect of low levels of CG well-being (as measured by higher levels of subjective burden and depressive symptomatology) on low levels of CG involvement with the CR (as measured frequency of contact and supervision). Higher level of negative quality of relationship (i.e., higher levels of undermining by the CR) will exacerbate the negative effect of low levels of CG well-being (i.e., higher levels of subjective burden and depressive symptomatology) on lower CG involvement with the CR (as measured frequency of contact and supervision).
CHAPTER 5: METHODOLOGY

This study is a secondary data analysis, utilizing data collected by Dr. David E. Biegel, Principle Investigator, through a study funded by the National Institute on Drug Abuse (NIDA) Grant #1-R01-DA019344-01A1 ("Families of Women with Co-Occurring Substance Abuse and Mental Disorders: Involvement, Roles and Well-Being"). This study was conducted as a part of the Mandel School’s Dual Disorders Research Program. It was one of three pilot grants funded by NIDA which investigated stages of change, social networks, and family caregiving in low-income women with dual diagnoses. This study utilized a non-experimental cross-sectional survey design.

Study Sample and Data Collection

The subjects of the current study are 82 family members (caregivers) of women clients in one residential and one outpatient substance abuse treatment program (one family member per woman).

In order to reach the family caregivers and to collect the data, several steps were conducted. First, the investigators contacted the substance abuse treatment program’s staff, presented the research objectives, and asked for their agency’s consent to take part in the study. The agencies’ staff helped in arranging meetings in which the research team met with the agencies’ clients in order to present the study, including the study objectives, potential risks and benefits. After the presentation, clients were asked for their willingness to participate in the study. Clients consent forms were distributed and clients could choose whether or not they consented to participate. At the same time, clients were asked to identify one 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). Clients were asked to give permission to have this family member contacted for participation in the study. Those designated family members were defined as the women’s caregivers in this study.

Women included in the study were those willing to nominate family member or significant other. Other eligibility criteria for participation in the study were: the women had to be 18 years or older, have no diagnosis of schizophrenia and no current use of any medication typically prescribed for a major thought disorder, and to have been in substance abuse treatment for at least three weeks.

All measures reported in this study were drawn from the interviews with the family caregivers, except the data concerning the clients’ diagnosis (i.e., substance use / dual diagnosis) which were collected from the women clients.

Almost all (97.2%) of the women who met study eligibility criteria were contacted. Of these, 96.2% (N=87) agreed to participate and provided a name of a family member. Of the designated family members, 95% (N=82) consented to be interviewed. Only two family members refused to participate in the study and three others were unable to be contacted.

Face-to-face interviews were conducted with the family members by trained interviewers, lasting an average of 80 minutes. Interviews with family members were conducted at a research office located on the campus of an academic medical center.
Interviewees were provided transportation assistance to facilitate their travel to the interview site. Respondents received a $45 food store gift card for their participation.

For ease in describing the measures used in the study and in relating study findings to the larger body of literature on caregiving, the women in the study will be referred to as “care recipients” and their family members will be referred to as “caregivers.”

Measures/Instruments

In order to address the research questions, and based on the study’s model, the following measures were utilized:

*Primary Stressors (Disorder Related Stressors)*

*Care-recipient’s Current Diagnosis (Substance Use / Dual Disorder).* Substance use disorders were assessed at treatment intake by the Clinical Intake Assessment Interview-Cleveland (CIAI-C), a computerized assessment instrument yielding a DSM-compatible diagnosis (University of Akron, 2001). This instrument is used by all the treatment agencies in the county in which the study was conducted. In the study a DSM-IV diagnosis of abuse or dependency for at least one drug (alcohol and/or other substance) was the criterion for current (last 12 months) substance abuse.

Mental disorders were assessed by use of the Generalized Anxiety Disorder, Depression, Dysthymia, Post-traumatic Stress Disorder (PTSD), and Mania/Hypomania sections of the Computerized Diagnostic Interview Schedule (C-DIS). The C-DIS has demonstrated reliability and validity (Robins, Helzer, Croughan, & Ratcliff, 1981; Helzer, Robins, & McEvoy, 1985) and is based upon criteria from the Diagnostic and Statistical Manual, Fourth Edition (DSM-IV) (Robins, Cottler, Bucholz, Compton, North,
& Rourke, 1999). A DSM-IV diagnosis of one or more of the the assessed diagnoses as measured by the DIS-IV was the criterion for mental disorder.

Dual-diagnosis was defined as the current presence (last 12 months) of at least one mental disorder (defined as the presence of anxiety, depression, dysthymia, PTSD, and/or mania/hypomania) and of at least one substance use (alcohol and/or other substance) disorder (abuse or dependency). This variable is a dichotomous variable (1=Dual disorder; 0=Substance use disorder).

**Care-Recipient Behavioral Problems.** A 58-item behavioral problems scale was developed for this study to assess caregivers’ perception of care-recipients’ behavioral problems. The scale was adapted from a Client Behaviors Scale developed by Biegel et al., (Biegel, Milligan, Putnam, and Song, 1994) for use with family caregivers of persons with mental illness. The original Biegel et al. (1994) scale contained 37 items derived from previous work of Schulz et al., (1992) and Pasaminick, Scarpetti, & Dinitz (1967). It has been used with samples of lower social class African-American and Caucasian caregivers with good reported internal consistency ($\alpha=.92$). This scale was adopted for the current study, and additional questions were included concerning substance-use disorders. Using a five-point scale (ranging from 0=never to 4=constantly or almost constantly), caregivers in the current study were asked to report the frequency of a wide range of possible care-recipient behaviors in the last 12 months: for example, problems in taking medication, hallucinations, problems in money management, suspiciousness, or forgetfulness. A summation score was computed to represent the level of care-recipient behavioral problems, where higher scores indicated greater degree of behavioral problems. Twenty-two respondents were missing answers for 1-7 of the 58 scale items.
The individual mean substitution method was utilized to address missing data. The internal consistency of the scale’s items in our sample was very high ($\alpha= .97$).

*Extent of Care-recipient’s Substance Use and Emotional Problems.* Caregivers’ perception of the extent of care-recipient’s drug/alcohol and emotional problems was measured by combining two single item measures. The first item addressed caregivers’ perception of the extent of care-recipient’s substance use problem: “How much of a problem has {care-recipient name}’s alcohol or drug use been in the past 12 months?”, and the second item addressed caregivers’ perception of care-recipient’s emotional problems: “How much of a problem is (or was) this emotional [discussed in a prior questions] or mental problem during that most recent period of time?”. Answers were obtained on a four-point scale, from “Not at all” (0) to “Severe” (3). The possible range of caregivers’ perception of care-recipient’s substance use and emotional problem was 0-6, with higher scores representing higher extent of emotional and drug/alcohol use problems. There were no missing data for this combined measure.

*Caregiver’s Well-Being*

Caregiver’s well-being was operationalized as caregivers’ subjective burden associated with the caregiving role as well as caregivers’ depressive symptomatology.

*Subjective Burden* – The subjective burden scale is a summative scale of two subscales, Worry & Stigma, of the Family Experiences Interview Schedule (Tessler & Gamache, 1995). This summative scale aims to assess respondents’ overall level of experienced worry and stigma associated with the caregiving role experienced in the last 12 months. This scale includes 16 items, indicating the degree to which caregivers experienced worries concerning the care-recipient (e.g., worries about the care-recipient’s
safety, social life or financial management)(i.e., worry subscale) and concerns that caregivers have about the way they will be perceived or treated by their social environment as well as their behavioral responses to these concerns (e.g., worry that people would find out, keep care-recipient’s alcohol or drug use a secret, worry that best friends will treat you differently) (i.e., stigma subscale) (Tessler & Gamache, 1995). All questions were assessed in a frame time of the past 12 months (before the time of the interview). Items were scored on a five point scale from “Never” (0) to “Constantly or almost constantly” (4). The possible range is 0-64, where higher scores indicated greater degree of subjective burden. Good internal consistency was reached for the scale (α = .87). Three caregivers were missing answers for 1 of the 16 items. The individual mean substitution method was utilized to address missing data.

Depressive Symptomatology (Center for Epidemiologic Studies Depression Scale-CESD) - Depressive Symptomatology was measured by the CES-D Scale (Radloff, 1977). The scale indicates the frequency with which the respondent has experienced each of the 20 symptoms of depression (e.g., “did not feel like eating”, “I had trouble keeping my mind on what I was doing”, “everything I did was an effort”, “I felt lonely”) during the past week. The items are scored on a 4-point scale ranging from “less than one day” (0) to “5-7 days during the past week” (3). The possible range is 0-60, where higher scores indicate higher depressive symptomatology. In order to keep consistency of the direction of scoring, so that high scores indicate higher level of symptomatology, positively worded items were reverse coded. Four respondents were missing answers for 1 of the 20 items. The individual mean substitution method was utilized to address missing data. Internal consistency in the current study was good (α= .85).
Involvement with the Care-recipient

Two measures of involvement were utilized in this study:

Frequency of contact – this three-item scale asks family members to indicate “how often have you been in contact with (the care-recipient): during the past month, the month before, and two months before” (Clark, 1998). The items were scored on a 5-point scale ranging from “Never” (0) to “Almost every day” (4). The possible range is 0-12, where higher scores indicate more frequent contact. There were no missing data for this scale.

Supervision/Control of Bothersome Behavior – The 7-item Supervision/Control of Bothersome Behavior scale indicates the frequency with which the caregiver is involved in efforts to prevent care-recipients’ bothersome behaviors. Bothersome behaviors include care-recipients’ embarrassing behavior in public; making excessive demands for attention; keeping people up at night; injuring or threatening to injure anyone; talking about, threatening, or attempting suicide; drinking too much; or using illegal drugs. The seven items were scored on a five-point scale from “Never” (0) to “Constantly or almost constantly” (4) (Tessler & Gamache, 1995). There were no missing data for these items. The scale possible range is 0-28, where higher scores indicate greater frequency of supervision.

Quality of Relationship.

Family members’ perceptions of the quality of their relationship with the care-recipient were measured by assessing positive qualities (i.e., emotional support received from the care-recipient) and negative qualities (i.e., emotional undermining of the caregiver by the care-recipient) of the relationship (White, Townsend, & Stephens, 2000).
Emotional Support Received From the Care-recipient. The scale indicates the caregivers’ perception of the frequency of the care-recipients’ supportive behaviors toward the caregivers, in the last six months. Six supportive behaviors were measured: care-recipient listened carefully to you; showed respect to you; expressed appreciation for the things you do; did something thoughtful for you; showed consideration of your attempts to balance various life roles; and showed you physical affection. The items were scored on a four-point scale, ranging from “rarely/none of the time” (1) to “most of the time” (4). The possible range was 6-24, where higher scores indicate higher frequency of emotional support received from the care-recipient. Two respondents were missing answers to 1 item of the six scale items. The individual mean substitution method was utilized to address missing data in the scale. Good reliability was reached for the scale ($\alpha = .81$).

Emotional Undermining of the Caregiver by the Care-recipient. This scale indicates caregivers’ perception of the frequency of care-recipients’ undermining behaviors toward the caregivers, in the last six months. Six undermining behaviors were assessed: care-recipient criticizes you; got into arguments with you; took you for granted; showed impatience toward you; ignored you; expected more from you than she was willing to give in return. The items were scored on a four-point scale, ranging from “rarely/none of the time” (1) to “most of the time” (4). The possible range was 6-24, where higher scores indicate higher frequency emotional undermining of the caregiver by the care-recipient. Three respondents were missing answers to 1 item of the six scale items. The individual mean substitution method was utilized to address missing data in the scale. Good reliability was reached for the scale ($\alpha = .80$).
**Contextual and Background Variables**

*Caregiver is Care-recipient’s significant other.* This dichotomous variable indicated whether or not the caregiver is the significant other (spouse or romantic partner) of the care-recipient (coded 1 if yes). Caregivers who had any other familial relations to the care-recipient (e.g., parent, sibling, aunt, and offspring) were defined as “not significant other” (coded 0).

*Caregiver is Care-recipient’s mother.* This dichotomous variable indicated whether or not the caregiver is the mother of the care-recipient (coded 1 if yes). Caregivers who had any other familial relations to the care-recipient (e.g., significant other, sibling, aunt, and offspring) were defined as “not mother” (coded 0).

*Caregivers’ Overall Social Support.* The Interpersonal Support Evaluation List (ISEL) was used as a measure of overall social support. This 16-item scale has been well-validated (Cohen, Mermelstein, Kamarck & Hoberman, 1985). It asks respondents to indicate, on a four-point scale from “Definitely True” to “Definitely False”, their opinion concerning items that measure appraisal, belonging, self-esteem, and emotional support. A summation score was computed to represent the level of perceived social support, where higher score indicated greater degree of social support. Individual mean substitution method was utilized to address missing data. Five respondents were missing answers for 1 item of the scale 16 items. Individual mean substitution method was utilized to address missing data. The internal consistency of the scale’s items in our sample was good (Cronbach’s alpha= .81).
*Living Arrangement.* This dichotomous variable indicated whether or not the care-recipient was living at the same household as the caregiver at the time of the interview (1= same household; 0 = different household)

*In Patient/Outpatient Treatment* - This dichotomous variable indicated whether or not the care-recipient was living at a residential (coded as 1) or was non-residential treatment program (coded 0).

*Caregiver’s Employment Status.* This dichotomous variable indicated whether or not the respondent was employed (full or part time) at the time of the interview.

*Caregivers’ Household Finances.* Caregivers were asked to assess their general household financial situation at the end of the month on a three point scale ranging from Some Money Leftover (1) to Not Enough to Make Ends Meet (3). A higher score indicates more financial difficulties.

*Caregiver’s Monthly Income.* Respondent were asked to report their family monthly income after taxes from all sources.

Caregivers’ Gender – 1= male; 0= female.

*Caregivers’ Marital Status.* 1= Married, 0 = Not married.

*Frequency of Everyday Disruptions (Objective Burden).* This scale includes 4 items which ask caregivers for the frequency of disruption in their daily activities due to the care-recipient, during the last 12 months (Tessler & Gamache, 1995). Four areas of impact are included: changes or disruptions in school or work; social and leisure activities; household routine, and other family obligations (i.e., giving other family members time and attention). Answers were obtained on a five point scale, from “Never”
Higher scores represent more frequent disruptions in caregiver’s daily activities. No missing data were observed on these items.

**Analysis Plan**

Two general steps composed the analysis plan. First, preliminary analyses of the study’s variables and scales, across and within domains were conducted. Second, multivariate analyses was conducted in order to assess the research questions and hypotheses.

*Preliminary Univariate, Bivariate and Multivariate Analyses*

Univariate frequencies and descriptive statistics (mean, standard deviation, range, skewness and kurtosis) were utilized to describe each of the study variables and to assess its suitability for the multivariate analyses (i.e., variables will be assessed for their distribution patterns and variance).

Bivariate correlation analyses were conducted assessing the magnitude and the direction of relationship between all of the study variables. Bivariate correlations were assessed between variables within each domain (i.e., between different stressors, well-being indicators, involvement indicators, as well as quality of relationship indicators), as well as across domains (e.g., between stressors and well being, or between quality of relationship and involvement). In addition, based on the study’s theoretical model, bivariate correlation were assessed between the study variables and caregiver and care recipient socio-economic and background variables (i.e., type of relationship, living arrangement, caregiver gender, and caregivers’ perceived overall social support). This step has two main purposes: (a) the bivariate analysis will identify very high ($r \geq .80$) correlations, in order to avoid multicollinearity problems and (b) the bivariate analysis
will allow a preliminary assessment of the association (magnitude and direction) between the research variables. Since the number of variables in the model is relatively large to include in the multilevel analyses (OLS regression), given the study sample size (N=82), the researcher will consider omitting background variables which are not be statistically correlated with the dependent variables (i.e., amount of contact and supervision).

Multivariate preliminary analyses will include exploratory factor analyses in order to assess the dimensionality of the quality of relationship scales, subjective burden scale and the CES-D scale. In addition, Cronbach’s alpha coefficient was calculated to each of the study’s multiple-item scales (i.e., care-recipient’s behavioral problems, depressive symptomatology scale, subjective burden scale, as well as the quality of relationship scales) in order to evaluate their internal consistency.

To ensure that the analyses have enough statistical power a power analysis has been conducted (based on estimated $R^2=.25$, N=80). Based on a power analysis, the number of variables included in each analysis was limited to eight variables in each model. Furthermore, based on a hierarchical OLS model with interaction term, power analysis results indicated adequate power for the first set of variables (6 independent variables), whereas the power to detect a mediation effect (second set of 1 variable) or interaction effect was very limited (power of increment= .66 and .59, respectively).

Furthermore, due to the small sample size and to the exploratory nature of the study the initial presentation of the results will utilize a significant level of .05 with no imposed corrections to the relatively high number of analyses involved in this study. However, since the study does utilize a large number of proposed analyses, an attempt to address what findings might have been appeared due to chance was investigated by presenting
what results were lost when imposing the Bonferroni correction. The Bonferroni procedure adjusts the observed significance level by multiplying it by the number of comparisons being made (Norusis, 2002). In the current study the following adjustments of the observed significance level were made: For Research Question 1, four families of analyses were established, based on the two involvement indicators (contact and supervision) and the two well-being indicators (subjective burden and depressive symptomatology). Within each family, 3 analyses were utilized in order to assess the mediation research question. For example, in order to assess the mediation effect of subjective burden in the relationship between stressors and supervision three analyses were conducted: the impact of stressors on supervision, the impact of stressors on burden, and the impact of stressors and burden on supervision. Thus the adjusted significance level for research question 1 was $p \leq .017$ (i.e., .05/3).

A similar division for families of analysis was utilized for Research Question 2. The families in each path of analysis (see research model) were defined by the relevant outcomes and by the measured aspect of the quality of relationships. For example, in order to assess the moderation effect of positive quality of relationship on supervision in Path 1, three interaction analyses were conducted: an interaction between positive quality of relationship and diagnosis on supervision, an interaction between positive quality of relationship and behavioral problems on supervision, and an interaction between positive quality of relationship and mental health/substance abuse problems on supervision. Thus, in order to assess Research Hypothesis 2c a significance level of $p \leq .017$ (i.e., .05/3) was utilized. Based on the same division principle, the adjusted significance level for
Research Hypothesis 2d was \( p \leq 0.017 \) (i.e., \( .05/3 \)), and the adjusted significance level for Research Hypothesis 2e was \( p \leq 0.025 \) (i.e., \( .05/2 \)).

**Assessment of the Research Questions and Hypotheses**

The first research question aims to address whether the relationship between caregivers’ primary stressors and caregivers’ involvement with the care-recipient are mediated by caregivers’ well-being.

Following Baron and Kenny’s (1986) criteria for evaluation of a mediation effect, three consecutive OLS path analysis regressions were conducted:

The first regression analysis will aim to address the first research question (RQ1a), and to assess whether there are significant relationships between the primary stressors and the involvement outcomes (supervision and amount of contact). Two separate hierarchical OLS regressions were conducted, including two blocks of predictors: background variables and primary stressors (two separate regressions were run for the two separate involvement outcomes).

The second, regression analysis will address the second research question (RQ1b) and assess whether there are significant relationships between the primary stressors and the potential mediator (caregivers’ well-being). Two separate hierarchical regressions were conducted (one for subjective burden and one for depressive symptomatology), each including two blocks of predictors: background variables and primary stressors.

Third, in order to assess whether caregivers’ well-being mediates the association between caregivers’ stressors and the level of caregivers’ involvement with the CR (RQ1c), there was a need to show that the previously significant relationship between primary stressors and involvement substantially reduced when the potential mediator is
taken into account. Each of the two involvement outcomes was regressed on each of the
two well-being indicators, controlling for background variables and primary stressors.
For example, in order to assess the mediation effect of subjective burden on frequency of
contact, frequency of contact was regressed on background variables, primary stressors,
and subjective burden. Thus, 4 hierarchical path analysis regression models will be
analyzed in order to assess the potential mediation effect of each of the two well-being
indicators on each of the two involvement indicators.

Finally, the magnitude of the indirect effect, defined as the difference between the
total effect and the direct effect was assessed (indirect effect = total effect – direct effect),
as well as the significance of the indirect effect, utilizing the Sobel Test. The Sobel test
assesses whether a mediator carries the influence of an independent variable to a
dependent variable. The test estimates whether the indirect effect of the independent
variable on the dependent variable via the mediator is significantly different from zero
(Baron & Kenny, 1986; Preacher & Hayes, 2004).

Sobel test equation:

\[
Z = \frac{a * b}{\sqrt{b^2 * s_a^2 + a^2 * s_b^2 + s_a^2 * s_b^2}}
\]

\(a\) = raw (unstandardized) regression coefficient for the association between IV and
mediator.
\(s_a\) = standard error of \(a\).
\(b\) = raw coefficient for the association between the mediator and the DV (when the IV is
also a predictor of the DV).
\(s_b\) = standard error of \(b\).

The second research question focuses on the role of the quality of the relationship
between the caregiver and the care recipient in the caregiving process.
The first two research hypotheses regarding the role of quality of relationship in the process of caregiving (H2a and H2b) were assessed by bivariate Pearson correlations between the two quality of relationship indicators (i.e., positive and negative qualities of the relationship) and primary stressors (i.e., care-recipients’ diagnosis, behavioral problems and mental health/substance use problems), caregivers’ well-being (i.e., subjective burden and depressive symptomatology), and levels of caregivers’ involvement with the care-recipient.

In order to address the moderation hypotheses (H2c, H2d, & H2e) a series of OLS regressions with an interaction term between the Quality of Relationship indicators (either positive or negative) to the relevant exogenous variables was conducted. For example, in order to assess whether undermining (i.e., negative relationship quality) moderates the relationship between care-recipient’s behavioral problems and caregivers’ depressive symptomatology (H2c), the following regression model was conducted: depressive symptomatology was regressed on background variables, primary stressors, quality of relationship indicators, and an interaction term between undermining to behavioral problems. The main effect of each of the variables included in the interaction term was assessed (e.g., main effect of undermining and behavioral problems, following by a test of the interaction effect. The presence of statistical interaction supports an interpretation that the effect of one variable upon a second variable is conditional upon a third variable. In a multiple regression model, statistical interaction can be represented by a term that is the product of the two variables that are hypothesized to interact (Cohen & Cohen, West, & Aiken, 2003). However, often the product term is highly correlated with the individual variables. Therefore, the interaction may present the problem of
multicollinearity to the models. To avoid this problem, the two variables included in the interaction term were centered (by subtracting the sample mean from the raw scores) prior to creating the product term. Furthermore, all other variables included in the regression model were centered in order to simplify the interpretation of the intercept (Cohen et al., 2003).

In order to interpret the statistically significant interaction effects the interactions were plotted. Following Cohen et al. (2003) recommendation, the regression was plotted by calculating the interaction at +1 SD, mean-centered-x (i.e., when the centered-x variable equals zero), and -1 SD on both centered-x (e.g., MH/SU problems) and centered-z (QoR). Adding the effect at mean-centered-x to the graph aimed to communicate that the decomposing of the interaction represents linear-by-linear interactions between centered variables.

First, in order to assess whether quality of relationship moderates the effect of stressors on CG involvement with the care-recipients, six OLS regression models were utilized. In each model an interaction term between one stressor (diagnosis, behavioral problem, MH/SA problems) and the quality of relationship indicator (either positive or negative relationships) was tested, controlling for the other stressors as well as for the background variables. Each model was repeated for each of the two involvement outcomes (supervision and amount of contact).

Second, in order to assess whether quality of relationship moderates the effect of stressors on CG well-being, six OLS regression models were utilized. In each model an interaction term between one stressor (diagnosis, behavioral problem, MH/SA problems) and the quality of relationship indicator was presented, controlling for the other stressors
as well as for the background variables. Each model was utilized for each of the two well-being indicators (subjective burden and depressive symptomatology).

Finally, in order to assess whether quality of relationship moderates the effect of caregivers’ well-being on caregivers’ involvement, four OLS regression models were utilized. In each model an interaction term between one of the well-being indicators (subjective burden and depressive) to the quality of relationship indicator was presented, controlling for the other background variables. Each model was repeated for each of the two involvement outcomes (supervision and amount of contact).
CHAPTER 6: RESULTS

Preliminary Univariate, Bivariate and Multivariate Analyses

Univariate frequencies and descriptive statistics (mean, standard deviation, range, skewness and kurtosis) were assessed for each of the study variables. For all of the study variables skewness and kurtosis were within normal limits (skewness < 2.0, kurtosis < 7.0). See Table 1 for descriptive statistics the study variables.

Bivariate correlation analysis was conducted to assess the magnitude and the direction of relationship among all of the study variables (See Table 2). Bivariate correlations was assessed between variables within each domain (i.e., between different stressors, well-being indicators, involvement indicators, as well as quality of relationship indicators), as well as across domains (e.g., between stressors and well being, or between quality of relationship and involvement). Examination of the bivariate correlations within the domains indicates that care-recipient’s substance use and mental health problems is positively and significantly correlated with the two other stressors, care-recipient’s current diagnosis ($r=.271$, $p <.05$) and care-recipient’s behavioral problems ($r=.43$, $p <.01$). No correlation between care-recipient’s current diagnosis and behavioral problems was found. A low and positive correlation was found between the two well-being indicators, caregiver’s subjective burden and depressive symptomatology ($r=.22$, $p <.05$). No significant correlation was found between the two involvement indicators ($r=-.16$, $p >.05$), whereas a moderately strong and significant correlation was found the between the positive (support) and negative (undermining) indicators of quality of relationships ($r=.48$, $p<.01$).
Concerning the correlations across domains, preliminary examination of the bivariate correlations of variables with the two involvement indicators indicates that care-recipient behavioral problems is positively and strongly correlated with level of supervision ($r=0.75$, $p<0.01$), whereas amount of contact is negatively and moderately correlated with two stressors, care-recipient behavioral problems ($r=-0.32$, $p<0.01$) and with care-recipient substance use and mental health problems ($r=-0.28$, $p<0.01$). No significant correlations between care-recipient’s diagnosis and level of involvement were found. Level of supervision was found to be moderately-strongly and positively correlated with caregivers’ subjective burden ($r=0.54$, $p<0.01$), but no other significant correlation between caregivers’ well-being indicators and involvement with the client was found. The bivariate analysis indicated that there were no very high ($r \geq 0.80$) correlations among any two variables, thus indicates no multicollinearity problems.

Based on the study theoretical model (see Figure 1), bivariate correlations assessed the relationship between caregivers’ and care recipients’ socio-economic and background variables with the outcome variables (i.e., amount of contact and supervision). This step had two main purposes: (a) to identify very high ($r \geq 0.80$) correlations, in order to avoid multicollinearity problems, and (b) since the number of variables in the model is relatively large to include in the multilevel analyses (OLS regression), given the study sample size ($N=82$), background variables which were not statistically correlated with the dependent variables were omitted from the final analyses. Socio-economic and background variables (i.e., potential covariates) included: objective burden (i.e., frequency of everyday disruptions), caregivers’ gender, caregivers’ age, caregivers’ employment status (employed or not employed) and caregivers’ marital status (married or
not), monthly family income, household finances, type of relationship to the woman (whether the caregiver is the woman’s significant other and whether the caregiver is the woman’s parent), caregivers’ overall social support, care-recipient’s living arrangement (with the caregiver or not) and type of care-recipient’s treatment program (residential or outpatient).

Four covariates were significantly correlated with one or both of the outcome variables. Objective burden was moderately and positively correlated with supervision (r=.47; p<.001); type of treatment program (residential or outpatient) was correlated with supervision (r=.27; p<.05) and with amount of contact (r=-.46; p<.001); thus caregivers’ to women in residential treatment program reported higher levels of supervision and lower levels of contact. Care-recipient’s living arrangement was significantly correlated with amount of contact (r = .23; p<.05), indicating that caregivers who share their residence with the care-recipient report higher amounts of contact. Finally caregivers’ overall social support was negatively and significantly correlated with caregiver’s supervision (r= -.25, p <.05). Nonetheless, only two covariates were included in the final model (see Table 2). Client living arrangement was omitted due to limited variability. Only 10 of the 82 women were living in their caregivers’ house. In addition all of the women who lived with their caregiver were outpatient clients. Overall social support was not included in the final analysis model due to some conceptual overlap with the quality of relationship scales. For example, in the ISEL scale caregivers’ were asked to report how frequently can they talk with family or friends or to what degree they feel like they have someone to turn to for advice or concrete help; whereas in the quality of relationship scale, caregivers were asked to indicate the amount to which the care-recipient listens to
them, shows impatience toward them or is willing to reciprocate help in return of the help
given by the caregiver.

Multivariate preliminary analyses included exploratory factor analyses of four scales:
quality of relationship, subjective burden, depressive symptomatology (CES-D), and
care-recipient’s behavioral problems. Factor analysis was conducted to assess the
underlying structure of the scales’ items.

Principle Component Analysis (PCA) with an orthogonal (Varimax) rotation was
selected as the method of analysis. Support for this method of analysis is found in
Mertler and Vannatta’s (2002) statement: “Principle component analysis is usually the
preferred method of factor extraction, especially when the focus of an analysis searching
for underlying structure is truly exploratory…Its goal is to extract the maximum variance
from the data set, resulting in a few orthogonal components.” (p. 250). Following Pett,
Lucky, and Sullivan’s (2003) recommendation, the cut-off point for item loadings
was.30. In addition, the internal consistency of the measures was assessed using
Cronbach’s alpha. This measure of reliability represents the proportion of total variance
in a given scale that can be attributed to a common source (DeVilles, 2003).

Quality of Relationship. Prior to factor analyzing the 6 items of the positive quality of
relationship scale and the 6 items of the negative quality of relationship scale, item
means, standard deviations, and inter-item correlation were explored. For the positive
quality of relationship scale, the item means ranged from 2.50 (“do something thoughtful
for you”) to 3.06 (“show respect for you”), with a standard deviations range from 1.00 to
1.05. All item distributions were in the acceptable normal range (Skewness <2; Kurtosis
<7). Examination of the correlation matrix indicated that all items correlated > .30 with
at least two other items in the matrix (range: .24 - .53). All correlations were significant at the .01 level. No inter-item correlation exceeded $r = .80$, thus indicating no problems of multicollinearity. As for the negative quality of relationship scale, the item means ranged from 1.72 (“ignore you”) to 2.70 (“expect more from you”), with standard deviations ranging from .85 to 1.18. All item distributions were in the acceptable normal range (Skewness <2; Kurtosis <7). Examination of the correlation matrix indicated that all items correlated > .30 with at least two other items in the matrix (range: .24 - .58). All correlations were significant at the .05 level (and the majority were significant at the .01 level). No inter-item correlation exceeded $r = .80$, thus indicating no problems of multicollinearity.

Principle Component Analysis (PCA) with an orthogonal (Varimax) rotation was utilized to assess the underlying structure of the 6 items of the positive quality of relationship scale as well as of the 6 items of the negative quality of relationship scale. Each analyses yield only one factor. All items loading were higher than .30, and ranged in magnitude between .58 and .82 (See Tables 3 & 4 for items loadings). The positive quality of relationship component accounted for 49.91% of the shared variance of the 6 items of the scale. The negative quality of relationship component accounted for 50.50% of the shared variance of the 6 items of the scale. Cronbach’s alpha for the positive quality of relationship scale was .81 ($M$=16.74, $SD$=4.42), and for the positive quality of relationship scale was .80 ($M$=12.15, $SD$=4.32), indicating that both scales had good internal consistency.

**Subjective Burden.** Prior to factor analyzing the 16 items of the subjective burden scale, item means, standard deviations, and inter-item correlation were explored. The
item means ranged from .65 (“worried friends will treat you differently”) to 3.00 (“worry about client’s future”), with a standard deviations range from 1.04 to 1.60. All item distributions were in the acceptable normal range (Skewness <2; Kurtosis <7).

Examination of the correlation matrix indicated that all items correlated > .30 with at least five other items in the matrix (range: .22 -.76). All correlations were significant at the .05 level (and the majority were significant at the .01 level). No inter-item correlation exceeded $r = .80$, thus indicating no problems of multicollinearity.

In order to assess the suitability of the 16 items of the subjective burden scale to be analyzed as unidimensional scale, a Principle Component Analysis (PCA) with restricted 1 factor (no rotation) was utilized. The subjective burden component accounted for 36.23% of the shared variance of the 16 items of the scale. All items loading were equal or higher than .30, and ranged in magnitude between .30 and .82. Cronbach’s alpha for the subjective burden scale was .87 ($M=27.27, SD=12.44$), indicating that the scale had very good internal consistency. These results support the suitability of the analysis of the 16 items as one scale of subjective burden.

**Depressive Symptomatology.** Prior to factor analyzing the 20 items of the depressive symptomatology scale, item means, standard deviations, and inter-item correlation were explored. The item means ranged from .16 (“people dislike me”) to 1.56 (“everything was an effort”), with a standard deviations range from .53 to 1.11. Two items presented moderate levels of skewness and kurtosis. Item #17, “crying spells”, had a skewness level of 2.75 and a kurtosis level of 7.20. Item #19, “people dislike me”, had a skewness level of 3.68 and a kurtosis level of 13.75. Examination of the correlation matrix indicated that all items correlated > .30 with at least one other items in the matrix (range: .22 -.75). All
correlations were significant at the .05 level (and the majority of the correlations were significant at the .01 level). No inter-item correlation exceeded $r = .80$, thus indicating no problems of multicollinearity.

In order to assess the suitability of the 20 items of the depressive symptomatology scale to be analyzed as unidimensional scale, a Principle Component Analysis (PCA) with restricted 1 factor (no rotation) was utilized. The depressive symptomatology component accounted for 30.69% of the shared variance of the 20 items of the scale. Three of the 20 items had loading lower than .30. Item 19 (“people dislike me”) had loading of .21, item 15 (“people unfriendly”) had loading of .11, and item 7 (“everything was effort”) had loading of .08. Two considerations led to the decision to leave all 20 items in the final depressive symptomatology scale. This was based on previous research utilization and evaluation of the CES-D. Previous research that evaluated the CES-D scale across a variety of demographic characteristics in the general population have indicated good internal consistency and construct validity (through measures of correlation with other self-reported measures, clinical ratings, and correlations with other related constructs) for the CES-D as a measure of depressive symptomatology (e.g., Ensel, 1986; Radloff, 1977). Furthermore, the CES-D has been validated in clinical and psychiatric settings (Corcoran & Fischer, 1987) and has been widely used in studies of caregivers of persons with Alzheimer’s, caregivers of persons with mental illnesses, as well as caregivers of persons with dual disorders (Biegel et al., 1994; Schultz & Williamson, 1991; Silver, 1999; Song et al., 1997). Thus, in order to keep consistency of the measure to other studies in the field, all 20 items of the CES-D will be retained for analysis. The second consideration to retain all 20 items is based on the Cronbach’s
alpha analysis. The internal consistency of the 20 items was .85, indicating good internal consistency. Examination of the item-total statistics indicates that deletion of items 15 and 19 will not result in any improvement of the alpha, whereas deletion of item 7 will result in only small improvement of the scales internal consistency (α if item is deleted = .87).

Care-Recipient’s Behavioral Problems. Prior to factor analyzing the 58 items of the care-recipient’s behavioral problems scale, item means, standard deviations, and inter-item correlation were explored. The item means ranged from .24 (“preoccupied with God”) to 2.70 (“had nothing to do with her time”), with a standard deviations range from .71 to 1.50. Two items presented moderately-high levels of skewness and kurtosis. Item #45, “preoccupied with God”, had a skewness level of 3.59 and a kurtosis level of 13.74. Item #22, “expressed thoughts to kill someone”, had a skewness level of 2.41 and a kurtosis level of 5.19. Examination of the correlation matrix indicated that all items correlated > .30 with at least four other items in the matrix. No inter-item correlation exceeded $r = .80$, thus indicating no problems of multicollinearity.

In order to assess the suitability of the 58 items of the care-recipient’s behavioral problems scale to be analyzed as unidimensional scale, a Principle Component Analysis (PCA) with restricted 1 factor (no rotation) was utilized. The care-recipient’s behavioral problems component accounted for 39.75% of the shared variance of the 58 items of the scale. Two of the 58 items had loadings lower than .30. Item 11 (“refuse to take medications”) had loading of .23, and item 45 (“preoccupied with God”) had loading of .22. Based on the Cronbach’s alpha analysis it was decided to retain all 58 items in the final scale. The internal consistency of the 58 items was .97, indicating an excellent
internal consistency. Examination of the item-total statistics indicates that deletion of items 11 or item 45 will not result in any improvement of the alpha.

Descriptive Analyses

This section will present descriptive data of the study’s sample, followed by descriptive analyses of the main study variables: caregiver’s primary stressors, well-being, involvement with the client, and quality of relationship.

Caregivers’ and Care-Recipients’ Demographic and Socioeconomic Characteristics

Tables 5 and 6 present selected demographic and socioeconomic characteristics of the study’s sample. Caregivers ranged in age from 18 to 77 years, with a mean age of 40.04 years (SD=13.59). Different as compared with caregiver populations in other studies, more of the caregivers were male (40.2%). Almost one-third (31.7%) of the caregivers were the significant other of the care recipients, while the remaining caregivers were either a sibling (23.2%), parent (19.5%), child (11.0%), or other relative (14.6%). Nonetheless, it is important to note that only 5% of the women in the study (n=4) were married, whereas the rest were never married (72%), divorced (18.3%) or separated (4.9%). The majority of the caregivers were African American (84.1%), 12.2% were Latino, and 3.6% were from other ethnicity. More than third (37.8%) of the caregivers worked full time, 22% worked part time, and 29.0% were unemployed. Very few caregivers’ (3.6%) had a current substance dependence disorder.

As shown in Table 6, Care recipients ranged in age from 21 to 55, with a mean age of 34.12 years (SD=8.50). Only one-half of care recipients (50%) had a high school education or greater. Similar to the caregivers, the majority (81.7%) of the care recipients defined themselves as African American, whereas the remaining defined themselves as
Latino (11.0%) or of other origin (7.3%). Slightly less than half (47.6%) of the care recipients were currently residing at an inpatient treatment program, whereas the rest of the care-recipients (52.4%) were outpatients. Almost one-third (32.9%) lived in their own home, with the remainder residing in the family caregiver’s home (12.2%) or were living with a relative or friend (3.6%). Most of the care-recipients who reported living in “other residential arrangement” (51.2%) were residing in a residential treatment program.

Over half (56.1%) of the care recipients met the criteria for a current dual disorder (mental illness and substance use disorder), while 43.9% had only a current substance use disorder. Most of the care recipients (n=70, 85.37%) were diagnosed with substance use dependency, whereas 11 care-recipients (13.42%) were diagnosed with substance abuse only. Of the care-recipients diagnosed with substance dependency, 58.57% were dependent on more than one drug. Over half of the care recipients were diagnosed with current cocaine (55.6%) or alcohol dependence (50.6%). Other substances with current dependence included marijuana (27.2%), PCP (8.6%), opiates (4.9%), and sedatives (1.2%). For the 56.1% of the sample who were diagnosed with dual-disorders, current mental disorders, included Major Depression (40.2%), Post-Traumatic Stress Disorder (28%), Mania (22%), Generalized Anxiety Disorder (13.4%), Hypomania (3.7%), and Dysthymia (2.4%).

Descriptive Analyses of the Study’s Central Variables

Primary Stressors. As can be seen in Table 1, on average caregivers reported care-recipient’s behavioral problems to be. On average, caregivers reported an average item mean of 1.55, indicating between “seldom” to “sometimes” (M=89.76, SD=47.09). The most frequent reported problematic behaviors attributed to the care-recipient by the
caregiver’s were: problems in managing money, too much time on her hands with
nothing to do, too dependent, irritability, lying or being untruthful, experiencing frequent
mood swings, being extremely anxious/worried, and experiencing feelings of depression/
extreme sadness. Regarding the extent of the care-recipient’s substance use and
emotional problems, on average caregivers reported an average item mean of 1.55,
indicating between “Mild” and “Moderate” severity of problems ($M=3.11$, $SD=2.00$).

**Caregiver Well Being.** As a group, caregivers in this sample reported an average
item mean of 1.70 on the subjective burden scale (indicating between “seldom” to
“sometimes” reported subjective burden) ($M=27.27$, $SD=12.44$). Furthermore, on
average, caregivers reported average item mean of .68 on the depressive symptomatology
scale (indicating experiencing depressive symptoms between “less than one” to “1-2 days
during the past week”) ($M=13.51$, $SD=9.38$). It is important to note that 39% of the
caregivers’ met the cut point score of being at risk for clinical depression ($\geq 16$ on the
CES-D). This percent is much higher than the mean of the general American population
(National Institute of Mental Health, 2001). Furthermore, caregiver’s of care-recipient’s
with dual disorders had significantly higher levels of depressive symptomatology as
compared to caregivers of care-recipient’s with substance use disorders only ($t=2.06,$
p<.05). One-quarter of caregivers to care-recipient’s with substance use only disorders
were at risk for clinical depression, whereas one-half of the caregivers to care-recipient’s
with dual disorders were at risk for clinical depression.

**Caregivers Involvement with the Care-Recipient.** Overall, on an average,
caregivers report an average item mean of 1.29 (indicating an item mean between “never”
to “seldom”) ($M=9.05$, $SD=6.13$) on supervision of the care-recipient scale. The most
frequent exercised types of supervision were: prevent care-recipient from using illegal drugs ($M=2.39$, $SD=1.49$) and prevent care-recipient from drinking too much ($M=1.65$, $SD=1.64$). It is interesting to note that caregivers’ to care-recipients in residential treatment reported significantly higher levels of supervision ($M=10.79$, $SD=6.34$) compared to caregivers’ to care-recipients participating in an outpatient treatment program ($M=7.47$, $SD=5.54$) ($t=-2.53$, $p < .01$). As for frequency of contact, caregivers reported an average item mean of 3.15 (indicating an item mean between “2-3 times per week” to “almost every day”) ($M=9.46$, $SD=2.97$).

**Quality of Relationship.** Caregivers in the study overall report supportive interaction with an average item mean of 2.79 (indicating an item mean between “some of the time” and “frequently”) ($M=16.74$, $SD=4.42$). As for undermining interaction (i.e., negative quality of relationships) with the care-recipients, caregivers report an average item mean of 2.03 (indicating an item mean between “some of the time” and “frequently”) ($M=12.15$, $SD=4.31$). A 2-tailed paired t-test indicates that caregivers’ perceive receiving significantly higher levels of support compared to undermining from the care-recipients ($t=5.42$, $p<.01$).

**Research Questions and Hypotheses - Findings**

**Research Question 1**

*What is the relationship between caregiver’s primary stressors, caregivers’ involvement with the care-recipient and caregiver’s well-being?*

More specifically, the study aimed to assess whether the relationship between caregiver’s primary stressors and caregivers’ involvement with the client are mediated by caregiver’s well-being?
In order to address this question, three consecutive questions and hypotheses were analyzed:

**Research Question 1a:** Do higher levels of primary stressors (i.e., dual diagnosis, greater behavioral problems, and greater perceived care-recipient’s substance abuse and mental health problems) predict lower levels of caregivers’ involvement with the care-recipient (i.e., less frequent contact and less supervision)?

**Hypothesis 1a:** Higher levels of caregiver’s primary stressors will predict lower levels of caregiver involvement with the care-recipient.

**Results:**

To test the relationship between caregivers’ primary stressors and caregivers involvement with the client, two hierarchical OLS regression were performed, one for each dependent variable (i.e., supervision and frequency of contact). The background variables (i.e., caregivers’ objective burden and care-recipients’ treatment program) were entered in the first step, whereas primary stressors were entered in the second step. The results of these regressions are presented in Table 7.

**Supervision.** Overall, the model which examined the impact of background variables and primary stressors on supervision was statistically significant, and explained 62% of the total variance in caregivers’ supervision ($R^2 = .62, p < .001$). Furthermore, the primary stressors contributed 34% to the explained variability of the caregivers’ supervision ($\Delta R^2 = .34; p < .001$). Consistent with the research hypothesis, higher levels of care-recipient’s mental health/substance use problems predicted lower levels of supervision ($B = -.60, p < .05$). Contrary to expectation, higher levels of care-recipient’s behavioral problems predicted higher levels of supervision ($B = .09, p < .001$), and care-
recipient’s diagnosis was not a significant predictor of supervision ($B=.60, p >.05$). Of the control variables, higher levels of objective burden predicted higher levels of caregivers’ supervision ($B=35, p<.01$). Thus, hypothesis 1a for the supervision outcome was only partially supported.

If a Bonferroni adjustment would have been imposed (with corrected observed significance level $\leq .017$), the result that higher levels of care-recipient’s mental health/substance use problems predict lower levels of supervision would not be significant at $p=.05$ level. In this case, hypothesis 1a for the supervision outcome would not be supported.

**Frequency of Contact.** Overall, the model which examined the impact of background variables and primary stressors on frequency of contact was statistically significant, and explained 33% of the total variance in caregivers’ supervision ($R^2 = .33, p < .001$). Furthermore, the primary stressors contributed 11% to the explained variability of the frequency of contact ($\Delta R^2 = .11; p < .01$). As hypothesized, higher levels of care-recipient’s mental health/substance use problems predicted lower frequency of contact ($B=-.45, p <.01$). The other two stressors, care-recipient’s behavioral problems ($B= -.01, p >.05$), and care-recipient’s diagnosis ($B=.47, p >.05$) were not significant predictors of frequency of contact. Of the control variables, the type of treatment program significantly predicted frequency of contact ($B=-2.11, p < .01$). Caregivers to care-recipients who participate in a residential treatment program have less frequent contact with the care-recipient, as compared to caregivers to care-recipients participating in a non-residential treatment program. Thus, hypothesis 1a for the frequency of contact was partially supported.
If a Bonferroni adjustment would have been imposed (with corrected observed significance level ≤ .017), no conclusions would have been changed regarding hypothesis 1a for the frequency of contact outcome.

**Research Question 1b:** Do higher levels of primary stressors predict lower levels of caregivers’ well-being?

**Hypothesis 1b:** Higher levels of primary stressors (i.e., dual diagnosis, greater behavioral problems, and greater perceived substance abuse and mental health problems) will predict lower levels of caregivers’ well-being (i.e., higher levels of subjective burden and higher levels of depressive symptomatology).

**Results:**

To test the relationship between caregivers’ primary stressors and caregivers’ well-being, two hierarchical OLS regression were performed, one for each dependent variable (i.e., subjective burden and depressive symptomatology). The background variables (i.e., caregivers’ objective burden and care-recipients’ treatment program) were entered in the first step, whereas primary stressors were entered in the second step. The results of these regressions are presented in Table 8.

**Subjective Burden.** Overall, the model which examined the impact of background variables and primary stressors on subjective burden was statistically significant, and explained 37% of the total variance in caregivers’ subjective burden ($R^2 = .37, p < .001$). However, the primary stressors (step 2) did not contribute significantly to the total explained variability of the caregivers’ subjective burden ($\Delta R^2 = .06; p > .05$). Furthermore, care-recipient’s diagnosis ($B = -.81, p > .05$), care-recipient’s behavioral problems ($B = .05, p > .05$), and care-recipient’s mental health/substance use problems
(B=.85, p >.05) were not significant predictors of caregivers’ subjective burden. Of the control variables, higher levels of objective burden predicted higher levels of caregivers’ subjective burden (B=1.21, p <.001). Thus, hypothesis 1b for the subjective burden was not supported.

**Depressive Symptomatology.** Overall, the model which examined the impact of background variables and primary stressors on depressive symptomatology was statistically significant, and explained 17% of the total variance in caregivers’ depressive symptomatology (R² = .17, p < .01). The primary stressors contributed the majority of the explained variability in caregivers’ depressive symptomatology (ΔR² = .16; p < .01). As hypothesized, higher levels of care-recipient’s mental health/substance use problems predicted higher levels of depressive symptomatology (B = 1.45, p < .01). The other two stressors, care-recipient’s behavioral problems (B = .03, p > .05), and care-recipient’s diagnosis (B = 2.76, p > .05) were not significant predictors of caregivers’ depressive symptomatology. None of the control variables were significant predictors of caregivers’ depressive symptomatology. Thus, hypothesis 1b for depressive symptomatology was only partially supported.

If Bonferroni adjustment would have been imposed (with corrected observed significance level ≤ .017), no conclusions would have been changed regarding hypothesis 1b for depressive symptomatology.

**Research Question 1c:** Does caregivers’ well-being mediate the association between caregivers’ stressors and the level of caregivers’ involvement with the care-recipient?
Hypothesis 1c1: Higher levels of caregivers’ primary stressors will predict higher levels of caregivers’ involvement with the care-recipient directly, as well as indirectly, through increasing caregivers’ subjective burden; higher levels of subjective burden will predict higher levels of caregivers’ involvement with the care-recipient.

Hypothesis 1c2: Higher levels of caregivers’ primary stressors will predict lower levels of caregivers’ involvement with the care-recipient directly, as well as indirectly, through increasing caregivers’ depressive symptomatology; higher levels of depressive symptomatology will predict lower levels of caregivers’ involvement with the care-recipient.

Results:

In order to assess the mediating effects of caregivers’ well-being in the research model four conditions were examined (Baron & Kenny, 1986): (a) there is a significant association between primary stressors and caregivers’ involvement with the client (Condition 1)(See Table 7); (b) there is a significant association between primary stressors and caregivers’ well-being (Condition 2) (See Table 8); (c) there is a significant association between caregivers’ well-being and caregivers’ involvement with the client, controlling for caregivers’ stressors (Condition 3)(See Tables 9 & 10); and (d) the previously significant relationship between primary stressors and involvement was substantially reduced when the well-being indicator was taken into account (Condition 4) (See Table 9 for hypothesis 1c1, and Table 10 for hypothesis 1c2).

Condition 1 was tested in hypothesis 1a, as shown in Table 7. The hypothesis was supported for the care-recipient’s emotional and substance use problems variable, for
both involvement outcomes (i.e., frequency of contact and supervision). Condition 2 was tested in hypothesis 1b, as shown in Table 8. The hypothesis was supported for the impact of care-recipient’s emotional and substance use problems variable on caregivers’ depressive symptomatology.

*The Role of Subjective Burden as Mediator between Caregivers’ Stressors and Involvement*

To test condition 3 in the mediation analysis, as for the relationship between caregivers’ subjective burden and caregivers’ involvement with the care-recipient, controlling for caregivers’ stressors, two hierarchical OLS regression were performed, one for each dependent variable (i.e., supervision and frequency of contact). The background variables (i.e., caregivers’ objective burden and care-recipients’ treatment program) were entered in the first step (block), primary stressors were entered in the second step, and subjective burden was entered in the third step (See Table 9).

*Frequency of Contact.* Overall, the model which examined the impact of subjective burden on frequency of impact was statistically significant, and explained 33% of the total variance in frequency of contact ($R^2 = .33, p < .001$). However, subjective burden was not a significant predictor of frequency of contact ($B = .02, p > .05$). Thus, condition 3 in the mediation analysis was not supported for the association between subjective burden and frequency of contact.

Since subjective burden did not significantly predict frequency of contact, controlling for caregivers’ stressors and background variable (Condition 3), it can be concluded that the hypothesis regarding the mediation role of subjective burden in the association between caregivers’ stressors and frequency of contact (Hypothesis 1c1) was not supported.
Supervision. Overall, the model which examined the impact of subjective burden on supervision was statistically significant, and explained 66% of the total variance in caregivers’ supervision ($R^2 = .66$, $p < .001$). Furthermore, subjective burden was significantly associated with supervision ($B = .12$, $p < .01$), and contributed 4% to the explained variance in supervision ($\Delta R^2 = .04$; $p < .01$). Thus, condition 3 in the mediation analysis (in hypothesis 1c1) was not supported for the association between subjective burden and supervision.

Tables 7, 8, and 9 present the path to evaluate the mediation role of subjective burden in the association between caregivers’ stressors and the level of caregivers’ supervision, controlling for objective burden and type of treatment program.

Care-Recipient Diagnosis. Whether the care-recipient was diagnosed with dual-disorders or with substance use disorder only was not significantly related to any of the involvement measures (Condition 1, see Table 7), or to subjective burden (Condition 2, see Table 8), controlling for background variables. Thus, conditions 1 and 2 were not met, and therefore there is no support to the hypothesis that subjective burden mediates the association between care-recipients’ diagnosis and supervision (Hypothesis 1c1).

Care-Recipients’ Behavioral Problems. Care-recipients’ behavioral problems was significantly associated with supervision, controlling for background variables ($B = .09$, $p < .001$; see Table 7)(Condition 1). However, care-recipients’ behavioral problems was not significantly associated with subjective burden ($B = .05$, $p > .05$; see Table 8) (Condition 2), nor its magnitude of association with subjective burden was reduced while subjective burden (the potential mediator) was added to the regression model ($B = .09$, $p < .001$; see Table 9) (Condition 3). Thus, the hypothesis that subjective burden will
mediate the association between care-recipients’ behavioral problems and supervision was not supported.

**Care-Recipients’ Mental Health/Substance Use Problems.** Care-recipients’ mental health/substance use problems was significantly associated with supervision, controlling for background variables ($B=-.60, p<.01$; see Table 7)(Condition 1). However, care-recipients’ mental health/substance use problems was not significantly associated with subjective burden ($B=.85, p>.05$; see Table 8) (Condition 2), nor was its magnitude of association with subjective burden reduced when subjective burden (the potential mediator) was added to the regression model ($B=-.70, p<.01$; see Table 9) (Condition 3). Furthermore, care-recipients’ mental health/substance use problems was more strongly related to supervision after controlling for subjective burden (the potential mediator). Thus, the original relationship between care-recipients’ mental health/substance use problems and supervision was suppressed by subjective burden. Hence, the hypothesis that subjective burden will mediate the association between care-recipients’ mental health/substance use problems and supervision was not supported.

**Objective Burden.** Caregivers’ subjective burden appears to mediate the linkage between caregivers’ objective burden and supervision (see Figure 2). Objective burden was significantly associated with supervision ($B=.35, p<.01$; see Table 7)(Condition 1). In addition, objective burden was significantly associated with subjective burden ($B=1.21, p<.001$; see Table 8) (Condition 2), controlling for type of treatment and caregivers’ stressors. Furthermore, the association between objective burden and supervision was reduced in magnitude and was no longer significant when subjective burden (the potential mediator) was added to the regression model ($B=.20, p>.05$; see
Table 9) (Condition 3). Thus complete mediation of subjective burden is indicated
(indirect effect = .12 \times 1.21 = .15; \text{Z-value}=2.27; p=.02). Figure 2 presents the mediation
effect of subjective burden.

If Bonferroni adjustment would have been imposed (corrected observed \( p \leq .017 \)), the
result that subjective burden mediates the relationships between objective burden and
supervision would not be significant at \( p=.05 \) level.

The role of Depressive Symptomatology as Mediator between Caregivers’ Stressors and
Involvement

To test the relationship between caregivers’ depressive symptomatology and
caregivers’ involvement with the care-recipient, controlling for caregivers’ stressors
(Condition 3 in the mediation analysis) two hierarchical OLS regression were performed,
one for each dependent variable (i.e., supervision and frequency of contact). The
background variables were entered in the first step, primary stressors were entered in the
second step, and depressive symptomatology was entered in the third step (See Table 10).

Frequency of Contact. Overall, the model which examined the impact of
depressive symptomatology on frequency of contact was statistically significant, and
explained 33% of the total variance in frequency of contact (\( R^2 = .33, p < .001 \)). However,
depressive symptomatology was not significantly associated with frequency of contact
(\( B=.01, p>.05 \)). Thus, condition 3 in the mediation analysis was not supported for the
association between depressive symptomatology and frequency of contact (See Table
10).

Since depressive symptomatology was not significantly associated with frequency
of contact, controlling for caregivers’ stressors and background variable (Condition 3), it
can be concluded that the hypothesis regarding the mediation role of depressive
symptomatology in the association between caregivers’ stressors and frequency of contact was not supported (Hypothesis 1c2).

_Supervision_. As can be seen in Table 10, the model which examined the impact of depressive symptomatology on supervision was statistically significant, and explained 62% of the total variance in frequency of impact ($R^2 = .62$, $p < .001$). However, depressive symptomatology was not significantly associated with supervision ($B=.03$, $p>.05$). Thus, condition 3 in the mediation analysis was not supported for the association between depressive symptomatology and supervision.

Since depressive symptomatology was not significantly associated with supervision, controlling for caregivers’ stressors and background variable (Condition 3), it can be concluded that the hypothesis regarding the mediation role of depressive symptomatology in the association between caregivers’ stressors and supervision was not supported (Hypothesis 1c2).

Table 11 summarizes the main findings for Research Question1.

_Research Question 2_

_Does quality of the caregiver-care recipient relationship moderate the relationship among the three domains of the caregiving process: caregivers’ stressors, caregivers’ well being, and the amount of caregivers’ involvement with the care-recipient?_

_Preliminary Hypotheses - Findings_

In order to address the moderation question, two preliminary hypotheses will be assessed:

_Hypothesis 2a:_ Higher levels of positive quality of relationship (i.e., supportive interaction) between caregiver and care recipient will be associated with lower levels of
primary stressors, higher levels of caregiver’s well-being, and higher levels of caregiver’s involvement with the care-recipient.

Results:

As can be seen in Table 2, Hypothesis 2a is partially supported.

Primary Stressors. Higher levels of positive quality of relationships (i.e., supportive interaction) is significantly correlated with lower levels of behavioral problems ($r=-.31$, $p<.01$) and with lower levels of perceived substance abuse and mental health problems ($r=-.38$, $p<.01$). However, positive quality of relationships is not significantly correlated with care-recipie’s current diagnosis.

Caregivers’ Well-Being. Higher levels of positive quality of relationship is significantly correlated with lower levels of subjective burden ($r=-.26$, $p<.05$), but is not significantly correlated with caregivers’ depressive symptomatology.

Caregivers’ Involvement. Higher levels of positive quality of relationship is significantly correlated with higher frequency of contact ($r=.42$, $p<.01$), but is not significantly correlated with supervision.

Hypothesis 2b: It is expected that higher levels of negative quality of relationship (i.e., undermining interactions) between caregiver and care recipient will be associated with higher levels of primary stressors, lower levels of caregivers’ well-being, as well as lower levels of caregiver’s involvement with the care-recipient.

Results:

As can be seen in Table 2, Hypothesis 2b is partially supported.

Primary Stressors. Higher levels of negative quality of relationship (i.e., undermining interactions) is significantly associated with higher levels of behavioral
problems \((r=.34, p<.01)\) and with greater perceived substance abuse and mental health problems \((r=.32, p<.01)\). However, negative quality of relationships is not significantly correlated with care-recipient’s current diagnosis.

*Caregivers’ Well-Being.* Higher levels of negative quality of relationship is significantly correlated with higher levels of subjective burden \((r=.22, p<.05)\), but is not significantly correlated with caregivers’ depressive symptomatology.

*Caregivers’ Involvement.* Contrary to expectations, higher levels of negative quality of relationship is significantly correlated with higher levels of supervision \((r=.25, p<.05)\), but is not significantly correlated with frequency of contact.

To test the moderation effects of positive and negative quality of relationships in the various research model links, a series of Hierarchical OLS regressions with an interaction term between the Quality of Relationship indicators (either positive or negative) to the relevant exogenous variables were conducted (See Tables 12-24). *Quality of Relationship as a Moderator between Caregivers’ Stressors and Involvement (Path 1, research model, see Figure 1).* 

**Hypothesis 2c:** Quality of relationship will moderate the effect of stressors on caregivers’ involvement with the care-recipient. Higher level of positive quality of relationship (i.e., higher levels of supportive interactions) will buffer the negative effect of caregivers’ stressors on caregivers’ involvement with the care-recipients; whereas higher level of negative quality of relationship (i.e., higher levels of undermining by the CR) will exacerbate the negative effect of stressors on caregivers’ involvement with the care-recipients.

**Results:**
The Moderating Effect of Positive Quality of Relationship (Supportive Interaction) and Caregivers’ Stressors on Caregivers Involvement

The moderation hypothesis for positive quality of relationship was partially supported for the frequency of contact outcome, but was not supported for the supervision outcome.

Frequency of Contact. Three Hierarchical OLS regressions models with an interaction term between Positive Quality of Relationship (i.e., support) and caregivers’ stressors were conducted to assess this interaction effect on caregivers’ frequency of contact (see Table 12). In the first step the background variables (i.e., caregivers’ objective burden and care-recipients’ treatment program) were entered. Step 2 introduced the primary stressors, in step 3 both positive and negative indicators of quality of relationship were entered, and in step 4 the relevant interaction term was entered. Three separate interaction models were examined, one for each type of stressor: support and care-recipients’ diagnosis (Model 1), support and care-recipients’ behavioral problems (Model 2), and support and care-recipients’ mental health/substance use problems (Model 3).

As shown in Table 12, all regression models were statistically significant, and explained between of 49% to 52% of the total variance in caregiver’s frequency of contact ($R^2 = .49$ to $.52, p \leq .001$). Across the models, the background variables (step 1) explained 22% of the variance in frequency of contact ($R^2 = .22, p < .001$), primary stressors (step 2) contributed 11% to the explained variance ($\Delta R^2 = .11, p < .01$), and quality of relationship (step 3) added 15% to the explained variance ($\Delta R^2 = .15, p < .001$). The additional explained variance across the models was attributed to the different
interaction effects: in Model 1 the interaction effect explained no additional variance in
the outcome ($\Delta R^2 = .01, p > .05$); in Model 2, the interaction effect contributed 3% to the
total explained variance ($\Delta R^2 = .03, p < .05$), whereas in Model 3 the interaction effect
contributed 4% to the explained variance in frequency of contact ($\Delta R^2 = .04, p < .01$).

Across the models, higher levels of objective burden predicted more frequent contact
with the care recipient ($B$ range = .19 to .21, $p < .05$), whereas care-recipients’
participation in a residential treatment program predicted less frequent caregivers’ contact
with the care recipient ($B$ range = -2.02 to -2.23, $p < .001$). Furthermore, across the models
higher levels of support (i.e., positive quality of relationship) had a main effect on
frequency of contact ($B$ range = .22 to .34, $p < .05$). Higher levels of supportive
interactions predicted higher frequency of contact, controlling for background variables,
caregivers’ primary stressors, and undermining interactions. However, across the models,
undermining level (i.e., negative quality of relationship) had no main effect on frequency
of contact.

Care-recipients’ diagnosis (Table 12, Model 1) did not have a main effect on
caregivers’ frequency of contact ($B = .23, p > .05$). Furthermore, there was no significant
interaction effect between care-recipients’ diagnosis and positive quality of relationship,
on frequency of contact ($B = .15, p > .05$).

As can be seen in Model 2 (Table 12), care-recipients’ behavioral problems had no
main effect on caregivers’ frequency of contact ($B = -.01, p > .05$). However, there is a
significant interaction effect between care-recipients’ behavioral problems and positive
quality of relationship, on frequency of contact ($B = .003, p = .04$), suggesting that the
impact of care-recipients’ level of behavioral problems on frequency of contact depends
on the level of caregiver-care recipient supportive relationship (positive quality of relationship)(see Figure 3).

The interaction suggests that higher levels of positive quality of relationship (i.e., higher levels of supportive interactions) buffer the negative effect of care-recipient’s behavioral problems on the frequency of caregivers’ contact with the care-recipients. In other words, positive quality of relationship weakens the deleterious effect of increased behavioral problems on frequency of contact. The extent of reduction in the frequency of contact resulting from higher levels of behavioral problems depends on the levels of positive quality of relationship. When the level of positive quality of relationship is high, the decrease in frequency of contact resulting from higher levels of behavioral problems is low. However, when the level of positive quality of relationship is low, the decrease in frequency of contact resulting from higher levels of behavioral problems is high, and when the level of positive quality of relationship is at the mean (average), the decrease in frequency of contact resulting from higher levels of behavioral problems is moderate.

It is important to note that if a Bonferroni adjustment would have been imposed (corrected observed $p \leq .017$), the interaction effect between care-recipients’ behavioral problems and positive quality of relationship on frequency of contact would not be significant at $p = .05$ level.

As indicated in Model 3 (Table 12), care-recipients’ mental health/substance use problems have main effect on caregivers’ frequency of contact ($B = -.32, p < .05$). Thus, higher levels of care-recipients’ mental health/substance use problems predict lower frequency of contact. Furthermore, there is a significant interaction effect between care-recipients’ mental health/substance use problems and positive quality of relationship, on
frequency of contact \((B=.07, p=.01)\), suggesting that the impact of care-recipients’ level of mental health/substance use problems on frequency of contact depends on the level of caregiver-care recipient supportive relationship (positive quality of relationship)(see Figure 4). The interaction suggests that higher levels of positive quality of relationship (i.e., higher levels of supportive interactions) buffer the negative effect of care-recipient’s mental health/substance use problems on the frequency of caregivers’ contact the care-recipients. In other words, the negative impact of care-recipients’ mental health/substance use problems on frequency of contact is lessened by a more positive quality of relationship. When the level of positive quality of relationship is high, the decrease in frequency of contact resulting from higher levels of mental health/substance use problems is very low. However, when the level of positive quality of relationship is low, the decrease in frequency of contact resulting from higher levels of mental health/substance use problems is high, and when the level of positive quality of relationship is at the mean (average), the decrease in frequency of contact resulting from higher levels of mental health/substance use problems is moderate. Thus, hypothesis 2c regarding the moderation role of positive quality of relationships in the association between caregivers’ stressors and frequency of contact was partially supported.

*Additional Findings.* It is interesting to note that until quality of relationship was entered into the model predicting frequency contact (i.e., when only background variables and stressors were modeled) (see Tables 7), objective burden did not predict caregivers’ contact. However, as positive quality of relationship was introduced to the model (see Table 12), objective burden became a significant predictor of caregiver’s frequency of contact. Furthermore, in the bivariate level, objective burden does not significantly
correlated with caregivers’ frequency of contact ($r=-.02, p>.05$). This pattern raised the question regarding a potential interaction effect between supportive quality of relationship and objective burden on frequency of contact.

As shown in Table 13, the regression model was statistically significant, and explained 50% of the total variance in caregiver’s frequency of contact ($R^2 = .50, p \leq .001$). The background variables (step 1) explained 22% of the variance in frequency of contact ($R^2 = .22, p < .001$), primary stressors (step 2) contributed 11% to the explained variance ($\Delta R^2 = .11, p < .01$), negative quality of relationship (step 3) did not contribute to the explained variance ($\Delta R^2 = .00, p > .05$), and positive quality of relationship (i.e., support) added 15% to the explained variance ($\Delta R^2 = .15, p < .001$)(step 4). The interaction effect between objective burden and support (step 5) contributed a small but significant amount (3%) to the explained variance in frequency of contact ($\Delta R^2 = .03, p=.05$).

Objective burden ($B=.20, p=.01$) as well as support ($B=.30, p<.001$) had main effect on frequency of contact. Furthermore, there was a significant interaction effect between caregivers’ objective burden and positive quality of relationship, on frequency of contact ($B=.03, p=.05$). The interaction effect suggests that the impact of caregivers’ objective burden on frequency of contact depends on the level of caregiver-care recipient supportive relationship (positive quality of relationship). The interaction suggests that higher levels of positive quality of relationship (i.e., higher levels of supportive interactions) enhance the effect of caregivers’ objective burden on the frequency of caregivers’ contact with the care-recipients. In other words, frequency of contact is positively related to positive quality of relationship and to the level of objective burden.
The positive interaction term indicates that having both, high levels of positive quality of relationship and high levels of objective burden leads to even higher frequency of contact than the sum of the two predictors would predict (this pattern is called synergistic or enhancing interaction) (Cohen et al., 2003).

It is important to note that if a Bonferroni adjustment would have been imposed (corrected observed \( p \leq .017 \)), the interaction effect between caregivers’ objective burden and positive quality of relationship on frequency of contact would not be significant at \( p=.05 \) level.

**Supervision.** Three hierarchical OLS regressions with an interaction term between positive quality of relationship and primary stressors were conducted to assess the interaction effect on supervision. In the first step the background variables were entered. Step 2 introduced the primary stressors, in step 3 both indicators of quality of relationship were entered, and in step 4 the relevant interaction term was entered. Three separate interaction models were examined, one for each type of stressor: Support and care-recipients’ diagnosis (Model 1), support and care-recipients’ behavioral problems (Model 2), and support and care-recipients’ mental health/substance use problems (Model 3).

As can be seen in Table 14, all regression models were statistically significant, and explained between 62%-63% of the total variance in supervision (\( R^2 = .62-.63, p < .001 \)). The first block (background variables) explained 28% of the total variance (\( R^2 = .28 p < .001 \)), whereas the second block (primary stressors) contributed an additional 34% (\( \Delta R^2 = .34, p < .001 \)) to the explained variance in supervision. Across the models, higher levels of objective burden predicted higher levels of supervision (\( B \) range = .37 to .38, \( p<.01 \)); Higher levels of care-recipient’s behavioral problems predicted higher levels of
supervision ($B$ range $= .09$ to $10, p<.001$), whereas higher levels of care-recipient’s mental health/substance use problem predicted lower levels of supervision ($B$ range $= - .57$ to $- .58, p<.05$).

Across the models, levels of support (i.e., positive quality of relationship) or levels of undermining (i.e., negative quality of relationship) had no main effect on supervision, controlling for background variables and primary stressors. Furthermore, no significant interaction effect was indicated between positive quality of relationships and any of the stressors on supervision. Thus, hypothesis 2c regarding the moderation role of positive quality of relationships in the association between caregivers’ stressors and supervision was not supported.

The Moderation Effect of Negative Quality of Relationship (Undermining Interaction) and Caregivers’ Stressors on Caregivers’ Involvement

The hypotheses regarding the moderation role of negative quality of relationship in the association between caregivers’ stressors and involvement was not supported for any of the involvement outcomes (frequency of contact and supervision)(See Tables 15 & 16).

Three hierarchical OLS regressions with an interaction term between the Negative Quality of Relationship and primary stressors were conducted to assess the interaction effect on involvement (separate regression models were conducted to assess each involvement outcome). In the first step the background variables were entered. Step 2 introduced the primary stressors, in step 3 both indicators of quality of relationship were entered, and in step 4 the relevant interaction was entered. Three separate interaction models were examined, one for each type of stressor: Undermining and care-recipients’
diagnosis (Model 1), undermining and care-recipients’ behavioral problems (Model 2),
and undermining and care-recipients’ mental health/substance use problems (Model 3).

Frequency of Contact. As shown in Table 15, All regression models were statistically
significant, and explained between 48% and 49% of the total variance in frequency of
contact \((R^2 = .48 - .49, p < .001)\). Across the models, the background variables (step 1)
explained 22% of the variance in frequency of contact \((R^2 = .22, p < .001)\), primary
stressors (step 2) contributed 11% to the explained variance \((\Delta R^2 = .11, p < .01)\), and
quality of relationship (step 3) added 15% to the explained variance \((\Delta R^2 = .15, p < .001)\).

Across the models, higher levels of objective burden predicted more frequent contact
with the care recipient \((B \text{ range } = .19 \text{ to } .23, p < .01)\), whereas care-recipients’
participation in a residential treatment program predicted less frequent caregivers’ contact
with the care recipient \((B \text{ range } = -2.04 \text{ to } -2.19, p < .001)\). Furthermore, across the
models higher levels of support (i.e., positive quality of relationship) had a main effect on
frequency of contact \((B \text{ range } = .31 \text{ to } .32, p < .001)\). Higher levels of supportive
interactions predicted higher frequency of contact, controlling for background variables
and caregivers’ primary stressors. However, across the models level of undermining (i.e.,
negative quality of relationship) had no main effect on frequency of contact controlling
for background variables and primary stressors. Furthermore, no significant interaction
effect was indicated between negative quality of relationships and any of the stressors on
frequency of contact.

Supervision. As shown in Table 16, all regression models were statistically
significant, and explained between 62% and 63% of the total variance in supervision \((R^2
= .62 - .63, p < .001)\). Across models, the first block (background variables) explained
28% of the total variance ($R^2 = .28, p < .001$), whereas the second block (primary stressors) contributed additional 34% ($\Delta R^2 = .34, p < .001$) to the explained variance in supervision. Across the models, higher levels of objective burden predicted higher levels of supervision ($B$ range $= .34$ to $,.39$, $p<.01$). In addition, across the models, higher levels of care-recipient’s behavioral problems predicted higher levels of supervision ($B=.09$, $p<.001$).

Across the models, levels of support (i.e., positive quality of relationship) or levels of undermining (i.e., negative quality of relationship) had no significant main effect on supervision, controlling for background variables and primary stressors. Furthermore, no significant interaction effect was indicated between positive quality of relationships and any of the stressors on supervision.

**Quality of Relationship as a Moderator between Caregivers’ Stressors and Well-Being**

(Path 2, research model, see Figure 1).

**Hypothesis 2d:** Quality of relationship will moderate the effect of stressors on caregivers’ well-being. Higher level of positive quality of relationship (i.e., higher levels of supportive interactions) will buffer the negative effect of stressors on caregivers’ well-being, whereas higher level of negative quality of relationship (i.e., higher levels of undermining) will exacerbate the negative effect of stressors on caregivers’ subjective burden and depressive symptomatology.

**Results:**

Three hierarchical OLS regressions with an interaction term between the Quality of Relationship indicator (positive or negative) and primary stressors were conducted to assess the interaction effect on each of the caregivers’ well-being indicators (subjective
burden or depressive symptomatology). In the first step the background variables were entered. Step 2 introduced the primary stressors, in step 3 both indicators of quality of relationship were entered, and in step 4 the relevant interaction was entered. Six separate interaction models were examined for each of the well-being outcomes (subjective burden and depressive symptomatology): undermining/support and care-recipients’ diagnosis, undermining/support and care-recipients’ behavioral problems, and undermining/support and care-recipients’ mental health/substance use problems.

The moderation hypothesis for quality of relationship (positive or negative) was not supported for any of the well-being outcomes (subjective burden or depressive symptomatology) (see Tables 17, 18, 19, & 20).

The Moderation Effect of Positive Quality of Relationship (Supportive Interaction) and Caregivers’ Stressors on Caregivers Well-Being

Subjective Burden. As can be seen in Table 17, all regression models were statistically significant, and explained 38% of the total variance in subjective burden ($R^2 = .38, p < .001$). Across the models, the background variables (step 1) explained 31% of the variance in subjective burden ($R^2 = .31, p < .001$), where the rest of the predictors explained a non-significant share of the explained variance in subjective burden.

Across the models, higher levels of objective burden predicted higher levels of subjective burden ($B$ range = 1.23 to 1.31, $p < .01$). Across the models, levels of support (i.e., positive quality of relationship) or levels of undermining (i.e., negative quality of relationship) had no significant main effect on subjective burden, controlling for background variables and primary stressors. Furthermore, no significant interaction effect
was indicated between positive quality of relationship and any of the stressors on subjective burden.

Depressive Symptomatology. As can be seen in Table 18, two of the three regression models were statistically significant ($p<.05$), and explained between 18% and 19% of the total variance in depressive symptomatology ($R^2 = .18$ to $.19$, $F=1.95$ - 2.14). Across the models, the stressors variables (step 2) explained 16% of the variance in depressive symptomatology ($R^2 = .16$, $p < .01$), where the rest of the predictors explained a non-significant share of the explained variance in subjective burden. It is important to note that if Bonferroni adjustment would have been imposed (corrected observed $p \leq .017$), the three models predicting depressive symptomatology would not be significant at $p=.05$ level.

Across the models, higher levels of care-recipient’s mental health/substance use problems predicted higher levels of depressive symptomatology ($B$ range = 1.61 to 1.65, $p<.01$). Across the models, levels of support (i.e., positive quality of relationship) or levels of undermining (i.e., negative quality of relationship) had no significant main effect on depressive symptomatology, controlling for background variables and primary stressors. Furthermore, no significant interaction effect was indicated between positive quality of relationship and any of the stressors on depressive symptomatology.

The Moderation Effect of Negative Quality of Relationship (Undermining Interaction) and Caregivers’ Stressors on Caregivers Well-Being

Subjective Burden. As shown in Table 19, all regression models were statistically significant, and explained between 37% and 38% of the total variance in subjective burden ($R^2$ range= .37 to .38 , $p<.001$). Across the models, the background variables
(step 1) explained 31% of the variance in subjective burden \( (R^2 = .31, p < .001) \), where the rest of the predictor explained a non-significant share of the explained variance in subjective burden.

Across the models, higher levels of objective burden predicted higher levels of subjective burden \( (B \text{ range} = 1.25 \text{ to } 1.33, p < .01) \). Across the models, levels of support (i.e., positive quality of relationship) or levels of undermining (i.e., negative quality of relationship) had no significant main effects on subjective burden, controlling for background variables and primary stressors. Furthermore, no significant interaction effects were indicated between positive quality of relationships and any of the stressors on subjective burden.

**Depressive Symptomatology.** As shown in Table 20, only one regression model was statistically significant, and explained 20% of the total variance in depressive symptomatology \( (R^2 = .20, F = 2.30; p < .05) \). Across the models, the stressors variables (step 2) explained 16% of the variance in depressive symptomatology \( (R^2 = .16, p < .01) \), where the rest of the predictors explained a non-significant share of the explained variance in subjective burden. It is important to note that if Bonferroni adjustment would have been imposed (corrected observed \( p \leq .017) \), the three models predicting depressive symptomatology would not be significant at \( p = .05 \) level.

Across the models, higher levels of care-recipient’s mental health/substance use problems predicted higher levels of depressive symptomatology \( (B \text{ range} = 1.65 \text{ to } 1.74, p < .01) \). Across the models, levels of support (i.e., positive quality of relationship) or levels of undermining (i.e., negative quality of relationship) had no significant main effect on depressive symptomatology, controlling for background variables and primary
stressors. Furthermore, no significant interaction effects were found between positive quality of relationship and any of the stressors on depressive symptomatology.

Quality of Relationship as a Moderator between Caregivers’ Well-Being and Involvement (Path 3, research model, Figure 1).

Hypothesis 2e: Quality of relationship will moderate the effect of caregivers’ well-being on caregivers’ involvement with the care-recipient. Higher level of positive quality of relationship (i.e., higher levels of supportive interactions) will buffer the negative effect of low levels of caregivers’ well-being on low levels of caregivers’ involvement with the care-recipient. Higher level of negative quality of relationship (i.e., higher levels of undermining) will exacerbate the negative effect of low levels of caregivers’ well-being on lower caregivers’ involvement with the care-recipient.

Results:

Two hierarchical OLS regressions with an interaction term between quality of relationship indicators (positive or negative, one at a time) and well-being indicators (subjective burden or depressive symptomatology, one at a time) were conducted to assess the interaction effect on each of the caregivers’ involvement indicators (supervision and frequency of contact). In the first step the background variables were entered. Step 2 introduced the primary stressors into the model. In step 3 the examined well-being indicator was entered (either subjective burden or depressive symptomatology). In step 4 both quality of relationship indicators were entered, and in step 5 the relevant interaction term was entered. Four interactions were examined for
each of the involvement outcomes: undermining/support and subjective burden, and undermining/support and depressive symptomatology.

The moderation hypothesis was not supported for the amount of contact outcome, and no moderation effect was indicated between caregivers’ well-being and undermining on the supervision outcome. Furthermore, while a significant interaction effect was indicated between caregivers’ depressive symptomatology and support on supervision, the direction of the moderation effect was not in the hypothesized direction. Thus, hypothesis 2e was not supported.

The Moderation Effect of Positive Quality of Relationship (Supportive Interaction) and Caregivers’ Well Being on Caregivers Involvement

Frequency of Contact. As can be seen in Tables 21 and 22 (Model 1), the two regression models predicting frequency of contact were statistically significant, and explained 49% of the total variance in the outcome ($R^2 = .49$ to .52, $p \leq .001$). The background variables (step 1) explained 22% of the variance in frequency of contact ($R^2 = .22$, $p < .001$), primary stressors (step 2) contributed 11% to the explained variance ($\Delta R^2 = .11$, $p < .01$), and quality of relationship (step 4) added 15% to the explained variance ($\Delta R^2 = .15$, $p < .001$). The well-being indicators (either subjective burden or depressive symptomatology)(step 3) did not contribute significantly to the explained variance in the outcome. The interaction effects (support and subjective burden, support and depressive symptomatology) did not contribute significantly to the explained variance in frequency of contact ($\Delta R^2$ range = .01 to .02, $p > .05$).

Both background variables significantly predicted frequency of contact. Higher levels of objective burden predicted more frequent contact with the care recipient ($B = .20$,
whereas care-recipients’ participation in a residential treatment program predicted less frequent caregivers’ contact with the care recipient \((B \text{ range} = -2.09 \text{ to } -2.24, p < .001)\). In addition, higher levels of support (i.e., positive quality of relationship) had a main effect on frequency of contact \((B = .33, p < .001)\). Higher levels of support (positive quality of relationship) predicted higher frequency of contact, controlling for background variables, caregivers’ primary stressors, negative quality of relationship, and caregivers’ well-being (subjective burden or depressive symptomatology, one at each model). Both well-being indicators (subjective burden or depressive symptomatology) had no significant main effects on frequency of contact. Furthermore, there was no significant interaction effects between caregivers’ subjective burden or depressive symptomatology and positive quality of relationship, on frequency of contact \((B = .01, p > .05\), for both interactions).

**Supervision.** The two regression models predicting supervision were statistically significant, and explained between 65% and 66% of the total variance in supervision \((R^2 \text{ range} = .65 \text{ to } .66, p < .001)\)(see tables 23 & 24, model 1). The first block (background variables) explained 28% of the total variance \((R^2 = .28, p < .001)\), whereas the second block (primary stressors) contributed additional 34% \((\Delta R^2 = .34, p < .001)\) to the explained variance in supervision.

In both models, higher levels of care-recipient’s behavioral problems predicted higher levels of supervision \((B = .09, p < .001)\), whereas higher levels of care-recipient’s mental health/substance use problems predicted lower levels of supervision \((B \text{ range} = -.66 \text{ to } -.67, p < .05)\). In both models, no main effect of either of the quality of relationship indicators (support or undermining) was indicated.
Subjective burden (see Table 23, model 1) contributed significantly to the explained variance in supervision ($\Delta R^2 = .04, p < .01$) and had a significant main effect on supervision ($B = .12, p < .01$). However, no significant interaction effect between caregivers’ subjective burden and positive quality of relationship on supervision was indicated ($B = .00, p > .05$).

Depressive symptomatology (see Table 24, model 1) did not contribute significantly to the explained variance in supervision ($\Delta R^2 = .00, p > .05$) and had no significant main effect on supervision ($B = .04, p > .05$). However, a significant interaction effect between caregivers’ depressive symptomatology and positive quality of relationship, on supervision was indicated ($B = -.03, p = .03$), suggesting that the impact of caregivers’ level of depressive symptomatology on supervision depends on the level of the caregiver-care recipient supportive interaction (positive quality of relationship) (see Figure 6). The interaction suggests that when the relationships are characterized by high levels of positive quality of relationship (i.e., higher levels of supportive interactions), higher levels of depressive symptomatology lead to a reduction in supervision. However, when the relationships are characterized by low levels of positive quality of relationship, higher levels of depressive symptomatology predict increase in the level of supervision.

It is important to note that if Bonferroni adjustment would have been imposed (corrected observed $p \leq .025$), the interaction effect between care-recipients’ behavioral problems and positive quality of relationship on frequency of contact would not be significant at the $p = .05$ level.

The Moderation Effect of Negative Quality of Relationship (Undermining Interaction) and Caregivers’ Well Being on Caregivers’ Involvement
Frequency of Contact. The two regression models predicting frequency of contact were statistically significant, and explained between 48% and 49% of the total variance in frequency of contact ($R^2 = .48 - .49, p < .001$)(see Tables 21 & 22, Model 2). The background variables (step 1) explained 22% of the variance in frequency of contact ($R^2 = .22, p < .001$), primary stressors (step 2) contributed 11% to the explained variance ($\Delta R^2 = .11, p < .01$), and quality of relationship (step 4) added 15% to the explained variance ($\Delta R^2 = .15, p < .001$). The well-being indicators (either subjective burden or depressive symptomatology)(step 3) did not contribute significantly to the explained variance in frequency of contact. In addition, neither interaction effects (undermining and subjective burden, undermining and depressive symptomatology) contributed significantly to the explained variance in frequency of contact ($\Delta R^2 = -.01 p > .05$, for both interactions).

Both background variables significantly predicted frequency of contact. Higher levels of objective burden predicted more frequent contact with the care recipient ($B$ range $= .20$ to $.22, p < .01$), whereas care-recipients’ participation in a residential treatment program predicted less frequent caregivers’ contact with the care recipient ($B = -2.16, p < .001$). In addition, higher levels of support (i.e., positive quality of relationship) had a significant main effect on frequency of contact ($B = .32, p < .001$). Higher levels of support (positive quality of relationship) predicted higher frequency of contact, controlling for background variables, caregivers’ primary stressors, negative quality of relationship, and caregivers’ well-being (subjective burden or depressive symptomatology, one at each model). Both well-being indicators had no significant main effect on frequency of contact. Furthermore, there was no significant interaction effect between negative quality
of relationship and caregivers’ subjective burden or negative quality of relationship and depressive symptomatology, on frequency of contact ($B = -.01, p > .05$, for both interactions).

**Supervision.** The two regression models predicting supervision were statistically significant, and explained between 63% and 66% of the total variance in supervision ($R^2$ range = .63 to .66, $p < .001$)(see tables 23 & 24, model 2). The first block (background variables) explained 28% of the total variance ($R^2 = .28, p < .001$), whereas the second block (primary stressors) contributed an additional 34% ($\Delta R^2 = .34, p < .001$) to the explained variance in supervision. Subjective burden (see Table 23, model 2) contributed significantly to the explained variance in supervision ($\Delta R^2 = .04, p < .01$) and had a significant main effect on supervision ($B = .12, p < .01$). However, no significant interaction effects between caregivers’ subjective burden and negative quality of relationship, on supervision were found ($B = -.00, p > .05$).

Depressive symptomatology (see Table 24, model 2) did not contribute significantly to the explained variance in supervision ($\Delta R^2 = .00, p > .05$), had no significant main effect on supervision ($B = .04, p > .05$), and had no moderation effect with negative quality of relationship on supervision ($B = .00, p > .05$).

In both models, higher levels of care-recipient’s behavioral problems predicted higher levels of supervision ($B = .09, p < .001$), whereas higher levels of care-recipient’s mental health/substance use problems predicted lower levels of supervision ($B$ range = -.60 to -.60, $p < .05$). In both models, no main effects of either of the quality of relationship indicators (support or undermining) were found.

Table 25 summarizes the main findings for Research Question 2.
In summary, the following discussion presents the main research findings, following the study’s questions and the research model paths (see Figure 1):

Research Question 1

Path A (hypothesis 1a). Higher levels of care-recipients’ emotional and substance use problems (i.e., caregivers’ stressors) predicted, as hypothesized, lower levels of involvement (i.e., frequency of contact and supervision). However, contradictory to the hypothesis, higher levels of behavioral problems (i.e., caregivers’ stressor) predicted higher levels of supervision (i.e., involvement), whereas care-recipients’ diagnosis did not predict levels of caregivers’ involvement with the client. Thus, hypothesis 1a was partially supported.

Path B (hypothesis 1b). As hypothesized, Higher levels of care-recipients’ emotional and substance use problems (i.e., caregivers’ stressors) predicted higher levels of caregivers’ depressive symptomatology (i.e., lower well-being). However, no other stressors predicted caregivers’ depressive symptomatology. Furthermore, contradictory to the hypothesis, caregivers’ stressors did not predict caregivers’ subjective burden. Thus, hypothesis 1b was partially supported (for depressive symptomatology).

Path C and the Mediation Hypothesis (hypotheses 1c1 & 1c2). It was hypothesized that caregivers’ well-being (i.e., subjective burden and depressive symptomatology) will mediate the association between caregivers’ stressors and caregivers’ involvement with the care-recipient. While subjective burden (i.e., well-being) had a direct effect on supervision (i.e., involvement), well-being (either subjective burden or depressive symptomatology) did not mediate the relationship between caregivers’ primary stressors and caregivers’ involvement with the client. Thus, hypotheses 1c1 and 1c2 were not
supported. However, additional findings indicated that subjective burden (i.e., well-being) had a complete mediation effect on the relationship between caregivers’ objective burden and supervision.

Research Question 2

Association between Quality of Relationship and the Study’s Variables (hypotheses 2a & 2b). Both, positive quality of relationship (i.e., support) and negative quality of relationship (i.e., undermining) were associated with the majority of the research variables, as hypothesized. Higher levels of support was correlated with lower levels of care-recipient’s behavioral problems and with lower levels of care-recipient’s emotional and substance use problems (i.e., stressors), as well as with lower levels of subjective burden (i.e., well-being), and higher frequency of contact (i.e., involvement). However, contradictory to the expectation, positive quality of relationship was not correlated with care-recipient’s diagnosis (i.e., stressor), caregivers’ depressive symptomatology (i.e., well-being), or with supervision (i.e., involvement). Thus, hypothesis 2a for positive quality of relationship was partially supported.

Higher levels of undermining were correlated, as hypothesized, with higher levels of care-recipient’s behavioral problems and with lower levels of care-recipient’s emotional and substance use problems (i.e., stressors), as well as with higher levels of subjective burden (i.e., well-being), and higher levels of supervision (i.e., involvement). However, contradictory to the expectation, negative quality of relationship was not correlated with care-recipient’s diagnosis (i.e., stressor), caregivers’ depressive symptomatology (i.e., well-being), or with caregivers’ frequency of contact (i.e., involvement).
involvement). Thus, hypothesis 2b for negative quality of relationship was partially supported.

Paths 1, 2, & 3 (see Figure 1) – The Moderation Hypotheses (hypotheses 2c, 2d, & 2e). Overall, it was hypothesized that quality of relationship (i.e., positive and negative indicators) will moderate the associations between the three domains of the caregiving process: caregivers’ stressors, caregivers’ well being, and caregivers’ involvement with the client. Across the research paths (Paths 1, 2, & 3, see Figure 1), no moderation effects were found for negative quality of relationship. Thus, hypotheses 2c, 2d and 2e for negative quality of relationship were not supported.

Positive quality of relationship moderated the following relationships:

Path 1 (hypotheses 2c). As hypothesized, higher level of positive quality of relationship buffered the negative effect of care-recipients’ behavioral problems and care-recipients’ emotional and substance use problems (i.e., stressors) on frequency of contact. However, positive quality of relationship did not moderate the association between care-recipient’s diagnosis and frequency of contact, or the association between caregivers’ stressors and supervision. Thus, hypothesis 2c for positive quality of relationship was partially supported.

Additional analysis indicated that, positive quality of relationship moderated the effect (an enhancing effect) of caregivers’ objective burden on frequency of contact. Across the models, positive quality of relationship had a positive main effect on frequency of contact.
Path 2 (hypotheses 2d). Contradictory to the hypothesis, positive quality of relationship did not moderate the effect of caregivers’ stressors on caregivers’ well-being. Thus, hypothesis 2d for positive quality of relationship was not supported.

Path 3 (hypotheses 2e). It was hypothesized that higher level of positive quality of relationship will buffer the negative effect of low levels of caregivers’ well being (i.e., higher levels of depressive symptomatology and higher levels of burden) on caregivers’ involvement with the client.

Positive quality of relationship moderated the effect of caregivers’ depressive symptomatology (i.e., well-being) on caregivers’ supervision (i.e., involvement). However, the direction of the interaction was different the direction hypothesized. Caregivers, who reported high levels of supportive interactions, exercised lower levels of supervision, in face of high levels of depressive symptomatology. No other moderation effects were found. Thus, hypothesis 2e for positive quality of relationship was not supported.
CHAPTER 7: DISCUSSION

This chapter will present and discuss the study’s main findings. In addition, service delivery and practice implications as well as the study’s limitations and suggestions for future research will be discussed.

Main Findings

This study examined two central questions concerning the caregiving process of family caregivers for women with substance use or dual disorders. Based on the caregiving stress process model, the study explored the impact of having a women family member with substance use or dual disorders upon family caregivers’ involvement with the care-recipient and their well-being. Furthermore, this study examined the moderating role of the quality of caregiver-care recipient relationship in the caregiving stress process.

The first research question concerned the caregivers’ involvement with the care-recipients. Overall, caregivers in the study had high frequency of contact with the care-recipient. On the other hand, as a group, caregivers had low levels of supervision of their care-recipients. Thus, the findings indicate that the degree of caregivers’ involvement with the care-recipient may fluctuate by the specific type of involvement. Furthermore, the two types of involvement were not related to each other, implying their different nature. For example, high frequency of caregivers contact does not necessarily indicate higher (or lower) levels of supervision. Further support regarding the differences in these two involvement indicators can be found in their different antecedents.

Overall, caregivers reported a high frequency of contact with their care-recipients. This finding may be attributed to the fact that the caregivers in the study were those family members (or significant others) who were defined by the care-recipient as the one
family member who provide them with the most emotional support, instrumental support, and/or informational support.

Frequency of contact between the caregiver and the care-recipient was consistently predicted by the type of treatment program. Caregivers of women who participated in residential treatment programs had less frequent contact with their care-recipients. These findings may be explained by the fact that often in residential treatment programs clients have a structured daily routine. In addition, many of their everyday needs/tasks are often taken care of for them by others (e.g., groceries shopping, transportation arrangements). Thus, care-recipients have less free time which potentially could have been filled by contact with the caregiver; and more of their needs are taken care of by others, which otherwise may have required the caregivers’ help.

Positive quality of relationship predicted higher frequency of caregivers contact with their care-recipients. It may be that caregivers who experience their relationships with the care-recipient as providing them with more support, emotional availability and reciprocity, perceive the relationships with the care-recipient as being overall more equal and more gratifying. As a result caregivers are encouraged to maintain closer contact with the care-recipient. These results are consistent with previous caregiving research suggesting that more supportive interactions between caregivers and care-recipients result in higher levels of instrumental and emotional involvement of the caregiver with the care-recipient (e.g., Horwitz, et al., 1992; Oyebode, 2003; Spruytte et al., 2001).

Higher level of everyday disruptions in caregivers’ routine (i.e., objective burden) was associated with higher frequency of contact. This association makes intuitive sense, as it is expected that when care-recipient’s needs interrupt caregiver’s routine (school,
work, leisure, or other routine) this interruption will result in some kind of communication (i.e. contact). However, it is important to note that objective burden did not predict caregivers’ contact until positive quality of relationship was introduced to the model. This pattern calls attention to the relationship between supportive quality of relationship and objective burden. A possible explanation is that a more equal/reciprocal nature of relationship, as indicated by higher level of supportive relationship, requires overall, less frequent disruptions in the caregivers’ lives (i.e., objective burden). This explanation is supported by the relative high and negative correlation indicated between caregivers’ objective burden and support ($r=-.43$, $p<.01$).

Furthermore, an enhancing interaction effect was indicated between objective burden and positive quality of relationship, on caregivers’ frequency of contact. That is, while overall higher objective burden as well as higher levels of supportive interactions predict more frequent contact, caregivers who experience higher levels of both, objective burden and support, have even more frequent contact with their care-recipients as compared with caregivers with lower levels of support. A potential explanation may be that caregivers who perceive their relationship with the care-recipient to be more supportive overall and reciprocal (compared to those who experience less supportive interactions), will be more responsive to the care-recipient’s disturbances and expressed needs, when those do occur.

Overall, higher levels of caregivers’ supervision were predicted by higher levels of care-recipients’ behavioral problems, as well as by higher levels of caregivers’ experienced subjective and objective burden. These results may indicate that caregivers’ supervision is associated with the actual severity of the care-recipient’s disorder, as it
manifests in her behavior, or with the actual level of need presented by the woman with
substance or dual disorders. For example, caregivers exercise more supervising behaviors
as the care-recipient presents more difficulties in managing money, behaves in a
dependent and irritable way (behavioral problems), requires caregivers to disrupt their
own work, social or household routine in order to take care of their needs (objective
burden), or provokes worry about their (i.e., the care-recipient’s) safety, future prospect,
or physical health (subjective burden). Nevertheless, caregivers’ perception of care-
recipients’ higher levels of overall emotional and substance use problems predicted lower
levels of supervision. While this result may seem at first to be contradictory to the
severity of problematic behaviors explanation, it may be that unlike other indicators of
care-recipient’s severity of disorder/behavior, the caregivers’ overall perception of the
care-recipients’ problems encompasses a broader perspective of the care-recipient, one
that includes a more subjective perspective, beyond the scope of the behavioral
components. While the emotional/substance use problems may reflect, overall, care-
recipients’ more severe emotional and substance use problems, this condition may be of a
nature that does not call for supervision (but may reflect different needs of the care-
recipient, such as more emotional involvement). Support for this explanation can be
found in the fact that the only predictor of caregivers’ depressive symptomatology was
their perception of the care-recipient’s substance use and emotional problems.
Furthermore, the finding that quality of relationship (either support or undermining) had
no main effect on caregivers’ supervision provides additional support to the hypothesis /
explanation that caregivers’ level of supervision is based on the levels of care-recipients’
behaviorally manifested problems and needs.
Different explanation to the association between caregivers’ level of involvement and care-recipients’ behavioral problems may lay in the way those aspects were measured. While the behavioral problems scale asked caregivers to assess the frequency in which care-recipients present an array of problematic behaviors, the supervision scale assessed the frequency in which caregivers tried to control care-recipients’ problematic behaviors. It may be that some conceptual overlap in the measures responsible for the association between the two. Triangulation of measurements in future studies is needed to assess this aspect.

Objective burden impacts caregivers’ supervision through increased caregivers’ subjective burden (as indicated by the mediation effect). The impact of primary stressors (i.e., disorder related stressors) on caregivers’ well-being is consistent with the theoretical caregiving stress process (Pearlin et al., 1990), as well as with numerous studies in the mental illness, gerontology and dual disorders (e.g., Biegel et al., 1994; Biegel, et al., in press; Oheari, 2003; Webb et al., 1998). Furthermore, the current study offers an extension of the caregiving stress process, by demonstrating the importance of caregivers’ primary stressors and well-being to caregiving involvement with the client (i.e., supervision).

The finding that care-recipient’s level of behavioral problems was not a significant predictor of caregiver’s well-being or frequency of contact (i.e., involvement) is contradictory to studies in the fields of mental illness, gerontology and dual disorders (e.g., Biegel et al., 1994; Biegel, Ishler et al., in press; Oheari, 2003; Webb et al., 1998). These findings may be attributed to the fact that on average caregivers in the current study did not perceive the care-recipients as having high levels of behavioral problems. A
different explanation may be attributed to the way subjective burden was measured in the study. The measure combined aspects of caregivers’ experienced worry and stigma. The impact of caregiving stressors may vary by different type of caregiving (objective and subjective) burdens (Biegel, et al., 2006). It is possible that care-recipient’s behavioral problems would have been shown to be a significant predictor of one type of subjective burden but not of the other (i.e., either stigma or worry); in addition, other types of subjective burden (e.g., displeasure) might have been predicted by care-recipient’s behavioral problems. Future research should utilize multiple measures of specific types of subjective burden.

Furthermore, across models, caregivers’ general perception of the care-recipient’s emotional and substances use problems predicted caregivers’ levels of depressive symptomatology (i.e., well-being), as well as caregivers’ involvement with the care-recipient (i.e., frequency of contact and supervision). These findings point out the importance of assessing the overall, more subjective perspective that caregivers hold with regards to their care-recipients.

Care-recipient’s diagnosis, as having substance use disorder only or current dual disorder was not associated with caregivers’ involvement with the care-recipient. Two different explanations may be offered to this finding. The first explanation may be related to the types of care-recipients’ diagnoses in the current study. Previous caregiving studies in the mental health and dual disorders fields have assessed the impact of co-occurring substance use disorder among clients with severe mental disorders (e.g., Clark & Drake, 1994; Kashner et al., 1991). The results from these previous studies indicated the deteriorating effect of comorbid substance use problems among patients with severe
mental disorders on caregivers’ involvement. Similarly, the current study assessed the impact of one diagnosis only (i.e., substance use disorder) as compared to dual disorders, on caregivers’ involvement with the care-recipient. However, the nature of the mental disorder as well as the type of the single diagnosis (i.e., substance use disorder) were different in the current study as compared with previous studies. Thus, it is possible that different types of substance use problems and specific psychiatric diagnoses (as well as different combinations of these diagnoses) have a differential impact on caregivers’ involvement.

The second explanation to the lack of association between caregivers’ involvement with the care-recipient and care-recipients’ diagnosis may be related to the type of familial involvement examined in the current study. Some support to this explanation is found in the literature. For example, substance abuse problems, in addition to mental disorders had a negative impact on families’ financial involvement with the client, but not on families’ provision of direct care (Clark & Drake, 1994). Similarly to the current research findings, Dixon et al. (1995) did not find type of diagnosis to impact the frequency of family contact with the client; however patients with dual disorders were significantly less satisfied with their familial relationships as compare to clients with mental disorder only. Thus, it is possible that dual disorder as compare to only substance use disorders have a different impact on different types of caregivers’ involvement.

The second research question examined the moderating role of the quality of caregiver-care recipient relationship in the caregiving stress process. Overall, caregivers experience higher levels of positive interpersonal interactions received from the care-recipient compared to the levels of negative interactions. Nonetheless, on average, family
members reported a moderate occurrence of undermining interactions, thus
demonstrating the co-existence of supportive and undermining interactions in family
caregiving relationships. These results are consistent with other studies of close
relationships, indicating the co-existence of supportive and undermining interactions, as
well as the more often occurrence of positive interactions in caregiving families as
compared to negative interactions (e.g., Rook, 1998, 2003; Kiecolt-Glaser et al., 1998;
Townsend & Franks, 1995; Vinokur & van Ryn, 1993)

Findings from the bivariate correlation analyses indicate that caregiver - care
recipient relationship quality does impact caregivers’ subjective burden as well as levels
of involvement. Higher levels of emotional support were associated with lower levels of
caregivers’ primary stressors, subjective burden and frequency of contact; whereas higher
levels of undermining of the caregiver by the care-recipient were associated with higher
levels of caregivers’ primary stressors, subjective burden and supervision. Moreover,
across the models predicting involvement, whereas support had main effect on frequency
of contact, undermining had no main (or moderating) effect on neither frequency of
contact or on supervision. The differences in the roles that support and undermining play
in the caregiving process support previous research on close relationships, suggesting that
support and undermining represent two different concepts, and are not merely mirror
images of each other (Rook, 1984; Vinokur & van Ryn, 1993). Furthermore, the results
support the notion that supportive interpersonal relationships are associated with better
well-being, whereas negative interpersonal exchanges are associated with deteriorating
well-being (i.e., subjective burden) (Rook, 1984; Shin, Lehmann & Wong, 1984).
Positive quality of relationship moderated the association between two of the caregivers’ stressors: behavioral problems and emotional/substance use problems, and caregivers’ frequency of contact. In both cases higher levels of emotional support given to the caregiver by the care-recipient had a buffering/protective effect against the negative effect of care-recipient’s problems (i.e., behavioral or emotional/substance use problems) on caregiver’s frequency of contact. These results support the buffering model of social support in close relationships and in caregiving situations (Cohen & Wills, 1985).

In addition, positive quality of relationship moderated the association between caregivers’ depressive symptomatology and caregivers’ supervision. Thus, the effect of depressive symptomatology on caregivers’ supervision was depending on the level of support received by the caregiver from the care-recipient. The interaction has suggested that when caregivers experience higher depressive symptomatology, higher levels of received support from the care-recipient lead to a reduction in supervision. However, when caregivers experience higher levels of depressive symptomatology, lower levels of received support (from the care-recipient) predict an increase in caregivers’ supervision.

Caregivers who characterized their relationships with the care-recipient as encompassing higher levels of supportive interactions, presented a pattern consistent with previous caregiving research (Gaugler et al., 2000; Pruchno et al., 1990); That is, higher levels of family members’ depression have been shown to be associated with less involvement with the client. This pattern can be explained as follows: as caregivers experience more depressive symptoms (e.g., depressed mood, interpersonal difficulties, feelings of guilt and worthlessness, somatic and psychomotor retardation)(Ensel, 1986),
their levels of expressed interest, energy, or emotional availability to take care of others decreases; as a result their level of supervision decreases. However, this pattern was found to be valid only for those who perceive their relationships with the care-recipient to be highly supportive. It may be that caregivers who experience receiving support from the care-recipient, overall perceive the care-recipient as a more capable and equal partner in the relationships, and thus can allow themselves to be “taken care of” (or be supported) instead of “taking care of” another.

On the other hand, caregivers who report receiving low levels of support from the care-recipient presented a pattern in which higher levels of caregivers’ depression was associated with higher levels of supervision. Similarly to the explanation of the highly supported caregivers group, the pattern for the less supported group can be attributed to the efforts of the caregivers to fulfill some of their emotional needs. One possible need that may be fulfilled by this behavioral pattern is the need to maintain the relationship with the care-recipient. While the caregiver care-recipient relationships may be beneficial to the care-recipient (e.g., Clark, 2001; Mueser et al., 2003; Odell & Commander, 2000), they may also be central in the lives of family caregivers (Kiecolt-Glaser et al., 1988). Often, due to their caregiving responsibilities, caregivers are more likely to become constrained in their social and leisure activities, and consequently are at higher risk of becoming isolated from their usual companions (Johnson & Catalano, 1983; Mueser, et al, 2003). Higher depressive symptoms may indicate increased sense of isolation, loss of control, and worthlessness (Ensel, 1986; Radloff, 1977). Thus, it may be that in times of higher distress, while the caregiver can not rely on the care-recipient for support, he/she will exercise higher level of supervision. This supervision will enable the maintenance of
some kind of relationship with the care-recipient; as well as may fulfill other needs associated with depressive symptomatology, such as the need to experience control or the need to gain a sense of worthiness. Thus, in cases in which caregivers can not receive the support they need from the care-recipients, supervision may be seen as a compensation mechanism. Another explanation to this interaction effect may be related to the direction of association. Since the current study has utilized a cross-sectional design, it is impossible to estimate the direction of impact. It is possible that levels of supervision exercised over time by the caregiver will impact caregivers’ depressive symptomatology and/or their relationship quality with the care-recipient.

Undermining of the caregiver by the care-recipient was not a significant predictor of caregivers’ involvement or well-being in the multivariate level of analysis. One explanation may simply be that undermining of the caregiver by the care-recipient does not predict caregivers’ involvement with the care-recipient, nor does it impact caregivers’ well-being. However, the fact that in the bi-variate level of analysis, undermining quality of relationship was significantly associated with the majority of the study’s variables suggests that undermining is likely to play a role in the caregiving stress process. Possible explanation to this finding may be that due to the relatively low levels of variability in the undermining indicator (on average caregivers report low-moderate levels of negative quality of relationship) as well as due to the relatively small sample size, there was not enough statistical power to detect the impact of the undermining quality of relationship in the caregiving process.
Practice and Service Delivery Implications

The research findings suggest several practice implications pertaining to women with substance use or co-occurring substance use and mental disorders and their family members.

Consistent with other studies in the fields of mental illness, substance use, and dual disorders, care-recipients’ disorder related stressors, were associated with caregivers’ involvement with their care-recipient. However, while other studies in the caregiving field indicated the central role of client’s behavioral problems (i.e., caregivers’ primary stressor) as an obstacle for caregivers’ involvement (e.g., Biegel et al., 1997; Fals-Stewart et al., 2005; Mueser & Fox, 2002), in the current study, caregivers’ overall perception of the care-recipient’s emotional and substance use problems was the most consistent predictor of (barrier for) caregivers’ involvement. These findings suggest the importance of assessing and addressing the caregivers’ overall (and perhaps more subjective) perception of the extent of the care-recipients’ overall emotional and substance use problems. Interventions that can help family members to better understand the care-recipient’s diagnosis may contribute to the development of a more knowledgeable / balanced perspective of the care-recipient’s problems. Furthermore, interventions should help caregivers in the development of skills/behaviors to address care-recipients’ existing problems. Caregivers’ enhanced understanding of the care-recipient’s problems as well as the development of better skills to address these problems, may empower caregivers and promote their involvement with their care-recipients.

The current research findings, consistent with previous caregiving research (e.g., Biegel, et al., 1991; Clark, 1994; Cronkite, et al.,1990), indicate that, overall, caregivers
of women with substance use or dual disorders experience moderate levels of subjective burden. Furthermore, objective burden was shown to have an indirect effect, through subjective burden, on caregivers’ involvement with the care-recipient (i.e., supervision). Hence, these findings call for service providers’ attention to caregivers’ experienced burden. While the concept of caregiver burden has been widely studied in the mental health field, there has been little empirical investigation of family burden in the substance abuse field. Continued family caregivers stress and burden may harm their own physical and mental health and may compromise their ability to provide support to their ill relative (Mueser et al., 2003). Given the substance abuse field’s focus on family involvement and support of clients’ in treatment, it would be appropriate for substance abuse agencies to assess the presence of family member burden and to develop mechanisms, perhaps in conjunction with mental health agencies, to address families experienced burdens.

The finding that different aspects of the caregiver-care recipient relationship quality impact different types of caregivers’ involvement with the care-recipient; as well as the finding that supportive (i.e., positive) interpersonal relationships are associated with better well-being, whereas negative interpersonal exchanges (i.e., undermining) are associated with deteriorating well-being (i.e., subjective burden), suggests that interventions should address both emotional support and emotional undermining. For example, emotional support received by the caregiver from the care-recipient predicted higher frequency of caregivers’ contact with the care-recipient. In addition, higher levels of support had a buffering effect against the potential deteriorated frequency of contact, in face of higher care-recipient’s behavioral, emotional or substance use problems. These findings suggest the importance of interventions to enhance supportive communication
between the two partners of the dyad – caregivers and care-recipient. Differently, higher levels of undermining received by the caregiver from the care-recipient were associated with higher levels of objective and subjective burden. This suggests that interventions that aim to strengthen clients’ interpersonal communication skills are important. Those should include strengthening supportive communications skills and reducing undermining communication behaviors.

Group interventions for social skills development for clients have been developed and tested to help individuals with substance use or dual disorders. Those interventions include effective communication skills such as conversational (e.g., active listening, starting and maintaining conversations) and friendship skills (e.g., expressing positive feelings, finding common interests), assertiveness and conflict management skills (such as making or refusing requests, disagreeing without arguing or making apologies) and problem solving skills (e.g., defining the problem, brainstorming possible solutions, selecting the best solution, planning and implementing the solution) (Mueser et al., 2003). In addition, these results may suggest the need for interventions to assist caregivers in understanding and addressing care-recipient’s communication and social interactions problems that are beyond his/her control. Disorder related problems or medication side effects may inhibit care-recipient’s ability to effectively communicate with others. For example, women who experience depression or anxiety may feel too negatively about themselves to positively interact with others. Similarly, common medication side effect, like drowsiness, may interfere with social communication and functioning (Mueser et al., 2003).
Finally, the finding that caregivers’ of women with dual disorders, as compared to women with substance use disorders only, experience significantly higher levels of depressive symptomatology highlights the potential increased vulnerability of this caregiver population and calls for clinicians to pay special attention to their needs.

**Study Limitations**

Several limitations of the current study should be recognized. First, this study utilized a cross-sectional survey design. Therefore, temporal or causal relationships cannot be established. In addition, the small sample size restricted the ability to fully utilize the caregiving stress-process model. The simplified conceptual model utilized did not allow the examination of additional potential control variables and their potential influence on the study outcomes. In the current study, background variables which were not statistically significantly correlated with the dependent variables (i.e., amount of contact and supervision) were omitted from the final analyses. In taking this approach the model may have omitted significant predictors of the well-being indicators (subjective burden and depressive symptomatology) or covariates associated with the quality of relationship indicators. For example, research findings generally indicate that female caregivers experience higher levels of burden (e.g., Grenberg, Kim, & Greenley, 1997) and higher levels of depressive symptoms (e.g., Prunch & Resch, 1989) as compared to males. Type of kin relationships is another example of a variable that may play a role in the caregiving stress process, and thus should be further studied in future research. Based on the idea of hierarchy of obligations among kin, several studies in the caregiving literature have demonstrated differences in levels of experienced caregiving burden and involvement with the client, across different familial relationship (e.g., Clark & Drake,
Furthermore, by utilizing secondary data analysis, some potentially relevant information was not available for analysis. For example, hospitalization and treatment history has been shown to be associated with the amount of familial involvement with individuals with dual disorders (Clark & Drake, 1994); however, this data was not available for examination. Furthermore, the study did not include the length of time in which the women were in treatment, nor did it evaluate the stage of treatment in which the women were at, at the time of the interview. While one of the criteria for women to be included in the study was to be engaged in treatment for at least three weeks, it is assumed that women who spent a shorter time in treatment will present higher levels of problems and need, as compared to women who were more advanced in the treatment process. However, this data was not available, and thus could not be assessed in the current study.

In addition, although almost one-third of the caregivers were the significant other of the care recipients, only 5% were actually married to the care-recipients. Therefore, this sub-group of caregivers may be seen as a more voluntary caregivers’ group that are not (or not yet) bound by blood or legal relationships to the care-recipient. However, little information is available on the stability of those caregiving relationships over time.

Additionally, due to the small sample size and to the exploratory nature of the study a significance level of .05 was utilized to assess the study’s results. However, it should be recognized that this study utilized a large number of analyses; thus presents an increased risk for Type I error. The Bonferroni procedure was employed in an attempt to highlight what findings might have been appeared due to chance. Hence, this aspect calls for caution in the interpretation and generalization of the study’s findings.
The current study has focused on family members to women participating in substance use treatment programs. This aspect constrains the study’s external validity, and limits the generalization of the study’s findings regarding family caregivers’ of men with substance use or dual disorders, as well as for family caregivers to adults (men and women) who either participate in treatment programs different from substance use programs, or for those who do not participate in treatment programs at all. Furthermore, study’s sample included only women who had a family caregiver who agreed to participate in the study. This aspect presents additional restriction on the study’s external validity, as the sample is not necessarily representative of all women in substance use treatment (i.e., data is available as for the women who refused to participate in the study).

In addition, the relatively small sample size has hindered the possibility of investigating the caregiving stress process among sub-samples of caregivers and across different sub-groups of care-recipients (e.g., women with specific types of diagnoses). Furthermore, the racial composition of the study’s sample was relatively homogeneous, including 84% African American. This aspect hindered the possibility of investigating the caregiving stress process among sub-ethnic groups. Furthermore, the racial composition restricts the study’s external validity, as it does not allow the generalization of the study’s findings to diverse racial groups. Nonetheless, the high representation of African American in the study can be seen as a strength, as it is representing an understudied minority population.

**Future Research**

The research findings as well as the study’s limitations suggest several directions for future research. Future research studies are needed that utilize longitudinal designs
and larger samples sizes. Longitudinal studies are needed to gain a better understanding of the mechanisms and relationships associating caregivers’ well being, the quality of their relationship with the care-recipient and their levels of involvement. Due to the cross-sectional design, the current study assessed the caregiving situation among families of women with substance or dual disorders. Nonetheless, the study recognizes that caregiving is a process, including inter-relationship, which may develop and change over time, between the various conditions in which the caregiving takes place (Pearlin et al., 1990). For example, while care-recipient’s emotional and substance use problems may decrease caregiver’s frequency of contact, reduced frequency of contact may exacerbate the degree of care-recipient’s problems; or, while higher levels of subjective burden calls for more supervision, it is possible that over long period of time, higher levels of supervision may negatively impact caregiver’s well-being. Thus, longitudinal designs are needed in order to study the process in which the caregiving stress takes place and evolve.

Furthermore, larger samples sizes, will allow further examination of the caregiving stress process, across various caregivers’ and care-recipients’ sub-groups (e.g., different ethnicities, genders, or treatment stages). In addition, larger sample sizes will allow incorporating and assessing the role of additional covariates in the caregiving process.

Giving the finding that care-recipients’ diagnosis, as having substance use disorder only or current dual disorders was not associated with caregivers’ involvement with the care-recipient suggests the need for future research that will compare the impact of different types of substance use and specific psychiatric diagnoses and the impact of various combinations of these diagnoses on caregiver’s involvement. Furthermore, future
research that will distinguish the impact of care-recipients’ different types of diagnoses on various types of family members involvement with the care-recipient can enhance understanding regarding the impact of care-recipient’s diagnoses on caregivers’ involvement with the care-recipient.

The current study has focused on only two types of family involvement with the client: frequency of contact and supervision. While both of these involvement types may be beneficial to care-recipient with substance use disorder or dual disorders, other types of family involvement should be explored in future studies. This will allow a more comprehensive description and understanding of the family involvement processes.

The conceptual model of family involvement with individuals with dual disorders (Townsend et al., 2006) offers a helpful typology of family involvement, and distinguishes between two types of family involvement: family involvement with the client and family involvement in the client’s treatment. The model further suggests that each type of involvement should be assessed for its nature, quantity and perceived quality. Hence, future research may benefit from a systematic examination of the different types of family involvement with the client and in treatment, and the implementation of the various operationalization aspects associated with each involvement type. For example, family financial involvement and involvement with everyday tasks (i.e., types of family involvement with the client) have been shown to be important for client outcomes associated with reduction in substance use and risk of relapse (Clark, 2001; Ellis et al., 2004). Alternatively, family involvement in everyday tasks as well as informational involvement has been shown to be associated with decreased likelihood for substance use relapse (Bernichon et al., 2004; Flynn, et al.,...
2003). Thus, future research that explores the predictors of the quantity as well as the perceived quality of these types of involvement may contribute to the understanding of the mechanisms which may support (or hinder) these types of family involvement.

Similarly, family involvement in client’s treatment is strongly encouraged in the substance abuse as well as in the dual-disorders literature. Family involvement in client’s treatment has been shown to have positive impact on client’s engagement and retention in treatment, as well as on treatment outcomes (e.g., abstinence, reduced relapse, and psychiatric symptoms) (e.g., Fals-Stewart et al., 2003; Mercer et al., 1998; Mueser et al., 2003).

Family involvement with clients with comorbid substance and mental disorders has been shown to be associated with various positive outcomes for the client. However, it is important to note that families’ involvement with the client might have negative impact on the client as well. For example, family members often reacting to the client with substance abuse disorder in behavioral patterns, such as enabling the addiction, by protecting the client from the negative consequences of the substance use (i.e., co-dependence) (O’Farrell & Fals-Stewart, 2006). At other times, family members are themselves substance-abusing individuals. As such, they make it very difficult for clients who have reached treatment to avoid relapse (Mueser, et al., 2003). Furthermore, it has been shown that often injectors had been given their first injection by a male sexual partner (Powis, et al., 1996). Thus, family members may contribute (unintentionally or intentionally) to or may maintain the client’s ongoing substance abuse. In the current study only a few caregivers met criteria for substance use disorder. Nonetheless, the study has no information about the extent of the caregivers’ drinking or drug using, that
do not rise to the severity of a DSM-IV disorder. This aspect of involvement is of crucial importance as it may help clarify whether the caregivers assist care recipients in avoiding drug use, or whether they facilitate it. Future research should assess family caregivers’ *enabling behaviors* (e.g., continue to buy client’s groceries, while he/she spend their money on substances; making alcohol/drug available, such as in familial gatherings) and *family caregivers’ substance use behaviors* as potential additional types of involvement.

Despite evidence demonstrating the importance of family involvement to the care-recipient, little attention has been paid in the caregiving literature to facilitators and barriers to caregiver’s involvement (Townsend et al., 2006).

Exploration of different types of involvement will allow better understanding of the relationships between involvement types, as well as better understanding of differences and similarities in their antecedents. These, in turn, may help design a more comprehensive intervention for the promotion of family caregivers’ involvement with their relatives with substance use or dual disorder.

Finally, quality of caregiver – care recipient relationship plays an important role in the caregiving process. The current analysis has been based only on the caregivers’ perception of their received support and undermining from care-recipient. As relationships are a dynamic process, comprising emotional exchange between the two participants of the dyad (caregiver and care-recipient), examination of caregivers’ perception of the support they give to and their undermining of the care-recipient is important. For example, a situation in which caregivers perceive the amount of support they are receiving from their care-recipient to be similar to the amount of support that they are giving may have a differential impact on their well-being and level of
involvement with their care-recipient, as compared to a situation in which they perceive themselves as giving more (or less) support than the one they receive. Better understanding of the caregivers’ perspective as to the reciprocity of exchanged emotional support and undermining with their care-recipient (i.e., given and received) may enhance our understanding of the role of quality of relationships in the caregiving stress process.

Furthermore, examination of the care-recipient’s perspective of the quality of her relationship with the caregiver in future studies, as well as examination of areas of agreement and discrepancies, similarities and differences, between the dyad members regarding their relationship quality, may highlight potential areas of intervention for the promotion of better communications, and perhaps better well-being, of the two.
Table 1:

*Descriptive Statistics of the Study’s Measures (N=82)*

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Actual Range</th>
<th>Potential Range</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Caregiver Involvement with the Care-recipient</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of Contact</td>
<td>9.46</td>
<td>2.97</td>
<td>1 to 12</td>
<td>0 to 12 (low to high)</td>
<td>---</td>
</tr>
<tr>
<td>Supervision</td>
<td>9.05</td>
<td>6.13</td>
<td>0 to 24</td>
<td>0 to 28 (low to high)</td>
<td>---</td>
</tr>
<tr>
<td><strong>Caregivers’ Primary Stressors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care-recipient Dual diagnosis</td>
<td>.56</td>
<td>.50</td>
<td>---</td>
<td>(1 = Dual Disorders)</td>
<td>---</td>
</tr>
<tr>
<td>Care-recipient behavioral problems</td>
<td>89.76</td>
<td>47.09</td>
<td>2 to 194</td>
<td>0 to 232 (low to high)</td>
<td>.97</td>
</tr>
<tr>
<td>Extent of Care-recipient’s substance use and emotional problems</td>
<td>3.11</td>
<td>2.00</td>
<td>0 to 6</td>
<td>0 to 6 (not at all to severe)</td>
<td>---</td>
</tr>
<tr>
<td><strong>Caregivers’ Well-Being</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Burden</td>
<td>27.27</td>
<td>12.44</td>
<td>3 to 54</td>
<td>0 to 64 (low to high)</td>
<td>.87</td>
</tr>
<tr>
<td>Depressive Symptomatology</td>
<td>13.51</td>
<td>9.38</td>
<td>0 to 41</td>
<td>0 to 60 (low to high)</td>
<td>.85</td>
</tr>
<tr>
<td><strong>Quality of Relationship</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support (Positive Quality of Relationship)</td>
<td>16.74</td>
<td>4.42</td>
<td>6 to 24</td>
<td>6-24 (low to high)</td>
<td>.81</td>
</tr>
<tr>
<td>Undermining (Negative Quality of Relationship)</td>
<td>12.15</td>
<td>4.32</td>
<td>6 to 24</td>
<td>6-24 (low to high)</td>
<td>.80</td>
</tr>
<tr>
<td><strong>Background Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care-recipient Inpatient / Outpatient Treatment Program</td>
<td>.48</td>
<td>.50</td>
<td>---</td>
<td>(1=Inpatient Program)</td>
<td>---</td>
</tr>
<tr>
<td>Frequency of Care-recipient Disruptions</td>
<td>4.90</td>
<td>3.90</td>
<td>0 to 15</td>
<td>0 to 16 (low to high)</td>
<td>---</td>
</tr>
</tbody>
</table>
Table 2: *Bivariate Correlations of the Final Model Variables (N=82)*

<table>
<thead>
<tr>
<th></th>
<th>Primary Stressors</th>
<th>CG Well Being</th>
<th>Involvement</th>
<th>Quality of Relationship</th>
<th>Background</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1. CR's Current Diagnosis (1=DD)</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CR Behavioral Problems</td>
<td>.10</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. CR Substance Use or Mental Health problems</td>
<td>.27*</td>
<td>.43**</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CG subjective burden</td>
<td>.05</td>
<td>.46**</td>
<td>.37**</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>5. CG Depressive Symptomatology</td>
<td>.24*</td>
<td>.22*</td>
<td>.36**</td>
<td>.22*</td>
<td>---</td>
</tr>
<tr>
<td>6. Supervision</td>
<td>.08</td>
<td>.75**</td>
<td>.22</td>
<td>.54**</td>
<td>.16</td>
</tr>
<tr>
<td>7. Frequency of contact</td>
<td>-.04</td>
<td>-.32**</td>
<td>-.38**</td>
<td>-.14</td>
<td>-.09</td>
</tr>
<tr>
<td>8. Positive QoR (Support)</td>
<td>.00</td>
<td>-.31**</td>
<td>-.38**</td>
<td>-.26*</td>
<td>-.04</td>
</tr>
<tr>
<td>9. Negative QoR (undermining)</td>
<td>.01</td>
<td>.34**</td>
<td>.32**</td>
<td>.22*</td>
<td>.10</td>
</tr>
<tr>
<td>10. Frequency of impacts (objective burden)</td>
<td>.04</td>
<td>.43**</td>
<td>.33**</td>
<td>.52**</td>
<td>.09</td>
</tr>
<tr>
<td>11. Treatment Program (1=Inpatient)</td>
<td>.06</td>
<td>.30**</td>
<td>.24*</td>
<td>.24*</td>
<td>.02</td>
</tr>
</tbody>
</table>

* p ≤ 0.05 ; ** p ≤ 0.01; CR=Care Recipient; CG = Caregiver; DD= Dual disorders; QoR=Quality of Relationships
Table 3:
Positive Quality of Relationship Scale (Support) – Item Mean, SD, and Item Loadings
(Principle Components Analysis (PCA) with VARIMAX Rotation) (N=82)

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Component Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listen carefully to you</td>
<td>2.59</td>
<td>1.05</td>
<td>.67</td>
</tr>
<tr>
<td>Show respect for you</td>
<td>3.06</td>
<td>1.01</td>
<td>.68</td>
</tr>
<tr>
<td>Express appreciation for you</td>
<td>2.90</td>
<td>1.04</td>
<td>.76</td>
</tr>
<tr>
<td>Do something thoughtful for you</td>
<td>2.50</td>
<td>1.02</td>
<td>.70</td>
</tr>
<tr>
<td>Show consideration for you</td>
<td>2.68</td>
<td>1.02</td>
<td>.82</td>
</tr>
<tr>
<td>Show you physical affection</td>
<td>3.01</td>
<td>1.00</td>
<td>.58</td>
</tr>
</tbody>
</table>
Table 4:  
*Negative Quality of Relationship Scale (Undermining) – Item Mean, SD, and Item Loadings (Principle Components Analysis (PCA) with VARIMAX Rotation) (N=82)*

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>SD</th>
<th>Component Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criticize you</td>
<td>1.78</td>
<td>.93</td>
<td>.652</td>
</tr>
<tr>
<td>Get into arguments with you</td>
<td>1.88</td>
<td>1.02</td>
<td>.774</td>
</tr>
<tr>
<td>Take you for granted</td>
<td>2.07</td>
<td>1.11</td>
<td>.669</td>
</tr>
<tr>
<td>Show impatience to you</td>
<td>2.04</td>
<td>.99</td>
<td>.741</td>
</tr>
<tr>
<td>Ignore you</td>
<td>1.72</td>
<td>.85</td>
<td>.729</td>
</tr>
<tr>
<td>Expect more from you</td>
<td>2.68</td>
<td>1.78</td>
<td>.691</td>
</tr>
</tbody>
</table>
Table 5:  
Demographic and Background Characteristics of the Caregivers (N=82)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>40.04 (13.59)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>18-77</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>33</td>
<td>40.2</td>
</tr>
<tr>
<td>Female</td>
<td>49</td>
<td>59.8</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>69</td>
<td>84.1</td>
</tr>
<tr>
<td>Latino</td>
<td>10</td>
<td>12.2</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>17</td>
<td>20.7</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>22</td>
<td>26.8</td>
</tr>
<tr>
<td>Never Married</td>
<td>42</td>
<td>51.2</td>
</tr>
<tr>
<td><strong>Caregivers’ Relationship to Care-Recipient</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent (Mother)</td>
<td>16</td>
<td>19.5</td>
</tr>
<tr>
<td>Significant Other</td>
<td>26</td>
<td>31.7</td>
</tr>
<tr>
<td>Sibling</td>
<td>19</td>
<td>23.2</td>
</tr>
<tr>
<td>Child</td>
<td>9</td>
<td>11.0</td>
</tr>
<tr>
<td>Other Relative</td>
<td>12</td>
<td>14.6</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed (Full or part time)</td>
<td>49</td>
<td>59.8</td>
</tr>
<tr>
<td>Unemployed</td>
<td>32</td>
<td>29.0</td>
</tr>
<tr>
<td><strong>Annual family Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $5,000/yr</td>
<td>4</td>
<td>4.9</td>
</tr>
<tr>
<td>$ 5,000 - $ 14,999</td>
<td>22</td>
<td>26.8</td>
</tr>
<tr>
<td>$ 15,000 - $ 24,999</td>
<td>23</td>
<td>28.1</td>
</tr>
<tr>
<td>$ 25,000 - $ 34,999</td>
<td>11</td>
<td>13.4</td>
</tr>
<tr>
<td>$ 35,000 - $ 43,999</td>
<td>13</td>
<td>15.9</td>
</tr>
<tr>
<td>More than $44,000/yr</td>
<td>7</td>
<td>8.5</td>
</tr>
</tbody>
</table>
Table 6:  
*Demographic and Background Characteristics of the Care-Recipients (N=82)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M (SD)</td>
<td>34.12 (8.50)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>21-55</td>
<td></td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed (Full or part time)</td>
<td>32</td>
<td>39.0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>49</td>
<td>59.8</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>67</td>
<td>81.7</td>
</tr>
<tr>
<td>Latino</td>
<td>9</td>
<td>11.0</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>7.3</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>4</td>
<td>4.9</td>
</tr>
<tr>
<td>Widowed</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>19</td>
<td>23.2</td>
</tr>
<tr>
<td>Never Married</td>
<td>59</td>
<td>72.0</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Elementary / Junior high</td>
<td>40</td>
<td>48.8</td>
</tr>
<tr>
<td>High school / Technical school</td>
<td>40</td>
<td>48.8</td>
</tr>
<tr>
<td>Associate degree</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Living Arrangement</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver’s home/apartment</td>
<td>10</td>
<td>12.2</td>
</tr>
<tr>
<td>Her own home/apartment</td>
<td>27</td>
<td>32.9</td>
</tr>
<tr>
<td>Friend’s home/apartment</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Relative’s home/apartment</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Other</td>
<td>42</td>
<td>51.2</td>
</tr>
<tr>
<td><strong>Treatment Program</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Program (Inpatient)</td>
<td>39</td>
<td>47.6</td>
</tr>
<tr>
<td>Non-Residential Program (Outpatient)</td>
<td>43</td>
<td>52.4</td>
</tr>
</tbody>
</table>
Table 7:
Hierarchical Regression Analysis - The Impact of Primary Stressors on Caregivers’ Involvement with the Care-Recipient (N=82) (Hypothesis 1a)

<table>
<thead>
<tr>
<th></th>
<th>Supervision</th>
<th>Frequency of Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
</tbody>
</table>

**Step 1 (Background)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>p</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective Burden</td>
<td>.35**</td>
<td>.16</td>
<td>.22</td>
<td>.01</td>
<td>.12</td>
<td>.08</td>
<td>.16</td>
<td>.13</td>
</tr>
<tr>
<td>Treatment Program (1= residential)</td>
<td>1.17</td>
<td>.92</td>
<td>.10</td>
<td>.21</td>
<td>-2.11**</td>
<td>.59</td>
<td>-.36</td>
<td>.00</td>
</tr>
</tbody>
</table>

$R^2_{Step 1}= .28^{***}$

**Step 2 (Stressors)**

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>p</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.60</td>
<td>.90</td>
<td>.05</td>
<td>.51</td>
<td>.47</td>
<td>.58</td>
<td>.08</td>
<td>.47</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.09***</td>
<td>.01</td>
<td>.70</td>
<td>.00</td>
<td>-0.01</td>
<td>.01</td>
<td>-.16</td>
<td>.16</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.60*</td>
<td>.26</td>
<td>-.20</td>
<td>.02</td>
<td>-.45**</td>
<td>.16</td>
<td>-.30</td>
<td>.01</td>
</tr>
</tbody>
</table>

$\Delta R^2_{Step 2}= .34^{***}$

$R^2_{Total} = .62; \ F=22.54^{***}$

$\Delta R^2_{Step 2}= .11^{**}$

$R^2_{Total} = .33; \ F=7.35^{**}$

CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use.
*p< .05, **p< .01, ***p<.001
Table 8: Hierarchical Regression Analysis - The Impact of Primary Stressors on Caregivers’ Well-Being (N = 82) (Hypothesis 1b)

<table>
<thead>
<tr>
<th></th>
<th>Subjective Burden</th>
<th></th>
<th>Depressive Symptomatology</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$\beta$</td>
<td>$p$</td>
</tr>
<tr>
<td>Step 1 (Background)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective Burden</td>
<td>1.21***</td>
<td>.33</td>
<td>.38</td>
<td>.00</td>
</tr>
<tr>
<td>Treatment Program (1= residential)</td>
<td>3.07</td>
<td>2.40</td>
<td>.12</td>
<td>.21</td>
</tr>
<tr>
<td>$R^2$ Step 1</td>
<td>.31***</td>
<td></td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>Step 2 (Stressors)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>-.81</td>
<td>2.36</td>
<td>-.03</td>
<td>.73</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.05</td>
<td>.03</td>
<td>.20</td>
<td>.07</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>.85</td>
<td>.66</td>
<td>.14</td>
<td>.21</td>
</tr>
<tr>
<td>$\Delta R^2$ Step 2</td>
<td>.06</td>
<td></td>
<td></td>
<td>.16**</td>
</tr>
<tr>
<td>$R^2$ Total</td>
<td>.37</td>
<td></td>
<td></td>
<td>.17; F=3.03**</td>
</tr>
</tbody>
</table>

CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use.
*p< .05, **p< .01. ***p<.001
Table 9: Hierarchical Regression Analysis - The Impact of Caregiver’s Subjective Burden on Caregiver’s Involvement with the Care-Recipient, controlling for Caregiver’s Stressors (N =82) (Hypothesis 1c1)

<table>
<thead>
<tr>
<th></th>
<th>Frequency of Contact</th>
<th>Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Step 1 (Background)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-2.16***</td>
<td>.60</td>
</tr>
<tr>
<td>R² Step 1 = .22***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 (Stressors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.46</td>
<td>.59</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.46**</td>
<td>.17</td>
</tr>
<tr>
<td>∆R² Step 2 = .11**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3 (Well-Being)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Burden</td>
<td>.02</td>
<td>.03</td>
</tr>
<tr>
<td>∆R² Step 3 = .00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² Total = .33; F=6.11***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use.
*p< .05, **p< .01, ***p<.001
Table 10: Hierarchical Regression Analysis - The Impact of Caregiver’s Depressive Symptomatology on Caregiver’s Involvement with the Care-Recipient, controlling for Caregiver’s Stressors (N=82) (Hypothesis 1c2)

<table>
<thead>
<tr>
<th>Step 1 (Background)</th>
<th>Frequency of Contact</th>
<th>Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.13</td>
<td>.08</td>
</tr>
<tr>
<td>Treatment Program (1= residential)</td>
<td>-2.10***</td>
<td>.60</td>
</tr>
<tr>
<td>R² Step 1 = .22***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 (Stressors)</th>
<th>Frequency of Contact</th>
<th>Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.42</td>
<td>.59</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.46**</td>
<td>.17</td>
</tr>
<tr>
<td>ΔR² Step 2 = .11**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3 (Well-Being)</th>
<th>Frequency of Contact</th>
<th>Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Depressive Symptomatology</td>
<td>.01</td>
<td>.03</td>
</tr>
<tr>
<td>ΔR² Step 3 = .00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² Total = .33; F=6.07***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use.
*p<.05, **p<.01, ***p<.001
Table 11:

**Summary of Research Question 1 - Hypotheses, and Main Findings**

*What is the relationship between caregiver’s primary stressors, caregivers’ involvement with the care-recipient and caregiver’s well-being?*

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Hypotheses</th>
<th>Main Findings</th>
</tr>
</thead>
</table>
| RQ1a: Do higher levels of primary stressors (i.e., disorder related stressors) predict lower levels of CGs’ involvement with the CR? | H1a: Higher levels of CG’s primary stressors will predict lower levels of CG involvement with the CR. | **Supervision:** Hypothesis partially supported.  
Higher CR MH/SU problems → Lower Supervision  
Higher CR Behavioral Problems → Higher Supervision  

**Frequency of Contact:** Hypothesis partially supported.  
Higher CR MH/SU problems → Lower Frequency of Contact |
| RQ1b: Does higher levels of primary stressors predict lower levels of CGs’ well-being? | H1b: Higher levels of CGs’ primary stressors will predict lower levels of CGs’ well-being (higher subjective burden and higher depressive symptomatology). | **Subjective Burden:** Hypothesis not supported.  

**Depressive Symptomatology:** Hypothesis partially supported.  
Higher CR MH/SU problems → Higher Depressive Symptomatology. |
| RQ1c: Does caregiver well-being mediate the association between caregivers’ stressors and the level of caregivers’ involvement with the CR? | H1c1: Higher levels of CGs’ primary stressors will predict higher levels of CGs’ involvement with the CR directly, as well as indirectly, through increasing CGs’ subjective burden; higher levels of subjective burden will predict higher levels of CGs’ involvement with the CR. | **Subjective Burden:** Hypothesis not supported.  
Subjective burden does not mediate the relationship between CGs’ primary stressors and CGs’ involvement with the CR.  
- Subjective burden has a direct effect on supervision.  
- Subjective burden mediates the relationship between objective burden and supervision. |

CG=Caregiver, CR= Care-Recipient.
Table 11: Summary of Research Question 1 - Hypotheses, and Main Findings (Cont.)

<table>
<thead>
<tr>
<th>H1c2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher levels of CGs’ primary stressors will predict lower levels of CGs’ involvement with the CR directly, as well as indirectly, through increasing CGs’ depressive symptomatology; higher levels of depressive symptomatology will predict lower levels of CGs’ involvement with the CR.</td>
</tr>
</tbody>
</table>

| Depressive Symptomatology: Hypothesis not supported. Depressive Symptomatology does not mediate the relationship between CGs’ primary stressors and CGs’ involvement with the CR. |

CG=Caregiver, CR= Care-Recipient.
Table 12:
Hierarchical Regression Analysis - The Moderation Effect of Positive Quality of Relationship (i.e., support) in the Association Between Stressors and Frequency of Contact (N =82)(Hypothesis 2c)

<table>
<thead>
<tr>
<th>Step 1 (Background)</th>
<th>Support* Diagnosis (Model 1)</th>
<th>Support* Behavioral Problems (Model 2)</th>
<th>Support* MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.19*</td>
<td>.08</td>
<td>.25</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-2.23***</td>
<td>.56</td>
<td>-.38</td>
</tr>
<tr>
<td>R² Step 1= .22***</td>
<td>R² Step 1= .22***</td>
<td>R² Step 1= .22***</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 (Stressors)</th>
<th>CR Diagnosis (1=DD)</th>
<th>CR Behavioral Problems</th>
<th>CR MH/SU Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.23</td>
<td>.52</td>
<td>.04</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-.01</td>
<td>.01</td>
<td>-.14</td>
</tr>
<tr>
<td>R² Step 2 = .11**</td>
<td>∆R² Step 2 = .11**</td>
<td>∆R² Step 2 = .11**</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3 (QoR)</th>
<th>Undermining</th>
<th>Support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.08</td>
<td>.07</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>.22*</td>
<td>.10</td>
</tr>
<tr>
<td>R² Step 3 = .15***</td>
<td>∆R² Step 3 = .15***</td>
<td>∆R² Step 3 = .15***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 4 (Interaction)</th>
<th>Support* (Stressor)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.15</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>∆R² Step 4 = .01</td>
</tr>
<tr>
<td>R² Total = .49; F=8.63***</td>
<td>R² Total = .50; F=9.20***</td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship. *p< .05, **p< .01, ***p<.001
Table 13: Hierarchical Regression Analysis - The Moderation Effect of Positive Quality of Relationship (i.e., support) in the Association between Objective Burden and Frequency of Contact (N = 82)

<table>
<thead>
<tr>
<th>Step 1 (Background)</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective Burden</td>
<td>.20*</td>
<td>.08</td>
<td>.26</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-2.15***</td>
<td>.55</td>
<td>-.36</td>
</tr>
<tr>
<td>(1= residential)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² Step 1 = .22***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 (Stressors)</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.02</td>
<td>.52</td>
<td>.00</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>-.01</td>
<td>.01</td>
<td>-.18</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.28</td>
<td>.15</td>
<td>-.19</td>
</tr>
<tr>
<td>∆R² Step 2 = .11**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3 (QoR)</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undermining</td>
<td>.09</td>
<td>.07</td>
<td>.13</td>
</tr>
<tr>
<td>∆R² Step 3 = .00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 4 (QoR)</th>
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<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>.30***</td>
<td>.07</td>
<td>.44</td>
</tr>
<tr>
<td>∆R² Step 4 = .15***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 5 (Interaction)</th>
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<th>SE B</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support* Objective Burden</td>
<td>.03*</td>
<td>.02</td>
<td>.17</td>
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<tr>
<td>∆R² Step 5 = .03*</td>
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<td></td>
</tr>
<tr>
<td>R² Total = .50; F=9.17***</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health/Substance use, QoR=Quality of Relationship. *p< .05, **p< .01. ***p<.001
Table 14: *Hierarchical Regression Analysis - The Moderation Effect of Positive Quality of Relationship (i.e., support) in the Association Between Stressors and Supervision (N = 82)(Hypothesis 2c)*

<table>
<thead>
<tr>
<th></th>
<th>Support* Diagnosis (Model 1)</th>
<th>Support* Behavioral Problems (Model 2)</th>
<th>Support* MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>β</td>
</tr>
<tr>
<td>Step 1 (Background)</td>
<td></td>
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</tr>
<tr>
<td>Treatment Program</td>
<td>1.18</td>
<td>.99</td>
<td>.10</td>
</tr>
<tr>
<td>R² Step 1</td>
<td>.28***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 (Stressors)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.53</td>
<td>.92</td>
<td>.04</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.09***</td>
<td>.01</td>
<td>.70</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.56*</td>
<td>.27</td>
<td>-.18</td>
</tr>
<tr>
<td>∆R² Step 2</td>
<td>.34***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3 (QoR)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undermining</td>
<td>.02</td>
<td>.13</td>
<td>.01</td>
</tr>
<tr>
<td>Support</td>
<td>.13</td>
<td>.18</td>
<td>.10</td>
</tr>
<tr>
<td>∆R² Step 3</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4 (Interaction)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support* (Stressor)</td>
<td>-.09</td>
<td>.21</td>
<td>-.05</td>
</tr>
<tr>
<td>∆R² Step 4</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>R² Total</td>
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<td></td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship. *p< .05, **p<.01, ***p<.001
Table 15: Hierarchical Regression Analysis - The Moderation Effect of Negative Quality of Relationship (i.e., support) in the Association Between Stressors and Frequency of Contact (N = 82) (Hypothesis 2c)

<table>
<thead>
<tr>
<th>Step 1 (Background)</th>
<th>Undermining * Diagnosis (Model 1)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining * MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$β$</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.20**</td>
<td>.08</td>
<td>.27</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-2.12***</td>
<td>.56</td>
<td>-.36</td>
</tr>
<tr>
<td></td>
<td>$R^2_{Step 1} = .22^{***}$</td>
<td>$R^2_{Step 1} = .22^{***}$</td>
<td>$R^2_{Step 1} = .22^{***}$</td>
</tr>
<tr>
<td>Step 2 (Stressors)</td>
<td>CR Diagnosis (1=DD)</td>
<td>.23</td>
<td>.53</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.01</td>
<td>.01</td>
<td>-.14</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.32*</td>
<td>.16</td>
<td>-.21</td>
</tr>
<tr>
<td></td>
<td>$ΔR^2_{Step 2} = .11^{**}$</td>
<td>$ΔR^2_{Step 2} = .11^{**}$</td>
<td>$ΔR^2_{Step 2} = .11^{**}$</td>
</tr>
<tr>
<td>Step 3 (QoR)</td>
<td>Undermining</td>
<td>.16</td>
<td>.10</td>
</tr>
<tr>
<td>Support</td>
<td>.32***</td>
<td>.07</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>$ΔR^2_{Step 3} = .15^{***}$</td>
<td>$ΔR^2_{Step 3} = .15^{***}$</td>
<td>$ΔR^2_{Step 3} = .15^{***}$</td>
</tr>
<tr>
<td>Step 4 (Interaction)</td>
<td>Undermining*(Stressor)</td>
<td>-.12</td>
<td>.12</td>
</tr>
<tr>
<td></td>
<td>$ΔR^2_{Step 4} = .01$</td>
<td>$ΔR^2_{Step 4} = .01$</td>
<td>$ΔR^2_{Step 4} = .02$</td>
</tr>
<tr>
<td></td>
<td>$R^2_{Total} = .48$; $F=8.48^{***}$</td>
<td>$R^2_{Total} = .49$; $F=8.66^{***}$</td>
<td>$R^2_{Total} = .49$; $F=8.79^{***}$</td>
</tr>
</tbody>
</table>

CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship.
*p<.05, **p<.01, ***p<.001
Table 16: Hierarchical Regression Analysis - The Moderation Effect of Negative Quality of Relationship (i.e., undermining) in the Association Between Stressors and Supervision (N = 82) (Hypothesis 2c)

<table>
<thead>
<tr>
<th>Step 1 (Background)</th>
<th>Undermining * Diagnosis (Model 1)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining * MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE_B$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Treatment Program (1= residential)</td>
<td>1.14</td>
<td>.99</td>
<td>.09</td>
</tr>
</tbody>
</table>

$R^2_{\text{Step 1}} = .28^{***}$  

<table>
<thead>
<tr>
<th>Step 2 (Stressors)</th>
<th>Undermining * Diagnosis (Model 1)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining * MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE_B$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.53</td>
<td>.93</td>
<td>.04</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.09***</td>
<td>.01</td>
<td>.71</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.56*</td>
<td>.28</td>
<td>-.18</td>
</tr>
</tbody>
</table>

$\Delta R^2_{\text{Step 2}} = .34^{***}$  

<table>
<thead>
<tr>
<th>Step 3 (QoR)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining * MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>$B$</td>
<td>$SE_B$</td>
</tr>
<tr>
<td></td>
<td>.02</td>
<td>.17</td>
</tr>
<tr>
<td></td>
<td>.08</td>
<td>.12</td>
</tr>
</tbody>
</table>

$\Delta R^2_{\text{Step 3}} = .00$  

<table>
<thead>
<tr>
<th>Step 4 (Interaction)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining*MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE_B$</td>
</tr>
<tr>
<td>Undermining*Stressor</td>
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<td>.21</td>
</tr>
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</table>

$\Delta R^2_{\text{Step 4}} = .00$  

<table>
<thead>
<tr>
<th>Step 4 (Interaction)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining*MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$SE_B$</td>
</tr>
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</tr>
</tbody>
</table>

$R^2_{\text{Total}} = .62; F=14.99^{***}$  

<table>
<thead>
<tr>
<th>Step 4 (Interaction)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining*MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>$SE_B$</td>
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$R^2_{\text{Total}} = .63; F=15.18^{***}$  

<table>
<thead>
<tr>
<th>Step 4 (Interaction)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining*MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$B$</td>
<td>$SE_B$</td>
</tr>
<tr>
<td></td>
<td>.08</td>
<td>.06</td>
</tr>
</tbody>
</table>

$R^2_{\text{Total}} = .63; F=15.55^{***}$  

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship.  
*p< .05, **p< .01, ***p< .001
Table 17: Hierarchical Regression Analysis - The Moderation Effect of Positive Quality of Relationship (i.e., support) in the Association Between Stressors and Subjective Burden (N = 82) (Hypothesis 2d)

<table>
<thead>
<tr>
<th></th>
<th>Support* Diagnosis (Model 1)</th>
<th></th>
<th></th>
<th></th>
<th>Support* Behavioral Problems (Model 2)</th>
<th></th>
<th></th>
<th></th>
<th>Support* MH/SU Problems (Model 3)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td></td>
<td>B</td>
<td>SE B</td>
<td>β</td>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td><strong>Step 1 (Background)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective Burden</td>
<td>1.31***</td>
<td>.36</td>
<td>.41</td>
<td></td>
<td>1.25***</td>
<td>.35</td>
<td>.40</td>
<td></td>
<td>1.25***</td>
<td>.35</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>2.98</td>
<td>2.59</td>
<td>.12</td>
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<td>2.80</td>
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<td>.11</td>
<td></td>
<td>3.00</td>
<td>2.57</td>
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<tr>
<td><strong>R² Step 1 = .31</strong>*</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2 (Stressors)</strong></td>
<td></td>
<td></td>
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<tr>
<td>CR Diagnosis (1=DD)</td>
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<td>2.42</td>
<td>-.04</td>
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<td>2.42</td>
<td>-.04</td>
<td></td>
<td>-.95</td>
<td>2.41</td>
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<tr>
<td>CR Behavioral Problems</td>
<td>.05</td>
<td>.03</td>
<td>.20</td>
<td></td>
<td>.05</td>
<td>.03</td>
<td>.19</td>
<td></td>
<td>.05</td>
<td>.03</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
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<td>.71</td>
<td>.15</td>
<td></td>
<td>.99</td>
<td>.72</td>
<td>.16</td>
<td></td>
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<td>.71</td>
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<tr>
<td><strong>ΔR² Step 2 = .06</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Step 3 (QoR)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Undermining</td>
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<td>.34</td>
<td>-.03</td>
<td></td>
<td>-.07</td>
<td>.34</td>
<td>-.02</td>
<td></td>
<td>-.05</td>
<td>.34</td>
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<tr>
<td>Support</td>
<td>.31</td>
<td>.47</td>
<td>.11</td>
<td></td>
<td>.10</td>
<td>.33</td>
<td>.04</td>
<td></td>
<td>.07</td>
<td>.32</td>
</tr>
<tr>
<td><strong>ΔR² Step 3 = .00</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Step 4 (Interaction)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Support* (Stressor)</td>
<td>-.40</td>
<td>.55</td>
<td>-.11</td>
<td></td>
<td>.00</td>
<td>.01</td>
<td>.07</td>
<td></td>
<td>.13</td>
<td>.13</td>
</tr>
<tr>
<td><strong>ΔR² Step 4 = .01</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>R² Total = .38; F=5.47</strong>*</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship.
*p<.05, **p<.01, ***p<.001
Table 18:
Hierarchical Regression Analysis - The Moderation Effect of Positive Quality of Relationship (i.e., support) in the Association Between Stressors and Depressive Symptomatology (N =82)(Hypothesis 2d)

<table>
<thead>
<tr>
<th></th>
<th>Support* Diagnosis</th>
<th>Support* Behavioral Problems</th>
<th>Support* MH/SU Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Model 1)</td>
<td>(Model 2)</td>
<td>(Model 3)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>β</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>-.14</td>
<td>.31</td>
<td>-.06</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-2.28</td>
<td>2.22</td>
<td>-.12</td>
</tr>
<tr>
<td>Step 1 (Background)</td>
<td>R² Step 1 = .01</td>
<td>R² Step 1 = .01</td>
<td>R² Step 1 = .01</td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>2.55</td>
<td>2.07</td>
<td>.14</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.03</td>
<td>.03</td>
<td>.15</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>1.63**</td>
<td>.61</td>
<td>.35</td>
</tr>
<tr>
<td>ΔR² Step 2 = .16**</td>
<td></td>
<td>R² Step 2 = .16**</td>
<td>ΔR² Step 2 = .16**</td>
</tr>
<tr>
<td>Undermining</td>
<td>-.06</td>
<td>.29</td>
<td>-.03</td>
</tr>
<tr>
<td>Support</td>
<td>-.09</td>
<td>.40</td>
<td>-.04</td>
</tr>
<tr>
<td>ΔR² Step 3 = .01</td>
<td></td>
<td>ΔR² Step 3 = .01</td>
<td>ΔR² Step 3 = .01</td>
</tr>
<tr>
<td>Support* (Stressor)</td>
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<td>.47</td>
<td>.18</td>
</tr>
<tr>
<td>ΔR² Step 4 = .01</td>
<td></td>
<td>R² Step 4 = .00</td>
<td>ΔR² Step 4 = .00</td>
</tr>
<tr>
<td>R² Total = .19; F=2.14*</td>
<td></td>
<td>R² Step 4 = .00</td>
<td>R² Total = .18; F=2.01*</td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship.
*p< .05, **p< .01, ***p<.001
Table 19: Hierarchical Regression Analysis - The Moderation Effect of Negative Quality of Relationship (i.e., undermining) in the Association Between Stressors and Subjective burden (N =82)(Hypothesis 2d)

<table>
<thead>
<tr>
<th></th>
<th>Undermining * Diagnosis (Model 1)</th>
<th>Undermining * Behavioral Problems (Model 2)</th>
<th>Undermining * MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(B)</td>
<td>SE (B)</td>
<td>(\beta)</td>
</tr>
<tr>
<td><strong>Step 1 (Background)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective Burden</td>
<td>1.25***</td>
<td>.36</td>
<td>.39</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>2.80</td>
<td>2.60</td>
<td>.11</td>
</tr>
<tr>
<td>(R^2) Step 1</td>
<td>.31***</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2 (Stressors)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>-.89</td>
<td>2.42</td>
<td>-.04</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.06</td>
<td>.03</td>
<td>.22</td>
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<td>CR MH/SU Problems</td>
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<td>.72</td>
<td>.14</td>
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<td>(\Delta R^2) Step 2</td>
<td>.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3 (QoR)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undermining</td>
<td>.01</td>
<td>.45</td>
<td>.00</td>
</tr>
<tr>
<td>Support</td>
<td>.06</td>
<td>.32</td>
<td>.02</td>
</tr>
<tr>
<td>(\Delta R^2) Step 3</td>
<td>.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4 (Interaction)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undermining*(Stressor)</td>
<td>-.21</td>
<td>.55</td>
<td>-.05</td>
</tr>
<tr>
<td>(\Delta R^2) Step 4</td>
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<td>(R^2) Total</td>
<td>.37</td>
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</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship.
*p< .05, **p<.01. ***p<.001
Table 20: Hierarchical Regression Analysis - The Moderation Effect of Negative Quality of Relationship (i.e., undermining) in the Association Between Stressors and Depressive Symptomatology (N = 82) (Hypothesis 2d)

<table>
<thead>
<tr>
<th>Step 1 (Background)</th>
<th>Undermining * Diagnosis (Model 1)</th>
<th>Undermining*Behavioral Problems (Model 2)</th>
<th>Undermining * MH/SU Problems (Model 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(B)</td>
<td>(SE\ B)</td>
<td>(\beta)</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>-.10</td>
<td>.30</td>
<td>-.04</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-1.84</td>
<td>2.19</td>
<td>-.10</td>
</tr>
<tr>
<td></td>
<td>(R^2_{\text{Step } 1} = .01)</td>
<td>(R^2_{\text{Step } 1} = .01)</td>
<td>(R^2_{\text{Step } 1} = .01)</td>
</tr>
<tr>
<td>Step 2 (Stressors)</td>
<td>CR Diagnosis (1=DD)</td>
<td>2.62</td>
<td>2.06</td>
</tr>
<tr>
<td></td>
<td>CR Behavioral Problems</td>
<td>.03</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>CR MH/SU Problems</td>
<td>1.47*</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>(\Delta R^2_{\text{Step } 2} = .16**)</td>
<td>(\Delta R^2_{\text{Step } 2} = .16**)</td>
<td>(\Delta R^2_{\text{Step } 2} = .16**)</td>
</tr>
<tr>
<td>Step 3 (QoR)</td>
<td>Undermining</td>
<td>.37</td>
<td>.39</td>
</tr>
<tr>
<td></td>
<td>Support</td>
<td>.26</td>
<td>.27</td>
</tr>
<tr>
<td></td>
<td>(\Delta R^2_{\text{Step } 3} = .01)</td>
<td>(\Delta R^2_{\text{Step } 3} = .01)</td>
<td>(\Delta R^2_{\text{Step } 3} = .01)</td>
</tr>
<tr>
<td>Step 4 (Interaction)</td>
<td>Undermining*(Stressor)</td>
<td>-.70</td>
<td>.47</td>
</tr>
<tr>
<td></td>
<td>(\Delta R^2_{\text{Step } 4} = .03)</td>
<td>(\Delta R^2_{\text{Step } 4} = .00)</td>
<td>(\Delta R^2_{\text{Step } 4} = .00)</td>
</tr>
<tr>
<td></td>
<td>(R^2_{\text{Total}} = .20; \ F=2.30^*)</td>
<td>(R^2_{\text{Total}} = .18; \ F=1.97)</td>
<td>(R^2_{\text{Total}} = .18; \ F=1.97)</td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship.

*p< .05, **p< .01, ***p<.001
Table 21: Hierarchical Regression Analysis - The Moderation Effect of Quality of Relationship (i.e., support) in the Association Between Caregivers’ Subjective Burden and Frequency of Contact (N = 82)(Hypothesis 2e)

<table>
<thead>
<tr>
<th>Step 1 (Background)</th>
<th>Support * Subjective Burden</th>
<th>Undermining * Subjective Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Model 1)</td>
<td>(Model 2)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.20*</td>
<td>.08</td>
</tr>
<tr>
<td>Treatment Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1= residential)</td>
<td>-2.09***</td>
<td>.57</td>
</tr>
<tr>
<td>R² Step 1 = .22***</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2 (Stressors)</th>
<th>Support * Subjective Burden</th>
<th>Undermining * Subjective Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Model 1)</td>
<td>(Model 2)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
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<td>.53</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
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<td>.16</td>
</tr>
<tr>
<td>ΔR² Step 2 = .11**</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3 (Well-Being)</th>
<th>Support * Subjective Burden</th>
<th>Undermining * Subjective Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Model 1)</td>
<td>(Model 2)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Subjective Burden</td>
<td>.01</td>
<td>.03</td>
</tr>
<tr>
<td>ΔR² Step 3 = 00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 4 (QoR)</th>
<th>Support * Subjective Burden</th>
<th>Undermining * Subjective Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Model 1)</td>
<td>(Model 2)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Support</td>
<td>.33***</td>
<td>.07</td>
</tr>
<tr>
<td>Undermining</td>
<td>.10</td>
<td>.07</td>
</tr>
<tr>
<td>ΔR² Step 4 = .15***</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 5 (Interaction)</th>
<th>Support * Subjective Burden</th>
<th>Undermining * Subjective Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Model 1)</td>
<td>(Model 2)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>QoR * Subjective Burden</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>ΔR² Step 5 = .01</td>
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</tr>
<tr>
<td>R² Total = .49; F=7.70***</td>
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</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001
Table 22: Hierarchical Regression Analysis - The Moderation Effect of Quality of Relationship (i.e., support) in the Association Between Caregivers’ Depressive Symptomatology and Frequency of Contact (N=82) (Hypothesis 2e)

<table>
<thead>
<tr>
<th></th>
<th>Support * Depressive Symptomatology</th>
<th>Undermining * Depressive Symptomatology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Model 1)</td>
<td>(Model 2)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Step 1 (Background)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.20**</td>
<td>.08</td>
</tr>
<tr>
<td>Treatment Program</td>
<td>-2.24***</td>
<td>.56</td>
</tr>
<tr>
<td>R² Step 1 = .22***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 (Stressors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.12</td>
<td>.53</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.26</td>
<td>.16</td>
</tr>
<tr>
<td>ΔR² Step 2 = .11***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3 (Well-Being)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressive Symptomatology</td>
<td>-.01</td>
<td>.03</td>
</tr>
<tr>
<td>ΔR² Step 3 = .00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4 (QoR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>.33***</td>
<td>.07</td>
</tr>
<tr>
<td>Undermining</td>
<td>.10</td>
<td>.07</td>
</tr>
<tr>
<td>ΔR² Step 4 = .15***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5 (Interaction)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QoR*Dep.Symp.</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>ΔR² Step 5 = .02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² Total = .49; F=7.77***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5 (Interaction)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QoR*Dep.Symp.</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>ΔR² Step 5 = .02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² Total = .49; F=7.77***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, Dep.Symp.=Depressive Symptomatology. *p<.05, **p<.01, ***p<.001
Table 23: Hierarchical Regression Analysis - The Moderation Effect of Quality of Relationship in the Association Between Caregivers’ Subjective Burden on Supervision (N = 82)(Hypothesis 2e)

<table>
<thead>
<tr>
<th></th>
<th>Support * Subjective Burden (Model 1)</th>
<th>Undermining * Subjective Burden (Model 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Step 1 (Background)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment Program (1= residential)</td>
<td>.83</td>
<td>.96</td>
</tr>
<tr>
<td>R² Step 1 = .28***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 (Stressors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.64</td>
<td>89</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.09***</td>
<td>.01</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.67*</td>
<td>.26</td>
</tr>
<tr>
<td>ΔR² Step 2 = .34***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3 (Well-Being)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Burden</td>
<td>.12**</td>
<td>.04</td>
</tr>
<tr>
<td>ΔR² Step 3 = .04**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 4 (QoR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>.08</td>
<td>.12</td>
</tr>
<tr>
<td>Undermining</td>
<td>.03</td>
<td>.12</td>
</tr>
<tr>
<td>ΔR² Step 4 = .00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5 (Interaction)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QoR*Subjective Burden</td>
<td>.00</td>
<td>.01</td>
</tr>
<tr>
<td>ΔR² Step 5 = .00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² Total = .66; F=15.41***</td>
<td></td>
<td>R² Total = .66; F=15.43***</td>
</tr>
</tbody>
</table>

Key: CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, QoR=Quality of Relationship
*p<.05, **p<.01, ***p<.001
Table 24: Hierarchical Regression Analysis - The Moderation Effect of **Quality of relationship** in the Association Between Caregivers’ Depressive Symptomatology on Supervision (N = 82) (Hypothesis 2e)

<table>
<thead>
<tr>
<th></th>
<th>Support * Depressive Symptomatology (Model 1)</th>
<th>Undermining * Depressive Symptomatology (Model 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td><strong>Step 1 (Background)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Objective Burden</td>
<td>.40**</td>
<td>.13</td>
</tr>
<tr>
<td>Treatment Program (1= residential)</td>
<td>1.41</td>
<td>.97</td>
</tr>
<tr>
<td>R² Step 1 = .28***</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 2 (Stressors)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR Diagnosis (1=DD)</td>
<td>.70</td>
<td>.92</td>
</tr>
<tr>
<td>CR Behavioral Problems</td>
<td>.09***</td>
<td>.01</td>
</tr>
<tr>
<td>CR MH/SU Problems</td>
<td>-.66*</td>
<td>.28</td>
</tr>
<tr>
<td>ΔR² Step 2 = .34***</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 3 (Well-Being)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depressive Symptomatology</td>
<td>.04</td>
<td>.05</td>
</tr>
<tr>
<td>ΔR² Step 3 = .00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 4 (QoR)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>-.01</td>
<td>.13</td>
</tr>
<tr>
<td>Undermining</td>
<td>.05</td>
<td>.12</td>
</tr>
<tr>
<td>ΔR² Step 4 = .00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Step 5 (Interaction)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>QoR*Dep.Symp.</td>
<td>-.03*</td>
<td>.01</td>
</tr>
<tr>
<td>ΔR² Step 5 = .02*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R² Total = .65; F=14.58***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Key:** CR=Care-Recipient, DD=Dual Diagnosis, MH/SU=Mental Health / Substance use, Dep.Symp.=Depressive Symptomatology; *p< .05, **p< .01, ***p<.001
Table 25:

Summary of Research Question 2- Hypotheses, and Main Findings

Does quality of caregiver-care recipient relationships moderate the relationship among the three domains of the caregiving process: caregivers’ stressors, caregivers’ well being, and the amount of caregivers’ involvement with the client?

<table>
<thead>
<tr>
<th>Preliminary Hypotheses</th>
<th>Findings</th>
</tr>
</thead>
</table>
| H2a: Higher levels of Positive QoR (i.e., supportive interaction) between CG and CR will be associated with lower levels of perceived primary stressors, higher levels of CG’s well-being, as well as higher levels of CG’s involvement with the CR. | Hypothesis partially supported. Higher levels of Positive QoR was correlated with:  
  - Stressors: Lower levels of Behavioral Problems and MH/SU Problems.  
  - Well-Being: Lower levels of Subjective Burden.  
  - Involvement: Higher Frequency of Contact. |
| H2b: It is expected that higher levels of Negative QoR (i.e., undermining interactions) between CG and CR will be associated with higher levels of perceived primary stressors, lower levels of CG’s well-being, as well as lower levels of CG’s involvement with the CR. | Hypothesis partially supported. Higher levels of Negative QoR was correlated with:  
  - Stressors: Higher levels of Behavioral Problems and MH/SU Problems.  
  - Well-Being: Higher levels of Subjective Burden.  
  - Involvement: Higher levels of Supervision. |

<table>
<thead>
<tr>
<th>Moderation Hypotheses</th>
<th></th>
</tr>
</thead>
</table>
| H2c: QoR will moderate the effect of stressors on CG involvement with the CR.  
  - Higher level of Positive QoR will buffer the negative effect of CG stressors on CG involvement with the CR;  
  - Higher level of Negative QoR will exacerbate the negative effect of stressors on CG involvement with the CR. | **Positive QoR** - Hypothesis partially supported.  
  - Positive QoR * Behavioral Problems → Frequency Of Contact  
  - Positive QoR * MH/SA Problems → Frequency Of Contact  
  - Positive QoR * Objective Burden → Frequency Of Contact  
  **Negative QoR** - Hypothesis not supported. |

Key: CG=Caregiver, CR= Care-Recipient, QoR=Quality of relationship, MH/SU=Mental Health/Substance Use.
H2d: QoR will moderate the effect of stressors on CG well-being.
- Higher level of Positive QoR will buffer the negative effect of CG stressors on CG well-being;
- Higher level of Negative QoR will exacerbate the negative effect of stressors on CG subjective burden and depressive symptomatology.

<table>
<thead>
<tr>
<th>Positive QoR</th>
<th>Hypothesis not supported.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative QoR</td>
<td>Hypothesis not supported.</td>
</tr>
</tbody>
</table>

H2e: QoR will moderate the effect of CG well-being on CG involvement with the CR.
- Higher level of Positive QoR will buffer the negative effect of low levels of CG well-being on low levels of CG involvement with the CR.
- Higher level of Negative QoR will exacerbate the negative effect of low levels of CG well-being on CG involvement with the CR.

<table>
<thead>
<tr>
<th>Positive QoR</th>
<th>Hypothesis was not supported.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative QoR</td>
<td>Hypothesis not supported.</td>
</tr>
<tr>
<td>Positive QoR * Depressive symptomatology</td>
<td>Supervision</td>
</tr>
</tbody>
</table>

Additional Findings:
Positive QoR – Had a positive main effect on Frequency of Contact (across models).

**Key:** CG=Caregiver, CR=Care-Recipient, QoR=Quality of relationship, MH/SU=Mental Health/Substance Use.
**Figure 2: Subjective Burden as Mediators between Objective Burden and Supervision**

**p<.01; ***p<.001**

Based on Baron and Kenny (1986)

**Key:**

a, b, c, = are the path coefficients.

c’ = Direct Effect (Controlling for Subjective Burden)

ns = not significant

SE = Standard error

**Note:** The model controlled for type of treatment and caregivers’ stressors (care-recipient’s diagnosis, behavioral problems, and emotional/substance use problems).
Figure 3:
Frequency of Contact – Interaction between Positive Quality of Relationship and Care-
Recipient’s Behavioral Problems

Note: All predictors were centered prior to analysis. The Frequency of Contact value is calculated through
the regression equation, holding all predictors constant at the Mean (objective burden, care-recipients’
MH/SA problems, and negative quality of relationship), for women with substance-use only diagnosis
(DD=0) who participate at an outpatient treatment program (Site=0).
Figure 4:
Frequency of Contact – Interaction between Positive Quality of Relationship and Care-Recipient’s Mental-Health/Substance Use Problems

Note: All predictors were centered prior to analysis. The Frequency of Contact value is calculated through the regression equation, holding all predictors constant at the Mean (objective burden, care-recipients’ behavioral problems, and negative quality of relationship), for women with substance-use only diagnosis (DD=0) who participate at an outpatient treatment program (Site=0)
Figure 5:
Frequency of Contact – Interaction between Positive Quality of Relationship and Caregivers’ Objective Burden

Amount of Contact: Interaction between Support*Objective Burden

Note: All predictors were centered prior to analysis. The Frequency of Contact value is calculated through the regression equation, holding all predictors constant at the Mean (objective burden, care-recipients’ behavioral problems, and negative quality of relationship), for women with substance-use only diagnosis (DD=0) who participate at an outpatient treatment program (Site=0)
Figure 6:
Supervision – Interaction between Positive Quality of Relationship and Caregivers’ Depressive Symptomatology

Note: All predictors were centered prior to analysis. The Supervision value is calculated through the regression equation, holding all predictors constant at the Mean (objective burden, care-recipients’ diagnosis, behavioral problems, MH/SA problems, and negative quality of relationship), for women with substance-use only diagnosis (DD=0) who participate at an outpatient treatment program (Site=0).
REFERENCES


Williamson, G. M., & Shaffer, R. (2001). Relationship quality and potentially harmful behaviors by spousal caregivers: How we were then, how we are now. *Psychology & Aging, 16*(2), 217-226.