THE IMPACT OF SENSE OF HUMOR AND OTHER PSYCHOSOCIAL VARIABLES ON CAREGIVER DEPRESSION

by

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(Under the Direction of Nancy P. Kropf)

ABSTRACT

The purpose of this study was to determine what variables would help alleviate depression among spouses caring for their spouses with dementia. Today with people living a longer period of time this dreaded illness will affect more people in the future. Dementia caregiving is associated with a variety of adverse mental and physical outcomes, the most prevalent one being caregiver depression. Humor is usually not considered an important personality characteristic for dealing with life’s stresses.

However, it has been shown to act as a moderator of stress. The sample was composed of 86 spousal caregivers. They responded to a Caregiver Humor Survey, including the CES, the Coping Humor Scale, and Caregiver Burden Inventory (ZBI). A multiple regression analysis showed that caregiver burden was the most statistically significant variable to predict depression. Although not statistically significant, sense of humor showed a moderate negative relationship to caregiver depression. Its use as a tool for all caregivers needs to be more fully explored.

INDEX WORDS: Humor, Caregiver Depression, Caregiver burden, Mediator, Spouses, Social Work
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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA
2005
DEDICATION

This research is dedicated to the memory of my mother, Lee Ginsburg. She was a vibrant and loving woman and taught me to use humor as a way of coping. Unfortunately she became a victim of Alzheimer’s disease in her early eighties, but even then liked to laugh.

It is also dedicated to my wonderful husband Artie, who supported me emotionally and financially and in every possible way to help me obtain this degree. Unfortunately as I am completing this dissertation, they diagnosed Artie with cancer. As I write these words, he is undergoing chemotherapy. I only pray that he will be with me when I finally get this degree, because he is truly the “wind beneath my sails.” I am grateful to have found my soul mate.

I dedicate this work to my children Scott, Jody and Beth who have made my life so much fuller and meaningful. Lastly, this is dedicated to my beautiful, smart and loving grandchildren, Max, Michael, Zachary, Landon, Emily. Noah, Graci Raye and Jacob, who help me laugh and enjoy the wonder of life and who do not care if I have a Ph.D., or Master's degree. They just love me because I am their grandma.
ACKNOWLEDGMENTS

I would like to acknowledge the dedication and support of my Major Professor, Nancy Kropf who encouraged me and guided me in the achievement of my goals. She continued to support me, although she had taken a different position at the University of Georgia. I also would like to express my appreciation to my committee members, Drs. Tom Holland and Stacey Kolomer who stuck with me and helped me to the end. Thank you, Dr. Steve Olejnik of the Educational Psychology Department for taking the time to consult with me on the statistical analysis of the paper. I also want to acknowledge Dr. Jim Bason, Director of the Survey Department at the University of Georgia, for helping me complete this dissertation.
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CHAPTER I
INTRODUCTION

Alzheimer's disease is a progressive, degenerative, irreversible disease that causes cerebral atrophy. It results in the deterioration of intellectual capacities such as memory, abstract thinking, reasoning and language, and loss of the ability to do activities of daily living (ADRD, 2000). Approximately four million Americans have Alzheimer's disease (AD). In a 1993 national survey, nineteen million Americans said they had a family member with AD, and thirty-seven million said they knew someone with AD. One in ten persons more than sixty-five and nearly one half of those more than eighty-five has the disease. A person with AD will live an average of eight years and as many as twenty years or more from the onset of symptoms (ADRD, 2000).

The Second Report of the Advisory Panel on Alzheimer's disease notes that by the year 2050, 14 million Americans will have AD or related dementia, at a cost of $88 billion per year in health costs, unless a cure is found. For persons over age eighty-five, which is the fastest growing age group in the United States, the prevalence of dementia is approximately 25%. These rates, coupled by the other changing demographic trends (e.g., generally lower birth rates, geographic mobility, and the increasing numbers of divorces and single parent families), seem to suggest that the role of caregiver to a cognitively impaired elderly family member will become increasingly commonplace in our society. On the upside of these demographic changes is the longer life that many people can anticipate and enjoy. On the downside is the fact that the risk of AD will increase in a lockstep with
the increase in longevity. Moreover, people can survive with AD for longer periods and this prolongs the psychological and material tax on individuals, families, communities and societal resources.

Although they widely recognize the cost to society of AD, the families do not share the burden of these costs (Montgomery & Williams, 2001). Currently family members bear the primary responsibility for caring for victims of the disease. More than seven of 10 people with Alzheimer's disease live at home, with almost 75% of the home care being provided by family. Family care members play a major role in supporting their impaired relatives throughout the illness. They maintain them in the community, and prevent or delay institutional placement (ADRD, 2000). Families also pay most of the cost out of pocket expenses, since neither Medicare nor most private health insurances cover the long-term care of most patients. Women and minorities bear the costs of home care disproportionately (Montgomery et al., 2001).

**AD Caregiving**

The overall evidence linking dementia to negative mental health outcomes is compelling and consistent. Current studies of caregivers show that there are generally extensive physical, emotional, and financial costs related to dementia (Ory, Yee, Tennstedt & Schulz, 2000; Pearlin, 1994; Poulshock & Deimling, 1984). Dementia caregiving is associated with a variety of adverse mental and physical health outcomes, including depression, anxiety, and poor self-rated health. (Schulz, O'Brien, Bookwala, & Fleissner, 1995). Although a great deal of research has focused on the negative outcomes associated with caregiving, a growing body of literature has examined a wide range of positive outcomes. These outcomes include enjoyment of the role, positive affect, satisfaction, well-being, role gains, uplift, reward, gratification, mastery, growth and meaning.
Caregiver burden is a useful construct that has emerged to describe the particular kind of stress felt by caregivers of Alzheimer's patients in relation to this issue (Gallagher, Rose, Rivera, Lovett, & Thompson 1989; Zarit, Todd & Zarit 1986). Zarit (1986) defines caregiver burden as “the extent to which caregivers perceive their emotional or physical health, social life, and finances as suffering as a result of caring for their relative” (p. 261). While the illness affects the entire family system, the primary caregiver must face the negative consequences of caring (caregiver burden). Although distress among caregivers is a characteristic feature of all caregiving situations, despite patient disability, it is generally believed that caring for some demented individual presents the greatest challenge of all (Biegel, Sales & Schulz, 1991). The cognitive impairment and unusual behavioral disorders associated with dementia create burdens that are uniquely and severally stressful to caregivers (George & Gwyther, 1986).

Out of this caregiver burden literature has evolved a line of inquiry about the stress and coping processes (Haley et al., 1987; Lazarus & Folkman, 1984; Pearlin et al., 1990). Most models of the stress process include stressors, outcomes and mediators. Although most caregivers endure great stress, they vary in their ability to cope successfully (Haley et al., 1987). Some empirical studies on coping have suggested that there are important individual differences in the way caregivers experience the negative outcomes of caregiving (Kramer, 1993, Montgomery, 1999). This analytical approach places the emotional response to caregiving in the mediating role.
We now consensually accept that they cannot predict the intensity of the stress that people exhibit, solely from the intensity of its sources, whether the sources are life events, chronic role strains, the diminishment of self, or all three (Pearlin, Lieberman, Menaghan, & Mullan, 1981). Instead people typically confront stress-provoking conditions with a variety of behaviors, perceptions and cognition, that can alter the difficult conditions or of mediating their impact. They call these collectively mediators. Some researchers that stress research may typically underestimate the power of the mediators (Pearlin, 1989, 1994; Pearlin et al., 1981, 1990). They speak of the capacity of the mediators in the proliferation of secondary stressors, to lessen the intensity of the stressors and to block their contagion at the juncture between primary and secondary stressors. They state, “that to the extent that these kinds of interventions occur, the mediators would indirectly be limiting deleterious outcomes.” (p. 590) Finally, they call for more examinations of these interventions along with new mediators that reduce stressors.

Social support and coping are variables that have been studied for their mediating effect on caregiving situations. Social support and formal resources have been identified as specific buffers to caregiver stress. Yet empirical evidence of these relationships is inconsistent (Clipp & George, 1990; Franks & Parris-Stephens, 1996; Thompson, Futtermann, Gallagher-Thompson, Rose & Lovett, 1993). Some studies show that the caregivers who have social support in caring for the dependent person, perceive satisfaction with this support (Haley et al., 1996; Taylor & Chatters, 1991). Positive psychological effects have been observed after use of respite care (Levesque, Ducharme, & Lachance, 1999). Studies have documented that lower levels of social support are related to increased depression among caregivers (Gold et al., 1995).
Social support as a benefit in caregiving is disputed by studies that suggest that supplementary caregivers are not always beneficial (Penrod, Kane, Kane & Finch, 1995), and may indeed contribute to stress due to caregiver conflict (Bourgeois et al., 1996). Coping, defined as the cognitive and behavioral attempts to manage specific demands that they appraise as stressful is an integral part of the stress process. An individual's repertoire of responses represents an important resource to the caregiver (Lazarus et al., 1984). Even in situations that are unchangeable, coping effects that attempt to reframe the situation in a more positive light and seek guidance and supports are beneficial with respect to caregiver outcomes.

Sense of humor is an important resource for the caregiver to possess. It is a powerful coping strategy and is a mediating factor in stress (Lefcourt & Martin, 1986; Martin & Lefcourt, 1983; Overholser, 1992) and a coping strategy or mechanism (Freud, 1960; Vailliant, 1977). Humor may act directly on depression (Porterfield, 1987) or may act as a buffer (Nezu, Nezu, & Blissett, 1988). Sense of humor tends to modify the relationship between life stress and psychological adjustment (Martin et al., 1983). Some humor researchers report that humor can have direct physiological benefits, such as increasing blood circulation, muscle relaxation, aiding digestion, improving immunity, and facilitating recovery from surgery (Berk, Tan, Fry, Napier, & Lee, 1989; Borins, 1995; Cousins, 1979; Fry 1992; Hulse, 1994; McCaffery, 1990; Ziegler, 1995).

Despite the recognition that the stress of caregiving makes caregivers vulnerable to detrimental health outcomes, relatively little is known about the mechanisms by which these outcomes occur, and this is important for future research (Schulz et al., 1995). This forecast makes it important to examine other possible mediators that will improve the quality of life for both the
caregivers and care recipient. This could include the testing of variables such as sense of humor as a mediator of stress (Pearlin, 1989, 1994; Pearlin et al., 1981; Pearlin et al., 1990).

Implications for Social Work

The therapeutic use of humor in social work therapy has many positive implications for the practice of social work, particularly in improving the social worker-client relationship. Humor can aid in developing a healing relationship between the social worker and the client. Laughter and humor can establish communication and allow the client to establish a more egalitarian position, enhancing understanding of self and situation. This is true in both the initial assessment process and in the subsequent work together. Humor benefits the client teaching process and allays fears and tensions surrounding unfamiliar experiences.

Enhanced social worker-client communication allows patients to gain control over their own healing and explore new coping skills. Humor gives patients a method of attaining knowledge of self from a different perspective. Studies identifying the characteristics and needs of the elderly are abundant. Lower self-esteem and low morale, which are frequently found in caregivers are two issues that we can address with humor. Humor may aid the individual in resolving conflicts and incongruities in difficult situations (Tennant, 1990).

Sensitivity about the appropriate timing and use of humor as a therapeutic intervention is essential. The social worker must assess the client to learn if humor should be used as an intervention. Discovering what makes a person laugh is important and to realize that some individuals may not possess a sense of humor. A psychological assessment will provide some clues regarding an individual’s capacity to respond to humor. We must examine previous methods of coping with stress, and the significance of humor in everyday life.
Although Pearlin (1983) noted that humor was one of the many coping repertoires used by the caregivers of patients with AD, no major study has specifically dealt with the use of humor as moderator of stress for Alzheimer's caregivers. It is important for social workers, especially those who work with the elderly and their families to recognize this stress relieving benefit of humor. Caregivers of spouses with AD could also benefit from such a study, since in their roles as primary caregivers they are more likely to suffer from depression. The following is a cross-sectional survey study that will present an expanded model of humor as a mediator of caregiver depression. This study will test the effect of humor and other psychosocial variables have on caregiver depression.
CHAPTER II

LITERATURE REVIEW

Before one can understand the role of humor as a moderator of stress, one must understand the elements that make up the stress process, especially how they affect the mental and physical health of the caregivers of persons with Alzheimer's disease and related dementia. One must have a good understanding of the stressors, outcomes and the mediators involved in this process, and the coping strategies that caregivers employ. To clarify these issues, this information will be presented.

Pearlin's Theory of Stress and Coping

The theoretical basis of this paper will be Pearlin and associates' stress theory (Pearlin, 1989, 1994; Pearlin et al., 1981; Pearlin et al., 1990) as it is a one of the most clearly and comprehensively delineated models (Figure 1).

The authors approached the study of caregiving from the perspective of what has become known as the stress process. They may see this stress process as encompassing four major domains: background and context; stressors, mediators and outcomes. Each of these domains subsumes many components or dimensions. The theoretical basis of each of these four domains will be discussed with some empirical research done in each area.

Background and Context

The first domain of the model is the background and context. Factors included in this domain are demographic and ascribed characteristics of the caregiver and the care recipient, and aspects of the social and service environments. “The effects of the ascribed statuses such as age,
Figure 1: Pearlin’s Model of Stress and Coping
gender, and ethnicity, along with educational, occupational and economic attainments are expected to be threaded throughout the process” (Pearlin, 1989, p. 585). Demographic and background/contextual variables, including age, socio-economic status, relationship to patient, caregiver health status and length are salient to any model of caregiver stress and coping. Older caregivers, females, spouses and caregivers of lower socioeconomic status are particularly susceptible to the stress of caregiving (Biegel et al., 1991).

Central to the caregiving context is the relationship of the caregiver to the elder, termed the caregiving history (Pearlin et al., 1990). There are two levels to this dyadic relationship: the structural and the dyadic history of the interaction. Norms govern the structural role, processes associated with gender, generation, and culture that create the parameters around caregiving processes. The structural level places each member of the dyad into a role relationship that usually predates the current relationship. Most often this prior role is that of spouse or child.

Many studies have noted the prevalence of spouses and adult children as primary caregivers (Merrill, 1997; Montgomery, 1999), and the preponderance of women as caregivers (Dwyer & Coward, 1992; Merrill, 1997). Spouses provide more intense and more personal care than do children. Daughters provide more help with household tasks and personal care than sons (Montgomery & Williams, 2001). Within these parameters, family histories determine the interactions between the members of the caregiving dyad (Pyke & Bengtson, 1996; Pruchno, Burant, & Peters, 1997), and personality traits within the dyad (Bookwalla & Schulz, 1998; Hooker, Monahan, Shirfren, & Hutchinson, 1998; Zarit, Stephens, Townsend & Greene, 1998). Additionally, each relationship has its own individual history that encompasses the specific
dynamics that have emerged over time for that dyad (Braithwaite, 1996; Corcoran, 1992; Dwyer et al., 1992).

Evidence suggests that both the consequences of caregiving and the demands of the caregiving role are different for men and women. For example, as compared with male caregivers, female caregivers consistently report higher levels of stress and burden (Miller & Cafasso, 1992; Stoller, 1992), report greater social losses and isolation, (Stoller, 1992) are more likely to report their health as poor and to report higher levels of chronic conditions, such as hypertension and arthritis, (Pruchno & Resch, 1989) and to show higher levels of emotional distress, even when the higher prevalence of emotional distress among women than among men is taken into account. In addition, females spend more hours providing care, perform a greater number of caregiving tasks than do men, and are more likely to carry out personal care activities (i.e., bathing, feeding), which are among the most burdensome of caregiver tasks (Miller et al., 1992). With respect to background characteristics, better educated caregivers showed lower levels of subjective stress consistent with expectations and with previous findings that suggest poorer outcomes for caregivers with less education and lower socioeconomic status (Biegel et al., 1991). Caregivers with greater educational, and thus financial resources, may be better able to obtain outside assistance and access to community resources. They may also have some larger or different repertoires of problem-solving or resource mobilization skills.

The socio-cultural background of the caregiver provides information on his or her cultural beliefs and attitudes. Racial and ethnic group behavior and religious practices would be included in this area. These cultural beliefs can set the stage for caregiving, because they influence and shape perceptual, explanatory and behavioral options for groups in their response to illness and
dependency (Angel & Thoits, 1987). Cultural beliefs can also help shape responses to feelings of burden, and one's willingness to take care and help influence caregivers beliefs about their filial obligation, duty, and reciprocity (Lawton, Rajagopal, Brody, & Kleban, 1992). Cultural differences have been noted in family values, norms and customs, and in family and kinship structures. Familism, or the belief in the primacy of family responsibilities over individual wants have been cited as a primary cross-cultural determinate of caregiver role assumption and burden (Merrill, 1997). Much of the caregiver literature on caregiver distress is based on research about White families, yet there is increasing recognition that different racial or ethnic groups approach family caregiving from different cultural perspectives (Aranda & Knight, 1997; Connell & Gibson, 1997). Among African Americans, caregivers are less likely to be spouses than among Whites. Many studies have also reported that African American caregivers have been found to experience less burden and depression than their White caregivers (Connell et al., 1997; Lawton et al., 1992).

The length of time that a caregiver takes care of the care recipient may have an impact on caregiver outcomes. Since a person can live from eight to twenty years from the onset of the Illness, the caregiving years may be a very long length of time. The length of time in the caregiving role has yielded mixed effects on burden. Zarit et al.,(1986) found that the caregiver's ability to tolerate problem behaviors increased with time as the time progressed. These researchers felt that this may be due to they're having learned to manage their problems more effectively. On the other hand, Gaynor (1990) studied 155 caregivers and found that feelings of were higher among women who had been involved in caregiving for an extended time.
Stressors

The next conceptual domain of Pearlin's stress model is the source of stress. Pearlin and associates (Pearlin et al., p.586) define stressors “as conditions, experiences, and activities that are problematic for people; that is, that threatens them, thwarts their efforts, fatigues them and defeats their dreams." They divide stressors into two types of stressors: primary and secondary.

Primary Stressors

In Pearlin and associates' stress process (Pearlin, 1989, 1994; Pearlin et al., 1990) primary stressors are those anchored directly in caregiving activities. There are three conditions that they assess: 1) the activities of daily living (ADL) and the instrumental activities of daily living (IADL) for which the patient is dependent on others; 2) the extent to which the person's cognitive functioning is dependent and deteriorated; and 3) the range of behaviors that pose a threat to safety and that is socially inappropriate. These stressors are all objective in the sense that an outside independent observer could measure them.

There are additional primary stressors that are detected more in the subjective states and experiences of the caregivers. The more objective conditions of the caregiving situation influence these subjective stressors. Overload, the sense of one's burdens are undiminished by work and effort, is an example of such influence (Pearlin, 1994). Other subjective stressors are deprivations that caregivers feel in their relationship with their impaired relative; the sense of being deprived of affectional exchange with the patient, sense of being deprived of having an instrumental partner, a person with whom one shared enjoyable activities, plans and a division of household labor. These deprivations are statistically associated with the cognitive state and the problem of behavior of the care recipient.
Overall, researchers have found that measures of the objective severity of dementia patients' impairment show little relation to caregiver outcomes and that caregivers' levels of social support and cognitive appraisals predict depression and burden (Fiore, Becker & Coppel 1983; Pagel, Becker & Coppel, 1985; Zarit, Reever & Bach-Peterson, 1980). Research suggested that the caregiver's subjective interpretation of caregiving tasks had a stronger impact on caregiving well-being, than on the actual tasks themselves (Haley, Levine, Brown & Hughes 1987). They also found that caregivers' subjective appraisals of their patients' problems were better predictors of depression, than the objective problems. Subjective primary stressors such as feelings of being captive in the caregiver role and overloaded by caregiving responsibilities are related to caregiver depressive symptomatology over time (Aneshensel, Pearlin, Mullan, Zarit & Whitlatch, 1995).

Stress defined either as the objective or subjective experience of individuals has been consistently linked to depression (Aneshensel & Frerichs, 1982; Dohrenwend & Dohrenwend, 1974, 1978; Kiecolt-Glaser, Dura, Speicher, Trask & Glaser, 1995; Lazarus et al., 1984; Schulz et al., 1995; Ory, Yee, Tennstedt, & Schulz, 2000). Caregiver depression has been linked cross-sectionally to multiple aspects of primary stress. Objective primary stresses such as the relatives' behavior problems, (e.g., wandering and aggression) have been related to caregivers' psychological distress, especially to depression (Biegel et al., 1991; George et al., 1986; Schulz et al., 1995).

Patient problem behaviors are predictive of negative outcomes, and level of cognitive function has been found to correlate positively with physical health of the caregiver (Schulz & Williamson, 1994). Clinical investigators (Chenoweth & Spencer, 1986; Demmling & Bass, 1986; Groves 1987; Sheldon, 1982) reported patient wandering, incontinence and toileting, personal irresponsibility, and disruptive behavior to be particularly difficult problems for
caregivers. Kuilick and Hirschfeld (1984) found that caregivers' intolerance of and inability to manage confusional states and argumentative, uncooperative, and apathetic behavior increased the likelihood of institutional placement.

Significant gender differences emerged between caregiving husbands and wives reports of secondary stressors (Bookwala et al., 2000). Results of a national survey of caregivers indicate that men report spending less time in care provision activities than do women (National Alliance of Caregiving, 1997). It also has been reported that husbands use more respite care and suffer less stress or burden from the caregiving experiences than wives (Winslow & Carter, 1999).

Secondary Stressors

Primary stresses may impact negatively on the caregiver and lead to secondary stresses. These secondary strains of caregiving include constraints on the other aspects of the caregiver's life, including family and occupational roles, social and recreational activities, and intrapsychic strains such as mastery and loss of self, role captivity, perceived confidence and perceived gain from the caregiving experience (Pearlin et al., 1990). A great deal was written about caregiver stress and it has generally been referred to under the rubric of caregiver burden (Pearlin, 1994; Pearlin et al., 1981, Pearlin et al., 1990; Zarit et al., 1980, 1986). Caregiver burden is a useful construct that has emerged in relation to this issue (Gallagher et al., 1989; Zarit et al., 1986). Zarit (1986) defines caregiver burden as “the extent to which caregivers perceive their emotional or physical health, social life and financial situation, as a result of caring for their relative” (p. 261).

One distinction that is noted in the literature is the difference between objective and subjective burden. Objective burden has been defined as the disruptions or changes in the caregiver's life and their household. Subjective burden is the caregiver's stress and anxiety related
to the extent to which they manipulated by the demands of the elder (Montgomery & Borgatta, 1989).

While dementia affects the entire family system, the primary caregiver (who is usually the spouse if he or she is alive) must face the negative issues of caring (psychological burden and stress, depression, anger, physical illness, etc). As symptoms of decline, such as combatedness, wandering, and incontinence become increasingly manifest, the numerous contingencies upon which care plans rest are easily disrupted (Colerick & George, 1986). Frequently families must assist the demented patient with dressing, feeding, bathing and the management of incontinence. Having to witness the deterioration of one's loved one aggravates the physical demands of providing care, a process described by caregivers as a “living death” (Haley, et al., 1987).

Research has found that increased burden is associated with disrupted relationships with the caregiver and family and friends (Cantor, 1983, Poulshock et al., 1984). Kinney & Stephens (1989) demonstrated that increased caregiver difficulty was associated with negative interpersonal relations. Townsend and Noelker (1987) related the quality of family relationships to the effectiveness of caregiving. Williamson and Schulz (1990) found that caregivers who had a close relationship with the patient prior to AD onset felt less burdened than those whose relationship was not close. This is consistent with earlier results (Horowitz, 1979; Horowitz & Shindleman, 1983; Lund, Pett & Caserta, 1985-March), suggesting that greater affection is associated with less caregiving stress.

Role strains are enduring problems that one experiences as an incumbent of a particular role or status. There is good evidence that chronic strains that arise within important roles are powerful stressors (Pearlin, 1983). They include such things as family conflict, economic problems and the constriction of social life. Intrapsychic strains are found within the person and
relate to the individual's perceptions of and feelings about self (Pearlin, 1994). They include self-concepts like self-esteem and mastery. Past research has shown that under conditions of enduring hardship, self-concepts may be damaged (Pearlin et al., 1981), and when this happens, people are more likely to suffer symptoms of depression.

Hooyman & Gonyea (1995), studied the levels of objective and subjective burden. In general impacts and outcomes are grouped under four general headings: infringement of time and lifestyle, impacts on the caregiver-care receiver relationship, mental health, and physical health. An example of role overload can be seen in the conflict between caregiving and work. Women are generally believed to experience more primary and secondary stress and secondary role strain, and experience greater occupational disruption as a result of caregiving responsibilities (Kramer & Kipnis, 1995; Merrill, 1997; Yee et al., 2000). The role overload of caring for one's children and one's parents also were discussed by Brody (1981), who identified these caregivers as “women in the middle.” Caregiving may impose formidable strain on family finances because of the expenditures of providing care and decreased earnings (Aneshensel et al., 1995).

One of the main types of intrapsychic strains that comes from being the caregiver is loss of personal control or mastery. A feeling of loss of personal control has been noted to aggravate depression for elders (Boss, Caron, Horbal, & Mortimer, 1990). Having a spouse develop AD results in a loss of the personal control over the status and course of the relationship, as well as loss of the ability of partners to negotiate aspects of the relationship change (Blieszner & Shifflet, 1990). Other researchers also describe a decrease in a loss of control and unpredictability (Martinson, Chesla, & Muwaswes, 1993; Quayhagen & Quayhagen, 1996). Similarly, Farren,

Although many indicators of physical health have been used in caregiver research, one of the most interesting is caregiver perceived health. Nearly all the studies of the health effects of caregiving have used self-report scales. Even though these self-report studies consistently show poorer health among caregivers than age-matched peers, it is difficult to draw causal inferences from the data (Schulz et al., 1994). Schultz et al., (1990) note that the relationship between self-report of physical health and objective measures of physical health are moderate at best.

Stone et al., (1987) found that caregivers perceive themselves in poorer health than do their age peers in the United States population. Spousal caregivers have been reported as having a higher incidence of physical health problems than the general elderly population, and were found to have poorer health perceptions (Pruchno et al., 1989). In their study of 315 spouse caregivers, with data compared to age-based normative population, the following results were found: caregivers had fewer days sick in bed; had fewer doctor visits; fewer rated health as excellent; higher rates of chronic illness including higher rates of diabetes, arthritis, ulcers, and anemia. Female caregivers also reported more hypertension and heart trouble than the general population. Most of these caregivers are also often old and frail. In fact in a study of 289 caregivers ill health was cited by 21% as one of reasons for institutionalizing their patient and 23% reported a strain on their physical and emotional health (Chenoweth et al., 1986).

Other possible explanations for self-report health findings are suggested by the results of research carried out by Satariano, Minkler, and Langhouser (1984). They surveyed 678 elderly individuals and ill-health of one spouse was a strong predictor of poor health in the other spouse. Respondents whose spouses recently had been ill were more likely to report ill health, than were
respondents whose spouses were healthy. Finally, depressed caregivers may pay less attention to their own self-care (Pruchno et al., 1990)

Although evidence for the influence of caregiving stress on physical health is equivocal, there is some indication that caregiving stress affects immune functions that may mediate physical illness. Kiecolt-Glaser, Glaser, Shuttleworth, Dyer, Ogrock & Speicher (1987) related immuno-suppression to chronic stress among family caregivers of dementia victims. A comparison of 334 caregivers of Alzheimer's disease patients with 34 matched controls showed that caregivers not only reported higher levels of depression, lower life satisfaction, and lower mental health, but also had poorer immune responses. These results are not attributable to the effects of nutrition, sleep or other health related behaviors. Some specific stress include the cognitive status of the patient, problem behaviors, the amount of surveillance, control and work required by the caregiver, the number of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADLs) in studies of caregivers.

Outcomes

The third domain of Pearlin's stress process are the outcomes. According to the authors (Pearlin, 1994; Pearlin et al., 1990; Pearlin et al., 1990), outcomes refer to the manifestations or results of stress. This refers to depression, anxiety, irascibility, cognitive disturbance, and physical health decline (Pearlin et al., 1981, 1985, 1994; Zarit et al., 1980; Thompson, Rose, & Lovett, 1993). In this study caregiver depression will be the outcome variable.

Depression

In Pearlin et al., (1990) stress model depression is seen as an outcome measure of the stress of caregiving. Depression has been the most frequently studied mental health symptom for AD caregivers (Schultz, O'Brien, Bookwala, & Fleussner, 1995). Evidence strongly supports the fact
that AD caregivers are more depressed than sociodemographically comparable individuals who are not caregivers (Coope, Ballard, Saad, Patel, Bentham, Bannister, Graham, & Wilcock, 1995; Fuller-Jonap & Haley, 1995; Rose-Rego, Strauss & Smyth, 1998; Schultz et al., 1995). Prevalent rates for depressive symptoms among dementia caregivers are reported to range from 28-55% (Schultz et al., 1995; Williamson & Schultz, 1995). When comparing 82 caregiver-patient dyads and 82 control group dyads for depression, Russo et al. (1995) found that 27% of the caregivers met criteria for a depressive disorder, and 20% had a major depressive episode during that time. In a comparable time period 10% of the controls met the criteria for at least one depressive disorder and 7% met criteria for major depression. (DSM IV, 1994).

Generally, two types of studies are aimed at assessing the mental health consequences of caregiving. The majority of published studies use standardized self-report inventories to measure psychiatric symptomatology such as depression. A second and more recent type of study is based on clinical assessment of the caregiver, and is aimed at identifying the prevalence of actual clinical cases based on standardized assessment procedures. One of the most popular standardized self-report scale used in caregiving studies is the Center for Epidemiologic Studies Depression Scale (CES-D, Radloff, 1977). Most studies using standardized instruments show elevated depression rates among caregivers when compared to either age- and gender-based population norms or non-caregiving control groups.

In five studies using the CES-D, scores ranged from 5.6 (Moritz, Kasl, & Berkman, 1989) to 28.9 (Stroller & Pugliesi, 1989). The modal score was approximately 17 (Pruchno et al., 1989). These researchers used the CES-D to measure depression in 315 spouse caregivers of AD patients. They found a mean score of 17 on the CES-D. They also found higher rates of symptoms of psychological distress, higher psychotropic drug use among females, higher rates of depressive
symptomatology; more negative affect, and wives more depressed than husbands. Non-clinical elderly populations typically score between 8 and 9, and the usual cut-off score on the CES-D for being at risk for clinical depression is 16 or over (Radoff, 1977).

In a study of 122 AD family caregivers (Goode, Haley, Roth, & Ford, 1998) it was reported that the caregivers Center for Epidemiologic Studies Depression Scale (CES-D) score did not significantly change over a one year period. Other research findings suggest that the depression seen in AD caregivers may be more transient in nature and reflect the feelings of grief, powerlessness, and despair common in people who suffered a non-death loss (Schulz, Visintainer & Williamson, 1990).

Studies using the CES-D support three general conclusions. First, the more severely impaired the patient, the greater the depressive symptomatology experienced by the caregiver. Second, females tend to be more depressed than males. Third, the more representative the sample is of a particular caregiving population, the lower the depressive symptomatology. Thus caregivers of mildly impaired patients report fewer symptoms than caregivers of moderately or severely impaired patients, and both wives and daughters report being more depressed than husbands and sons.

Caregivers are at increased risk when compared with the years before and after caregiving, with population norms, and demographically matched non-caregivers (Dura, Stukenberg, & Kiecolt-Glaser, 1990, 1991; Russo, Vitaliano, Brewer, Katon, & Becker, 1995; Schulz et al., 1995; Schulz, Visintainer & Williamson, 1990). Symptoms of depression in dementia patients have been found to greatly affect caregiver well-being. Drinka et al., (1987) studied depression in the caregivers of 127 elderly male patients. They found that 83% of these caregivers met the criteria
for major depression and that the overall level of patient depression significantly associated to severity of caregiver burden.

More recent research has also supported the fact that AD caregivers are more depressed than socio-demographically comparable individuals who are not caregivers (Schulz et al., 1995).

Research also confirms that spouse caregivers exhibit higher levels of depression and stress, lower levels of life satisfaction, and lower participation in social activities than other family caregivers (Schulz et al., 1995). Generally, spouse caregivers, who represent about 50% of all primary caregivers, are the most susceptible to adverse effects (Schulz et al., 1995; Stone, Cafferata & Sang, 1987). This heightened susceptibility may stem from the fact that spouses provide the most comprehensive care for dementia patients, maintain the caregiving role for longer periods, care for the most impaired individuals, and spend the most hours on caregiving tasks. The vulnerability of spouse caregivers may also stem from the greater likelihood of this group to have health problems associated with older adulthood, such as chronic illnesses and diminished physical and functional capacity (Neal, Ingersoll-Dayton & Starrels, 1997).

**Mediators**

The last and very important domain in this model is the mediators. It is virtually always observed in stress research that people exposed to seemingly similar stressors are affected by them in dissimilar ways (Pearlin, 1989, 1994; Pearlin et al., 1981, 1990). This is certainly the case in studies of caregivers. It is the mediators that are usually called upon to provide the explanation for the variability in outcome. Mediators are “those actions and resources that have the capacity to influence the direction of the stress process and to blunt the impact on the individuals” (Pearlin, 1994). Mediators will not account for all the variation found in caregivers’ response, but they do have a major explanatory role.
Coping and social support are undoubtedly the constructs most commonly regarded in stress literature. These two constructs are distinct, but they have similar functions in the stress process. They both regulate the effects of a stressful event. People tend to use both social support and coping. Social support in the form of informal and formal resources and the use of coping mechanisms may potentially moderate or buffer the effects of these stressors, strains, and outcomes throughout the stress process (Pearlin et al., 1990). Overall formal and informal supports are believed to mitigate the burdens of caregiving.

Analytic interest in these mediators in the study of caregivers is essentially the same as in the stress literature. That is we seek to learn if differences in coping resources, or in the use of social support can account for the fact that caregivers confronting equivalent life problems are unequally damaged by the problems? Why is it that some caregivers seem to fare better than others, though their circumstances may not be easier? (Pearlin et al., 1990)

There is growing evidence that personality traits are an important contextual factor in the caregiver stress process that may influence cognitive appraisal. Some caregivers may be more likely than others to appraise a particular caregiving situation as stressful, because of underlying personality traits and thus be more susceptible to subsequent distress and adverse health outcomes (Bookwala et al., 1998). Two specific personality traits; optimism and mastery have been linked to positive mental health outcomes among caregivers (Bookwala et al., 1998; Hooker, Monahan, & Bowman, 1998; Hooker et al., 1992). Alternatively, caregivers with high levels of expressed anger report a high level of burden (Vitiano, Russo, Young et al., 1992).

**Summary**

In summary, the Pearlin stress model provides a conceptual framework that identifies the four domains that make up the stress process: the background and context, the stressors, the outcomes
and mediators. Factors included in the domain of background and context, are demographic and ascribed characteristics of the caregiver, aspects of the dyadic relationship, and aspects of social and service environment. As unique individuals become caregivers, they are exposed to primary stressors including the objective factors of need for assistance with the Instrumental Activities of Daily Living (IADL) and personal care needs (ADL), cognitive changes and problem behaviors of the care recipient. These factors influence the caregiver's experience of subjective stress, including role overload and relational deprivation. Primary stressors may impact negatively on the caregiver and lead to secondary role and intrapsychic strains. These secondary strains of caregiving include constraints on other aspects of the caregiver's life, including family and occupational roles, social and recreational activities, and intrapsychic strains such as self-esteem, mastery, loss of self, role captivity, perceived competence and perceived gain from the caregiving experience.

The ultimate outcome of the caregiving stress process may include feelings of depression with accompanying physical and mental health changes. However, mediators such as social support and coping appear to have an important role in this variability. These mediators can enhance or reduce the likelihood of effective responses to the demands of caregiving.

At least part of the variability in coping with this responsibility has to do with the caregiver resources. Resources can act as mediators between the stressors and the negative outcomes of the caregiving situation. Personal resources encompass physical health, personality variables and coping strategies. Social resources refer to the breadth of the caregivers social network, awareness of caregiving support within this network, and the use of the support. Material resources cover access to suitable housing, medical supplies and equipment and are expressed most simply through financial well-being.
This general model of the caregiving stress process has guided much of the research on caregiving which has focused on identifying determinants of caregiver strain and interventions that can buffer the strain of caregiving and moderate its impact on family caregivers. Sense of humor is one of the positive personality resources that is possessed by people in varying amounts. This personality characteristic enhances psychological health and well being. Researchers generally assume that an individual with a good sense of humor will also possess desirable traits, such as greater optimism, self-acceptance, self-confidence, and autonomy (Kuiper & Martin, 1998). Humorous people are also thought to cope more effectively with stress, to generally experience less negative moods, such as depression and anxiety, to enjoy greater physical health and to have more positive relationships.

**Sense of Humor**

There is general agreement that a sense of humor is a highly desirable personality trait to possess. However, when we begin to ask what exactly researchers and lay people mean by “sense of humor” and how they conceptualize individual differences in this trait, we encounter a great deal of disagreement. Although everyone seems to recognize a sense of humor when they see it, no one seems to agree on how to define or explain it (Martin, 1998). Eysenck (1972) pointed out three possible meanings of sense of humor: 1) a person who laughs at the same things that we do (conformist meaning); 2) a person who laughs a great deal and is easily amused (quantitative meaning) and; 3) a person who is the “life and soul of the party,” telling funny stories and amusing other people (production humor).

Hehl and Ruch (1985) expanded on Eysenck's list noting that individual variation in sense of humor may relate to differences in: 1) the degree to which individuals comprehend jokes and other humorous stimuli; 2) the way in which they express humor and mirth, both quantitatively and
qualitatively; 3) their ability to create humorous comments or perceptions; 4) their appreciation of various types of jokes, cartoons, and other humorous materials; 5) the degree to which they actively seek out sources that make them laugh; 6) their memory for jokes or funny events; and their tendency to use humor as a coping mechanism.

The early empirical research using sense of humor as a mediator of stress was performed by Lefcourt, Martin and associates (Lefcourt et al., 1986; Martin et al., 1983; Martin, Kuiper, Olinger & Dance, 1993). They found evidence for stress-moderating effects of sense of humor. These studies demonstrated that individuals who use their sense of humor to cope are less adversely affected by stressful life events, as shown, for example by less increase in negative moods such as depression and anxiety (Martin et al., 1983).

One of the ways Martin et al. (1983) defined sense of humor was the degree to which individuals make use of humor in their coping with the stressful events in their lives. They used the Coping Humor Scale (CHS) to operationalize this definition. The CHS inquires as to whether subjects deliberately use humor to alter difficult situations, and by doing so, actively changed the stressful nature of the situation (Lefcourt et al., 1986). Nezu et al., (1988) found significant main effects and interactions between stress and humor in the prediction of depression. Depression scores were found to have increased with stress primarily among subjects with low scores on humor measures. Sense of humor also has beneficial effects as a coping strategy or defense mechanism (Martin, 1998). It may act directly on depression (Porterfield, 1987), or act as a buffer to the detrimental effects of psychological stress (Nezu et al., 1988).
Figure 2: The Proposed Hypothesized Model
There are several ways to evaluate the functions of sense of humor as a mediator of stress, but the most current efforts are confined either to looking at the direct relationship of the mediator (sense of humor) to an outcome (caregiver depression), or sense of humor’s ability to cushion the impact of the stressors (objective stressors of caregiving) on the outcome of depression. In the first case, the relationship of the mediators to the outcomes are evaluated independently of the stressors to which one is exposed. The second case reflects the ability of the mediator to regulate the relationship of the stressor to the outcome.

Lefcourt et al. (1986) examined more closely the processes by which humor may potentially reduce stress. In particular, they focused on the individuals’ cognitive appraisals over the course of a stressful experience. As detailed by Lazarus et al. (1984) a cognitive theory of stress proposes that the degree of stress experienced by a person's response to an event is determined to a large extent by the way the individual appraises the event. Thus they felt that some of the stress-buffering effects of humor may be due to differences in the types of appraisals that high and low scoring humor individuals make in response to potentially stressful situations.

Kuiper and Martin (1993) studied the cognitive appraisals of subjects before and after a midterm examination. They found that subjects with high, as opposed to low coping humor scores, were more likely to appraise the upcoming examination as a positive challenge, rather than a negative threat. In addition following the examination, they were more likely to adjust their expectations about the next examination in a more realistic direction. Kuiper et al. (1993) also found that individuals with higher scores on the CHS had higher levels of self-esteem, less discrepancy between their actual and ideal self-concepts, and greater stability in their self-concepts over time. The CHS was compared with responses on the Ways of Coping Scale (Lazarus & Folkman, 1964). The authors found the CHS to be positively associated with the
degree to which students appraised their exam as challenging rather than threatening both before and after the completing of the exam. In addition to appraisals of the exam, the CHS was found to be positively related to distancing and confrontative coping subscales from the **Ways of Coping Scale**. These latter findings suggest that persons who use humor as a coping mechanism are apt to engage in problem-focussed coping with minimal emotional responses during encounters with stress.

Some humor researchers report that humor can have direct physiological benefits, such as increasing blood circulation, muscle relaxation, aiding digestion, improving immunity and facilitating recovery from surgery (Berk et al., 1989; Borins, 1995; Cousins, 1979; Fry 1992; Hulse, 1994; McCaffery, 1990; Ziegler, 1995). Laughter may be good exercise. For example, Fry et al., (1988) estimated that the impact on the heart of twenty minutes of hearty laughing is comparable to three minutes of hard rowing. Not only is the cardiac muscle stimulated with laughter, but also faster heart rate and higher blood pressure accompany the laughter episode. Following laughter they both drop in relation to pre-laughter baseline rates (Fry et al., 1988). For sedentary older adults, exposure to humor may lower the risks of heart attacks (Williams, 1986).

Humor is widely recognized as one highly effective coping strategy among patients and health professionals in a variety of settings (Burgener, Shimer & Murrell, 1993; Lefcourt et al., 1986; Simon, 1988; & Tennant, 1990). Sense of humor has been used as an intervention with both Alzheimer's patients and unimpaired elderly patients, and professional caregivers. Humor has been viewed as “one of the most powerful and pervasive ways that elders express their individuality” (Burgener et al, 1993). Burgener and colleagues observed the interactive behaviors of professional caregivers (nurses) and demented elders during three caregiving situations. The subjects included 58 caregivers, including 38 certified nursing assistants, 14 licensed practical
registered nurses; and 58 cognitively impaired elderly patients in institutional settings. Not only
did elder subjects in this study express themselves through humor, but they responded positively
to humor by staff.

Humor is also known to be extremely useful among caregivers of individuals with dementia
who must deal with a constellation of problems over the long term (Haley et al., 1987). In a
qualitative study (Sparks, Travis & Pecchioni, 2000) 23 family caregivers were interviewed using
a semi-structured interview format to explore their experiences managing medication
administration and providing long-term care to frail elderly family members. The caregivers often
included smiles, jokes, and “punch lines” in their stories of behavioral problems that complicated
medication administration schedules. Adult children frequently used humor to describe their role
reversal with aged parents and the parent’s forgetfulness, incontinence, or the inability to dress
without assistance. Humor in conversation often reveals what people find most disconcerting (du
Pre, 1998). Use of humor allows the caregivers to release nervous energy about the interview
process and the recall of difficult caregiver events.

**Research Model**

In the proposed research the impact of coping humor and other psychosocial variables on
caregiver burden will be investigated. This will be done using a hierarchal multiple regression
model in four different stages following Pearlin's stress model). The background/context
variables were age and income. The primary stressor was "Functional Status" which combined the
Activities of Daily Living (ADL) and the Instrumental Activities of Daily Living (IADL). These
primary stressors led to secondary stressors, which in this study were caregiver burden and
perceived physical health. The mediator was humor. The outcome variable was depression.
CHAPTER III
METHODOLOGY

This study will empirically examine the use of coping humor in spousal caregiving. The purpose of this study is to explore the impact of humor and other psychosocial variables in decreasing caregiver depression. We will test the following three hypotheses:

Research Hypotheses
1. Spousal caregivers of people with Alzheimer's disease who use humor in coping will experience less depression than those who do not use humor as a coping mechanism.
2. Spousal caregivers of people with Alzheimer's disease who experience higher levels of caregiver burden are more likely to experience depression than those with less caregiver burden.
3. Spousal caregivers of people with Alzheimer's disease who self-report that they are in poor health are more likely to experience more depression than those who report that they are in good health.

In addition to these three hypotheses, the overall question is what combination of contextual, stressor, and mediating variables are the best predictors of caregiving depression within this sample of caregivers.

Participants

This study includes a purposive sample of spousal primary caregivers of patients with dementia, who are the primary caregiver. To be considered as a subject, the primary caregiver had to be a spouse who was residing in the home setting with the AD patient on a full time basis.
The care recipient had to meet the diagnostic criteria of irreversible dementia as determined by a psychiatrist, neurologist or other qualified medical specialist. Finally, the caregiver had to agree to participate in the study and sign an informed consent form, as reviewed and approved by the University of Georgia Institutional Review Board.

The original plan had been to recruit subjects from the various support groups sponsored by the Georgia Chapter of the Alzheimer’s Association. The researcher had hoped to visit the support groups and recruit participants from among the attendees. In exchange for the volunteer support, the researcher would provide refreshments, as well as present a humorous program. It soon became apparent that many of the support group leaders were opposed to having the researcher attend the support group, due to confidentiality concerns and the fact that they felt that the participants would be more inhibited. Some leaders who were contacted did not feel that the group members would want to discuss humor. They felt that the members come to the group to discuss emotional issues, and did not want take the time away from them.

Consequently, adult day care centers in Georgia and North Carolina were chosen as the principal recruitment source. Churches, Alzheimer’s Associations, Area Agencies on Aging and community referrals were also used as referral sources.

**Design and Procedure**

This study was a variable relationship study and employed a cross-sectional survey design to assess data on the characteristics of spousal caregivers of people with dementia. Existing standardized instruments testing humor, caregiver burden and depression, as well as demographic data were incorporated into a 72 question Caregiver Survey on Humor.
The procedure used for getting the sample was the following: The researcher called each adult day care center (or church, etc.) and explained the research to head staff (directors, social workers, etc.). They were asked for permission for their center to participate in the study. Staff members agreed to identify clients who had dementia, who still lived at home, and whose primary caregiver was their spouse. If approval was given, the survey packets were mailed to the adult day care center. Then the packets were either given to the care recipient or sent home to the spousal caregiver. All completed surveys were stamped and returned to researcher. Subjects were given or mailed a survey packet by day care staff. This procedure involved over fifty different sites in two states.

**Instruments**

The Caregiver Survey on Humor (see Appendices) was developed for this study. It contains the standardized scales used in the study. They are the Center for Epidemiologic Studies Depression Scale (CES-D), Zarit Revised Caregiver Burden Inventory (ZBI), and the Coping Humor Scale (CHS). The survey also included questions about perceived physical health, needed assistance by the demented spouse (ADL & IADL), social support and caregiver subjective feelings. Lastly, the survey asked the participants to provide demographic information (i.e. age, gender, race, education, religion, employment, income, length of time caregiving social support, etc) and questions related to their subjective stress, including depression and perceived health.

The following is a description of the standardized measures included:

**A. Center for Epidemiologic Studies- Depression Scale** (CES-D; Radloff, 1977)

Depression was measured by the CES-D, which was designed to measure current levels of symptomatology indicative of depressive reactions to events in the person's life in a non-psychiatric sample (Radloff, 1977). The CES-D is a 20 items scale in which caregivers report
their reactions to events. It measures current level of depression, with emphasis on the affective component (depressed mood). Respondents report how often they experienced each symptom in the past week on a 3 point scale ranging from “0 = rarely, 1 = some of the time, 2= moderate amount of time, or 4= Most or all of the time.” The potential scores were 0- 60 with higher scores indicating greater depression. The scale is easily scored by reverse-scoring items 4, 8, 12, and 16 and then summing scores across all items. The standard cutoff score of 16+ on the CES-D is used to classify individuals as “symptomatic” (i.e. at risk for depression).

The CES-D has very good reliability with good internal consistency and alphas of roughly .85 for the general population and .90 for psychiatric populations. The split-half reliability coefficients are .77 to .92 (Radloff, 1977). The scale has fair stability with test-retest correlations that range from .51 to .67 when tested over from two to eight weeks (Radloff, 1977). It has excellent concurrent validity correlating with a number of other depression and mood scales.

B. Zarit Revised Caregiver Burden (ZBI) (Zarit & Zarit, 1987)

The ZBI is used to measure caregiver burden. It is a 22-item, self-report inventory that asks about feelings of burden such as decreased personal time, diminished social life, or embarrassing behavior. Examples of questions include “Do you ever feel embarrassed over your relative's behavior?, “Do you feel strained when you are around your relative? Caregivers will mark how frequently they experience each negative reaction on a 5-point scale, ranging from 0=never to 4=nearly always. Individual item scores are summed to yield a total burden score with a possible range of 22 to 110, with higher scores indicating greater burden. The BI has high internal consistency with an alpha of .91, and test-retest reliability with an alpha of .71.

C. Coping Humor Scale (CHS)
One component of sense of humor that is viewed as particularly important, in the context of a positive or healthy personality, is the tendency to maintain a humorous perspective in the face of adversity. The CHS is a short 7-item scale with scores from 0 to 28. It contains items such as, “I have often found that problems have been greatly reduced when I tried to find something funny in them”, and “I can usually find something to laugh about, even in trying situations”. Subjects rate the degree to which they agree or disagree with each of the items, on a 4-point Likert type scale. It has a 4-point Likert scale with (1=strongly disagree, 2=mildly disagree, 3=mildly agree, and 4=strongly agree). Questions 1 and 4 are reversed in scoring. Subjects are instructed to rate the degree to which they agree or disagree with each item, and a total score is computed by summing across items. A high score indicates better ability to use humor for coping purposes.

Internal consistency analyses have generally produced Cronbach alphas in the .60 to .70 range (Lefcourt et al., 1986, p. 29). In addition, Overholser (1992) has found a test-retest reliability of .80 over a 12 week period with the CHS. Validity was established by correlating test scores with friends subjects tendencies to use humor in stressful situations.


The Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) were considered the primary stressors in this study. They were merged into a new variable called “Functional Status.” Functional status is usually conceptualized as the ability to perform self care, self-maintenance and physical activities. The majority of indices of physical health and some psychological scales build their concept of health on the concept of functioning. The items composing these two scales were combined and incorporated into a list and incorporated into the
survey. Subjects were asked to check either yes or no, depending on whether or not they had to provide assistance to their spouses. Activities for which this information is gathered are fairly standard, and include both those involved in satisfying daily needs (ADL) and instrumental logistical needs (IADL) (Katz, et al., 1963; Lawton et al., 1969). It can be assumed that the more dependent impaired persons are, the greater the sheer amount and difficulty of work caregivers must perform for them.


This scale is an ordinal index designed to assess the physical functioning of elderly and chronically ill patients. A dichotomous rating (Dependent/Independent) of six ADL functions (in order of decreasing dependency) bathing, dressing, going to the toilet, transferring from bed to chair, continence, and feeding is rated on a 3 point scale of independence. Clinicians typically use this scale to detect problems in performing activities of daily living. Since this scale was originally developed, it has been modified and simplified. However, it has consistently demonstrated its utility in evaluating functional status of the elderly population (Shelley & Wallace, 1998). Despite its widespread use, there is little evidence of validity of the measure in the literature. However, the scale is known to predict the long-term course and social adaption of patients with a number of conditions, including strokes and hip fractures, and was used in rheumatoid arthritis (Katz, 1963).


This scale was also used to measure physical activity. The instrumental activities of daily living (IADL) were designed to capture more complex life activities (Rogers and Miller, 1999), and include light housework, laundry, meal preparation, transportation, grocery shopping,
using the telephone, medical management, and money management. The IADL are proxy measures that can be used to identify individuals with cognitive impairments. While cognitive impairment may lead to limitations in the ability to perform all ADL, those that are generally considered to be most closely related to cognitive impairment are limitations in a person's ability to manage medications, finances, or to use the telephone (Spector, 1994). Like the Index of ADL, it was difficult to find psychometrics on the IADL. However, this scale is used for its clinical usefulness. Limitations in ADL and IADL are now commonly used to estimate the size of the population with disabilities. ADL and some IADL were also used to establish eligibility for public and private long-term care programs, services, and benefits.

**Statistical Analysis**

The hierarchical multiple linear regression model which was used in this study allowed for the assessment of the relative importance of the various predictor variables (age, income, length of time of caregiving) objective stress (functional status), subjective stress (caregiver burden and perceived health) and sense of humor and in their contribution to the dependent variable (depression). With the multiple regression model we ascertained the relative effect of each of these predictor variables, controlling for all the other variables, and assessed the overall goodness of fit of the model to the data. The aim of using several predictor variables was to reduce even further our errors of prediction. According to this model, explanatory variables were looked at using a hierarchical multiple regression analysis. The variables were added in the following order: background and contextual variables, primary stressors, secondary stressors and finally the mediators. These were added to see the effect that each variable has in predicting depression. The purpose of this study was to test the effect of humor on caregiver depression after controlling for the other variables.
Independent variables such as age (Pruchno et al. 1989), gender (Anthony-Bergstone et al., 1995; Zarit et al., 1986), education (Biegel et al., 1991), objective stress (ADLs and IADLs) (Gallagher et al., 1989; Miller et al., 1992; Zarit et al., 1986), social support (Allen, 1994; Miller et al., 1992; Pearlin, 1989, 1994; Pearlin et al., 1981, 1990), burden and perceived physical health (Chernoweth & Spencer, 1986; Pruchno & Resch, 1989; Satariano et al., 1984; Schultz, et al., 1990; Stone et al., 1987), length of time of caregiving (Gaynor, 1990; Zarit et al., 1986) have been shown in the literature to explain the variability of caregiver burden and depression.

Multiple regression is a common type of analysis in caregiver research (Haley et al., 1987; Lieberman & Fisher, 1995; S.J Majerovitz, 1995). It has been used by Haley and colleagues to describe how caregiver's appraisals, coping appraisals and social support and activity predicted individual differences in caregiver outcome even when the degree of stressors was taken into account. In order to account for the multivariate relation between the four classes of predictor variables to each of the outcome variables, a multiple regression was performed.

Human Subject Review

Prior to data collection approval for this project was obtained from the University of Georgia Institutional Review Board. All the participants signed the IRB approved consent forms. Risks were deemed to be minimal and there was no deception involved.
CHAPTER IV

RESULTS

The statistical analysis for this study was conducted using version 9.0 of SPSS Windows. Descriptive statistics were used to summarize the demographic caregiver characteristics and resources, including the background/contextual variables (age, income and length of time caregiving), primary stressors (functional status), secondary stressors (caregiver burden and perceived physical health), mediators (humor) in their contribution to the outcome variables (depression). Multiple regression analysis was used to account for (predict) the variance in an interval dependent variable, based on linear combinations of interval, dichotomous, or dummy independent variables. Multiple regressions can establish that a set of independent variables explain a proportion of the variance in a dependent variable at a significant level (significance test of R square), and can establish the relative predictive importance of independent variables (comparing beta weights).

Univariate Analysis

Demographic Data

Univariate analysis was used to summarize the characteristics and resources of the participants (see Table 1). There were 86 spousal caregivers in this study: 63 females (72.8%), and 23 males (26.4%). A descriptive summary of the sample demonstrated that white women were the predominant responders. In this sample 71 people were White (81.6%) with only 8 African-Americans (9.2%), 1 Hispanic (1.1%) and 5 (5.7%) identifying themselves as “other.”]
Table 1:

Sample Demographic Characteristics: Age, Gender, Ethnicity, Education, Employment Status, Income, Length of Time Caregiving and Support.

<table>
<thead>
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<th>Variables</th>
<th>Category</th>
<th>Number (%)</th>
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<tr>
<td>Gender</td>
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<td>Other</td>
<td>10 (11.5)</td>
</tr>
<tr>
<td>Education</td>
<td>&lt;HS Grad</td>
<td>6 (6.9)</td>
</tr>
<tr>
<td></td>
<td>HS Grad</td>
<td>34 (39.1)</td>
</tr>
<tr>
<td></td>
<td>Associate Degree</td>
<td>10 (11.5)</td>
</tr>
<tr>
<td></td>
<td>Bachelor Degree</td>
<td>16 (18.4)</td>
</tr>
<tr>
<td></td>
<td>Graduate</td>
<td>19 (21.8)</td>
</tr>
<tr>
<td>Income</td>
<td>&lt;$10,000</td>
<td>2 (2.3)</td>
</tr>
<tr>
<td></td>
<td>$10,000-19,999</td>
<td>9 (10.3)</td>
</tr>
<tr>
<td></td>
<td>20,000-29,999</td>
<td>19 (21.8)</td>
</tr>
<tr>
<td></td>
<td>30,000-39,999</td>
<td>11 (12.6)</td>
</tr>
<tr>
<td></td>
<td>40,000-49,999</td>
<td>11 (12.6)</td>
</tr>
<tr>
<td></td>
<td>50,000-74,999</td>
<td>7 (8.0)</td>
</tr>
<tr>
<td></td>
<td>75,000+</td>
<td>16 (18.4)</td>
</tr>
<tr>
<td>Employment</td>
<td>Not Employed or Retired</td>
<td>75 (86.2)</td>
</tr>
<tr>
<td></td>
<td>Employed Full-time</td>
<td>6 (6.9)</td>
</tr>
<tr>
<td></td>
<td>Employed Part-time</td>
<td>3 (3.4)</td>
</tr>
<tr>
<td>Length of Time Caregiving</td>
<td>6 mos-1 year</td>
<td>5 (5.7)</td>
</tr>
<tr>
<td></td>
<td>1-2 years</td>
<td>10 (11.5)</td>
</tr>
<tr>
<td></td>
<td>3-4 years</td>
<td>25 (28.7)</td>
</tr>
<tr>
<td></td>
<td>5 years+</td>
<td>45 (51.7)</td>
</tr>
<tr>
<td>Support</td>
<td>No</td>
<td>25 (28.7)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>60 (69.0)</td>
</tr>
</tbody>
</table>
The subjects ranged in age from 51 to 86 years. The mean age for the caregivers was 72.80 years (SD = 7.42). The sample included 53 Protestants (60.9%), 10 Catholics (11.5%), 12 Jews (13.8%), and 11 people identifying themselves as “other” (11.5%). Seventy-five of the respondents were either not employed or retired, (86.2%) and 9 people were still employed (10.3%). Thirty-four caregivers graduated high school (39.1%), 16 had a 4 year college degrees (18.4%), and 19 obtained graduate degrees (21.8%). The length of time as primary caregiver was quite long with 40 (35.5%) being in this role for at least 3 years and 45 (50%) being in this role 5 years or more. Only 11 people (12.6%) had an annual income under $20,000, 7 people (8%) over $50,000, and 16 (18.4%) had an annual income of $75,000 or more.

Summary of Major Independent, Dependent and Mediator Variables

The primary stressors in this study were the ADL and IADL, which were combined in a new variable called “Functional Status”. The ADL include such personal assistance to the care recipient as feeding, bathing, continence, dressing, toileting, and transfer. The IADL include tasks such as helping with the telephone, shopping, preparing meals, giving medicine, handling money, driving and doing laundry. For the ADL the caregivers were asked, “Do you have to help your spouse with any of the following tasks?” These scores were recoded as Yes = 1 No = 0. For the IADL the question was, “Is your spouse able to do the following activities without assistance?” The scores were reversed to make it equal to the ADL (Yes = 0, No=1). The minimum score was 0. The maximum was 13. The mean was 9.81 (SD = 2.44) (see Table 2).

Caregiver burden was one of the secondary stressors in this study. It was measured using the Zarit Caregiver Burden Inventory (ZBI), which is a 22 item questionnaire with a Likert response format. The possible scores range from 22-110. There is no clinical cut off score,
however the higher the score, the higher the burden. The minimum score was 30 and the maximum was 94. The mean was 62.23 (SD = 13.76).

Perceived physical health was the other secondary stressor. (see Table 2) Perceived health was covered by a single question on the survey, “Would you say your current health is poor, fair, good, or excellent?” In scoring 1= poor, 2= fair, 3= good, and 4= excellent.

Depression was the outcome measure in this survey. It was measured by the Center for Epidemiologic Studies-Depressed Mood Scale (CES-D). The standard cutoff score of 16+ on the CES-D is used to classify individuals as “symptomatic” (i.e. at risk for depression). Eighty-six participants had valid depression scores. The possible range of scores on this scale is 0-60. This minimum score was 30 and the maximum score was 94. The mean 13.15 (SD= 8.21).

Humor was the mediator in the study. It was measured by the Coping Humor Scale (CHS), which inquires as to whether subjects deliberately use humor to alter difficult situations. Eighty-six subjects had valid humor scores. This 7- items scale has a possible range of scores of 0-28 points with a higher score indicating stronger ability to use humor to cope. The minimum score from respondents was 13 and the maximum score was 27. The mean was 20.27 (SD = 3.36).

**Bivariate Analysis**

The Pearson Correlation Coefficient is a numerical index that reflects the linear relationship between two variables. It allows us to understand whether variables tend to move in the same or different directions when they change. Prior to running a multiple regression analysis Pearson Correlation Coefficients were calculated among the independent variables and between the dependent and independent variables.
Table 2:

Descriptive Statistics of Major Variables

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Total Score</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humor</td>
<td>86</td>
<td>28</td>
<td>13</td>
<td>27</td>
<td>20.27</td>
<td>3.36</td>
</tr>
<tr>
<td>Depression</td>
<td>86</td>
<td>60</td>
<td>0</td>
<td>44</td>
<td>13.15</td>
<td>8.21</td>
</tr>
<tr>
<td>Burden</td>
<td>86</td>
<td>110</td>
<td>30</td>
<td>94</td>
<td>62.23</td>
<td>13.76</td>
</tr>
<tr>
<td>Functional</td>
<td>86</td>
<td>13</td>
<td>0</td>
<td>13</td>
<td>9.81</td>
<td>2.65</td>
</tr>
</tbody>
</table>

A relatively weak positive correlation was found between functional status (need for assistance in the ADL and IADL by the caregiver) and the length of time caregiving ($r = .357$, $p = .001$). This means that the longer the caregiving time, the more the caregiver has to assist the care recipient on ADL and IADL. There was a weak negative correlation between current perceived health and caregiver burden ($r = -.238$, $p = .029$). This can mean that the more the caregiver perceives his physical health to be good, the less he/she will experience burden. There were no more significant correlations between the independent variables.

A weak negative correlation was found between humor and depression $r = -.185$, $p = .08$. Even though this is not a high correlation, the fact that it is in an inverse direction of depression is an important fact to understand. It means that when humor increase, caregiver depression
decreases and vice versa. A moderate negative correlation was found between humor and caregiver burden ($r = -.353, r = .001$), in that when humor increases burden decreases (see Table 2).

It was difficult to decide between depression and burden when choosing a dependent variable. When a correlation was run on depression and burden, a moderate to strong correlation was found ($r = .481, p = .000$).

**Multiple Regression**

Hierarchical stepwise multiple regression analysis was used to test the impact of the various predictor variables on caregiver depression. It was also used to test the three hypotheses.

1. Spousal caregivers of people with Alzheimer's disease who use humor in coping will have less depression than those who do not use humor as a coping mechanism.
2. Spousal caregivers of people with Alzheimer's disease who have higher levels of caregiver burden are more likely to experience depression than those with less caregiver burden.
3. Spousal caregivers of people with Alzheimer's disease who self-report that they are in poor health are more likely to have more depression than those who report that they are in good health.

This type of regression is similar to stepwise regression, but in this case the researcher, not the computer determines the order of entry of the variables. This is suited for theory testing. In this model Pearlin's stress model is the theoretical framework. The significance level is .05 and one-tailed probability estimates were used, because all of the hypotheses were one directional. SPSS output generally includes a two-tailed alpha level (Cronk, 1999). Cronk states that, “If we have a one-tailed hypothesis, but our SPSS output gives a two-tailed significance result, we can take the significance level in the output and divide by two. Thus if our output indicates a
significance level of .84 (two-tailed), but we have a one-tailed hypothesis, we can report a significance level of .042 (one-tailed)." (p.52) A two-tailed test attempts to determine whether or not any difference, either positive or negative exists. On the other hand, a one-tailed test examines the difference in a specific direction.

The independent variables were entered into the regression following the order of Pearlin’s stress and coping model, with depression as the dependent variable. The variables were entered into the regression in four stages, and produced 4 different models (see Table 3).

1- Model I- Background and contextual variables: age, income, length of time caregiving

2- Model II- Primary Stressor: Functional Status (ADL +IADL)

3- Model III- Secondary Stressors: Caregiver Burden, Perceived Physical Health

4- Model IV- Mediator: Humor

Table 3:

<table>
<thead>
<tr>
<th></th>
<th>Humor</th>
<th>Depression</th>
<th>Burden</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Correlation</strong></td>
<td>1.00</td>
<td>-1.85</td>
<td>-.355**</td>
</tr>
<tr>
<td><strong>Sig</strong></td>
<td>.08</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-.185</td>
<td>1.000</td>
<td>.481</td>
</tr>
<tr>
<td><strong>Correlation</strong></td>
<td>.040</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Burden</td>
<td>.353**</td>
<td>.481**</td>
<td>1.000</td>
</tr>
<tr>
<td><strong>Correlation</strong></td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td><strong>P</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The background and context variables, income, age and length of caregiving were entered in Model 1. None of these variables had a statistically significant effect on depression (F(3, 71) = .133 $p > .05$). R square was .006. Age had a beta of 2.29, a $t$ score of .17 and a significance of .86 (2 tailed) and .43 (1 tailed). Income had a beta of -.33, a $t$ score of -.61 and a significance level of .55 (2 tailed) and .27 (1 tailed). Length of time caregiving had a beta of 2.78, a $t$ score of .03 and a significance of .98 (2 tailed) and .49 (1 tailed). None of these variables were statistically significant. Other background variables such as gender, education, religion, ethnicity and employment were previously tested and did not have a significant effect on depression. None of these predictor variables had a statistically significant effect.

In Model 2 ADL and IADL, the primary stressors were combined into one variable called “Functional Status”. The model did not have a statistical significant effect on depression (F (4, 70) = .100 $p < .05$) with a R square of .006. Age had a beta of 2.18, a $t$ score of .16, and a significance level of .87 (2 tailed) and .43 (1 tailed). Income had a beta score of -.34, a $t$ score of -.61, and a significance level of .55 (2 tailed) and .27 (1 tailed). Length of time caregiving had a beta of -6.07, a $t$ score of -.01 and a significance level of .99 (1 tailed) and .49 (2 tailed). Functional status had a beta of 3.8, a $t$ score of .09 and a significance level of .93 (1 tailed) and .46 (1 tailed). None of these variables had a statistically significant effect on depression.

Model 3 was used to test both Hypothesis # 2 (Spousal caregivers of people with AD who had increased symptoms of caregiver burden, are more likely to have higher levels of depression, than those with less caregiver burden), and Hypothesis # 3 (Spousal caregivers of people with AD who self-report that they are in poor health, are more likely to experience more caregiver burden, than those who report that they are in good physical health). This model saw the addition of the
secondary stressors; caregiver burden and perceived health. This was the first statistically significant model (F (5, 67) = 4.32 p< .05) with R square of .28. Age had a beta of -6.4, a t score of -.05, and a significance level of .96 (2 tailed) and .48 (1 tailed). Income had a beta of -2.8, a t score of -.06 and a significance level of .96 (2 tailed) and .48 (1 tailed). Length of time caregiving had a beta of -.76, a t score of -.77, and a significance level of .45 (2 tailed) and .22 (1 tailed). Functional status had a beta of -.34, a t score of -.86, and a significance of .32 (2 tailed) and .16 (1 tailed). Burden had a beta of .33, a t score of 5.03 and a significance of .000. Perceived health had a beta of .77, a t score of .89 and a significance of .39 (2 tailed) and .19 (1 tailed). Burden was the only independent variable to have a statistically significant effect on depression.

The findings support a positive relationship between caregiver burden and depression as stated in Hypothesis 2 and the null hypothesis was rejected. However, the findings do not support a relationship between perceived health and depression as shown in Hypothesis 3, and we were not able to reject the null hypothesis.

Model 4 was used to test Hypothesis # 1. Spousal caregivers of people with AD who use humor in coping will experience less depression, than those who do not use humor as a coping mechanism. This model saw the addition of the mediator variable humor. The result, like that of the previous model, was statistically significant F (5, 69) = 4.116 p<.05. R square is .278. Age had a beta of -77.25, a t score of -.06, and a significance level of .95. Income had a beta of -1.24, a t score of -.03, and a significance level of .98 (2 tailed) and .49 (1 tailed). Functional status had a beta of -.38, a t score of -.86, and a significance level of .39 (2 tailed) and .19 (2 tailed). Length of time caregiving had a beta of -.78, a t score of -.78 and a significance level of .44 (2 tailed) and .22
Table 4:

Multiple Regression (Outcome Variable – Depression)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>t-value</td>
<td>P2</td>
<td>P1</td>
</tr>
<tr>
<td>Background</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>2.29</td>
<td>.17</td>
<td>.86</td>
<td>.43</td>
</tr>
<tr>
<td>Income</td>
<td>-.34</td>
<td>-.61</td>
<td>.55</td>
<td>.27</td>
</tr>
<tr>
<td>Length of Time Caregiving</td>
<td>2.78</td>
<td>.03</td>
<td>.98</td>
<td>.49</td>
</tr>
<tr>
<td>Primary Stressors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional Status</td>
<td>3.75</td>
<td>.09</td>
<td>.93</td>
<td>.46</td>
</tr>
<tr>
<td>Secondary Stressors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caregiver Burden</td>
<td>.34</td>
<td>5.03</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Perceived Health</td>
<td>.77</td>
<td>.89</td>
<td>.38</td>
<td>.19</td>
</tr>
<tr>
<td>Mediator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humor</td>
<td>6.22</td>
<td>.22</td>
<td>.83</td>
<td>.83</td>
</tr>
</tbody>
</table>

R square = .006  R square = .066  R square = .28  R square = .28
F = .133  F = .100  F = 4.32  F = 3.66
P = .94(2) .47(1)  P = .89(2) .44(1)  P = .001***  P = .002**
Burden had a beta of .34, a t score of 4.74 and a significance level of .000. Humor had a beta of 6.22, a t score of .22 and a significance level of .83 (2 tailed) and .41 (1 tailed). The hypothesized relationship between humor and caregiver depression was not supported in this analysis and we failed to reject the null hypothesis.

Model 3, without humor, was the best model for the prediction of caregiver depression. This model included age, income, length of caregiving, functional status, caregiver burden, and perceived health. By adding Model 4 we had very little change. In fact the R square remained the same at .28. The statistical significance level dropped from .001 to .002. If one follows the rule of parsimony in statistics, it was unnecessary to add another variable.

According to the above finding humor was not a mediator of caregiver depression. However, as we saw previously, there was moderate negative correlation found between humor and depression (r = -.185, p = .020), and between humor and caregiver burden (r = -.353, p = .0010), in that when humor increases, both caregiver depression and caregiver burden decrease. Therefore, humor on some level helps decrease depression.

The same multiple regression analysis was run on caregiver burden as on depression, using the same variables and entered in the same order. Depression was substituted for burden. The first two models were not statistically significant. Model 3, using depression as a secondary stressor was significant (F (6, 67) = 6.822, p<.001). Depression was the only statistically significant variable. It had an R square of .379. When humor was added in Model 4, it raised the R square to .445. The model was also significant like in the case of depression (F (7, 66) = 7.550, p<.001). Humor had a beta of -1.099, a t score of -2.79 and a significance level of .007.
CHAPTER V

DISCUSSION

This study examined the influence of various psychosocial independent variables in impacting caregiver depression among spousal caregivers of people with dementia. It also tested the variable humor as a mediator of depression. The study used Pearlin's model of stress and coping as its theoretical base. Independent variables were added to the regression in the same order as delineated by Pearlin and associates: 1. background variables; 2. primary stressors; 3 secondary stressors, and 4. mediators. Results indicated that caregiver burden was the only variable to have a statistically significant effect on caregiver depression. According to this analysis, Model 3 without the addition of humor was the best predictor of depression.

Other independent variables such as age, gender, education, religion, employment income, religion, ethnicity, length of caregiving and support were found to have an insignificant impact on depression. However although not individually significant, age, income, length of time caregiving, and functional status all had a small negative relationship with caregiver depression.

It was somewhat surprising that gender made no difference. Much of the previous caregiver research had shown that the consequences of caregiving and its demands are different for men and women (Bookwalla et al., 2000; Miller et al., 1992; Stoller, 1990; Yee, & Schulz, 2000). It was found that women, as compared to men reported more burden, stress and depression. Women spend slightly more hours providing care, and are more likely carry out personal care activities. Men are more likely to use more respite care and help ( Allen, 1994; Montgomery & Kosloski, 2000; Pruchno & Resch, 1989 ).
Spouse caregivers represent about 50% of all primary family caregivers. They are the most susceptible to the adverse mental and physical health outcomes (Schulz et al., 1995; Stone, Cafferata & Sangl et al., 1995). Comparisons with other family caregivers on symptoms of clinical depression could not be made. It would be impossible to compare them with other studies of family caregivers, since many of these studies combined both adult children and spouses as primary caregivers. The mean of this sample was 72.8 years of age. It was therefore difficult to judge the role of age, except to note that a third of the sample had symptoms of clinical depression. Research has shown that an older spouse is most likely to be caring for an impaired community-dwelling older adult (Schultz et al., 1995). Spouses are more prevalent among caregivers over 65 than any other group.

Cultural beliefs can also help shape responses to feelings of burden, and one's willingness to take care as well as help influence caregivers' beliefs about their filial obligation, duty, and reciprocity (Lawton, Rajagopal, Brody, & Kleban, 1992). These cultural beliefs can set the stage for caregiving, because they influence and shape perceptual, explanatory and behavioral options for groups in their response to illness and dependency (Angel & Thoits, 1987). The present study, like many others lacked minority caregivers, and was predominantly White.

Merrill (1997) makes the point that recruitment of minority caregivers is clearly challenging. This proved to be the case in this research. Researcher attempted to recruit participants from African American, Hispanic and Asian groups, but did not have much success. Ethnicity and religion did not have a significant impact on depression in this study. There may not have been enough minority caregivers to show any statistical differences between the different cultures surveyed.
Demographic and background control variables, including age, socioeconomic status, education, and caregiver health are salient to any model of caregiver stress and coping (Biegel, Sales, and Schulz, 1991). Older caregivers, females, spouses, caregivers of lower economic status, and less education are particularly susceptible to the stress of caregiving (Biegel et al., 1996). According to the present study, age, gender, economic status, and education had no statistically significant effect on caregiver depression. Most of the respondents had incomes that allow them to purchase services such as respite, home health assistance and adult day care. Most of them were quite educated. Despite this there was still a great amount of depression among the spousal caregivers. This is probably due to the fact that we are dealing with spousal relationships that include such things as relational deprivation, change of martial roles, which affects the entire marriage and their way of life. Education, income, age, and gender may take a back seat to such a devastating situation.

Of all the predictor variables examined in the study, caregiver burden was found to be the most significant predictor of depression. This seems to be the case in most of the caregiver literature. Caregiver burden can be viewed as containing two kinds of stress, objective stress and subjective stress. Objective primary stress such as relative's behavior problems (e.g., wandering and aggression) have been related to caregivers' psychological distress particularly depression (Biegel et al., 1991; Schulz et al., 1995).

Research indicated that the caregivers' subjective interpretation of caregiving tasks has a stronger impact on caregiving well being than on the actual tasks themselves (Aneshensel, Pearlin, Mullan, Zarit & Whitlatch, 1995; Haley, Levine, Brown & Hughes, 1987; Ory et al., 2000; Schulz et al., 1995; Zarit et al., 1986). Subjective primary stressors such as feelings of being
captive in the caregiver role and overloaded by caregiving responsibilities are related to caregiver depressive symptomatology over time. This study showed that the actual ADL and IADL performed by the spouses, were not as important as the perception of the situation.

Research has consistently linked increased caregiver burden with increased depression. McCallion, Toseland & Diehl (1994) found reports of depression ranging from 27% to 52% in caregivers. They also found evidence in the literature that caregivers have more anxiety, guilt, self blame, and psychosomatic illnesses than the general population. Caregiver depression has been linked cross-sectionally to multiple aspects of primary stress. In this study depression was measured by the CES-D, which was designed to measure current levels of symptomatology indicative of depressive reactions in a nonpsychiatric sample. The usual cut-off score on the CES-D for being at risk for clinical depression is 16 or over. This study validates the fact that dementia caregiving is associated with depression. Of the 86 participants, 29 (33.3%) scored over 16 on the scale. This means that 1/3 of the subjects were at risk for clinical depression.

**Implications for Social Work**

A vital skill of social workers is the ability to establish working relationships with patients and their caregivers. They must have a clear understanding of the impact that this illness has on the caregivers, as well as on the patients. Social workers must understand the added stress of being the caregiver due to the special nature of this particular disease. They must be able to conduct interviews that include psychosocial assessments and evaluations of the caregiver's coping ability.

Understanding caregiver functioning has important implications for intervention research and practice. This study demonstrated the importance of the role of perception in understanding caregiver functioning. Social workers should consider interventions, both individual and group,
which preserve caregiver functioning, by attending especially to factors affecting how caregivers perceive their situations. They must learn how to get their clients' patients to talk about how they are interpreting the events that are happening in their lives.

Helping caregivers manage appraisal of the caregiving situation may help reduce caregiver burden and depression. Understanding the appraisal process could lead to more effective helping partnerships between worker and client. Social workers must understand the role of humor in changing the caregivers' appraisal of stress, and must encourage the use of humor. Humor seems to have an inverse relationship with depression and burden and therefore its use should be encouraged.

On a practice level caregivers can be trained in humor skills. Humor researchers found evidence that with training, adults could improve their humor skills. There seems to be indications that humor intervention programs may have potential as effective tools for helping people cope with stress. Practitioners can make use of this strategy for a variety of other interventions. Besides training informal caregivers, other professional caregivers such as counselors, social workers and nurses can be trained in humor skills.

Another important area of involvement of social workers is in research. It is very important for them to be aware of the current literature in their area. Reading the literature helps one learn different ways of viewing the situations in which our clients are involved. More research on the use of coping humor with diverse groups of subjects is needed. Humor is a valuable resource and its all its beneficial uses should be explored.

A vital role of the social worker is to be an advocate in the area of resources. Although the majority of subjects in this study had enough income to send their spouses to adult day care
centers, this is not always the case. The lack of funding for such care has resulted in a shortage of affordable services to meet the need of dementia patients and their caregivers. Metropolitan areas have many of these services, but they are simply not available in smaller cities or rural areas. This study shows how caregivers who are able to use these resources, still suffer from caregiver and depression. How much worse is the fate of those spouses who either can not pay for these services, or refuse to use them? Poor caregiver outcomes and premature institutionalization may be the price for inadequate community based services support dementia patient and their caregivers.

Limitations

Several limitations of the study occurred because of the sample and sampling procedures. Obtaining a randomized and truly representative sample of caregiving spouses was quite difficult. Our purposive sampling might easily have introduced bias into the findings. To be included in this sample subjects had to meet certain criteria due to the nature of the investigation. One of the problems of sampling in this study was that the researcher had to depend on others to make sure that potential subjects met these criteria. This can also add bias to the findings.

Another weakness the purposive sampling used here, was the fact that respondents were already connected to service delivery systems. Caregivers in this sample were predominantly White, fairly well educated, with fairly high annual incomes and a lot of support. Over 60 subjects (69%) stated that they had formal supports. The majority of their demented spouses attended adult day care programs. Therefore, these caregivers may not be representative of all caregivers. Caution must be taken in generalizing the findings to other groups of caregivers.

Another limitation in the research was the lack of cultural diversity. Only eight African Americans and one Hispanic caregiver participated in the study, despite the fact that the researcher
worked with two African American churches, and with the Multi-cultural Program Director of the Alzheimer's Association - Georgia Chapter, to locate minority participants.

Recruitment of minority caregivers and caregivers from lower socioeconomic status is clearly more difficult, but is essential to gaining a more complete understanding of the implications of dementia caregiving. Sample homogeneity with regard to race, ethnicity, social class, education and, income levels has made it difficult to estimate the impact of these factors on the caregiving experience for diverse populations.

Our findings were based on cross sectional data, a design that precludes causal explanations. Since AD caregiving can occur over the course of many years, it is imperative that longitudinal studies be conducted to better understand the impact of depression on the caregiver. Understanding the process, requires following both the caregiver and the care recipient over time.

Another issue relates to social desirability bias when dealing with the subject of humor. There is the danger of bias when asking someone to answer a self report questionnaire on the subject. People often have the tendency to say or do things that will make them look good. The very fact that we describe a sense of humor as good or bad reveals the strongly evaluative connotation inherent in such descriptions. Hence very few people are willing to admit that they lack a sense of humor. This self-report bias was noted by Allport (1961). Therefore, although most subjects got moderate to high scores on the CHS, there was no way to assess if those answers conveyed their true feelings or true humor.

When one depends upon caregivers for information about themselves, they may tend to underreport stress on self-report instruments (Toseland, Rossiter, & Labrecque, 1989). Research has shown that when compared to clinical interviews, self-report scales show less stress. This
particularly applies to studies that employ mailed questionnaires, where the problem of under reporting is more acute.

**Need for Additional Research**

While humor did not prove to be a mediator of stress in this particular study and while there is enough evidence to support the belief that humor can have positive effects in reducing stress. How humor is measured and what forms of humor can be beneficial, are concerns that require additional research. There are other ways of view humor besides being a mediator of stress. It could have been viewed as a personality characteristic. As such it is a powerful personal resource and should be nurtured and encouraged.

There is a rich potential in the study of humor as a means for dealing with stress. Further research is needed to explain the specific processes involved in the stress buffering effects of humor, the kinds of stressors with which humor is most effective, and those with which it is less appropriate, the particular aspects or types of humor that are most effective in moderating stress, and the ways in which humor of this kind develops in individuals. Psychometrically sound measures of the construct of humor and still lacking a have to be developed.

Both research and anecdotal reports note, that similar demands and hardships associated with providing assistance to a relative with dementia, appear to have different consequences for different families. The caregiving process seriously damages some of the families, while others are better able to cope and remain intact throughout the experiences. A clear understanding of the factors and conditions which cause such variability, is critical for the delivery of supportive interventions.
To address a persistent gap in the literature, better strategies are needed to recruit ethnically diverse groups of participants for caregiving research. The overwhelming majority of participants in studies of interventions are Caucasian. However, in light of continually increasing ethnic diversification in the United States, and the evidence that non majority caregivers groups have unique needs and experiences, the design and testing of interventions for caregivers should be a priority. There is a dearth of literature comparing the psychiatric symptoms and caregiver stress among caregivers from different ethnic groups.

The majority of caregiver studies have been cross-sectional in design. Fuller understanding of the caregiving process requires following both the caregivers and care recipients over time. Longitudinal studies would allow us to address to an entirely new set of questions and issues: What is the pattern of variation over time in caregiver strain, patient behavior, cognition and function? What is the impact of significant changes in routine, including vacations, holidays and respite? These questions cannot be framed within the context of cross-sectional studies. It is also important to distinguish temporary episodes of depression by utilizing more frequent depression screening through longitudinal studies.

**Conclusion**

This study represents an initial attempt to investigate a hypothesis that has long been maintained by a large number of humor therapists, psychotherapists, and laymen alike, namely, that a sense of humor permits one to better cope with the aversive experiences of life. Answers to such questions will not only provide information specific to the stress-moderating role of humor, but will also enlarge our understanding of the still largely unexplained role of humor in relieving stress.
The ultimate outcome of the caregiving stress process may include feelings of burden, with physical and mental health changes such as depression. However, mediators such as social support and coping appear to have an important role in this variability. These mediators can enhance or reduce the likelihood of effective responses to the demands of caregiving.

In this study humor did not act as a mediator of caregiver depression. In hindsight, caregiver burden might have been used as the dependent variable, rather than caregiver depression. Caregiver burden is role specific to the AD caregiving situation and takes place as a result of caring for a relative with dementia. In contrast depression seems to be a more global construct. Elderly people have many losses and things to get depressed about besides the care recipient. I would possibly use humor as a personality trait and enter it as a background variable at the beginning of the regression model.

Overholser, (1992) states that the Coping Humor Scale showed that subjects who reported higher humor scores were found to have less depression. He stated that these effects appeared to be short term in nature, having disappeared when subjects were reassessed after seven weeks. He also found that the effects of humor varied with the degree of life stress. Perhaps caring for a spouse with dementia is too stressful to impact on depression.

Researchers must evaluate current and future interventions, to be sure that they are effective in doing what they were supposed to do. New mediators and better instruments must be tried. It is important to understand the role of sense of humor and other positive individual personality traits in relieving stress and depression.
REFERENCES


being of caregivers of dementia patients. Aging and Mental Health, 4, 142-147.


Seligman, Martin E.P. (1975) Helplessness: On depression, development and death. San Francisco; Freeman


May 5, 2004

Dear Caregiver,

Thank you for agreeing to be part of my research on caregiving for a spouse with Alzheimer’s disease or related dementia. We know how difficult it can be for you to take care of your husband or wife, and we are looking for ways to decrease the stress that comes with this role.

Please sign and date one of the consent forms (there are two). Send the signed one back to me with your completed survey. Keep the other form for your records. Please send the completed survey and signed consent form back in the mail in the provided addressed, stamped envelope. The survey does not need any name and is confidential. Again thanks for your help.

Sincerely,

Carole Katz, MSW
1020 Arbor Creek Drive
Roswell, GA 30076
cakatz@mindspring.com
770-569-0086
APPENDIX B

CONSENT FORM
Consider Form

I, __________________, agree to participate in a research study titled “SENSE OF HUMOR AS A MEDIATOR OF STRESS AMONG SPOUSAL CAREGIVERS OF INDIVIDUALS WITH DEMENTIA” conducted by Carole Katz from the Department of Social Work at the University of Georgia (770-569-0086) under the direction of Dr. Nancy Kropf, Department of Social Work, The University of Georgia (542-5444).

I understand that my participation in voluntary. I can stop taking part without giving any reason, and without penalty. I can ask to have all of the information returned to me, removed from the research records or destroyed.

The following points have been explained to me:

The reason for the study is to examine the effect of sense of humor and other psychosocial variables on reducing caregiver burden. Participants may benefit through participation by learning of the beneficial effects of sense of humor as a coping mechanism to deal with caregiver burden, depression, and health in administering caregiver responsibilities. Interventions with caregivers dealing with the use of humor can help them cope more effectively in their role as caregiver to their spouses.

If I volunteer to take part I will answer survey questions on caregiving for a spouse with dementia, which will take approximately 25-30 minutes. There will be no penalty if I decide not to complete the survey for any reason. No psychological, social, legal, economic, or physical discomfort or harm is anticipated from participation in the study. I may undergo slight stress in answering questions about my spouse due to the condition of dementia, but this level of stress is not anticipated to be severe.

The results of this participation will be confidential. No names or addresses will be on the surveys or collected at all. There will be no master list. Confidentiality will be maintained for purposes of this study. All participants will be protected from any potentially harmful use of the information collected. No information relevant in individually identifiable form will be collected. All results will be reported in summary form.

The researcher will answer any further questions about research, now or during the course of the project and can be reached at 770-569-0086.

My signature below indicates that the researcher has answered all of my questions to my satisfaction and that I consent to volunteer for this study. I understand that I will receive a signed copy of this consent for my records.

Name of Researcher                                  Signature                                Date
Telephone__________________
Email_____________________

Name of Participant                                  Signature                                Date

Additional questions or problems regarding your rights as a research participant should be addressed to: Chris A. Joseph, Ph.D., Human Subjects Office, The University of Georgia, 606 Boyd Graduate Studies Research Center, Athens, GA 30602-7411, (706)542-6514, IRB@uga.edu
APPENDIX C

CAREGIVER SURVEY ON HUMOR
Dear Caregiver,

The following questionnaire is designed to examine the relationship between humor and caregiving. You have been selected to participate in this study because of the caregiving role you provide for your spouse. There are no right or wrong answers to the questions, so please be completely honest when answering the questions.

All information that you provide will be kept strictly confidential, and only summary data aggregated across all participants in the study will be reported when the study is completed. Your name or any other identifying information will not be linked to the responses you provide when the study is completed. The survey is completely voluntary, and you can skip any questions you do not feel comfortable in answering.

To begin, please indicate whether you strongly disagree, mildly disagree, mildly agree, or strongly agree with each of the following statements. Remember, there are no right or wrong answers to the questions.

Q1 – I often lose my sense of humor when I’m having problems.

1                                  2                          3                     4

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Mildly Disagree</th>
<th>Mildly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

Q2 – I have often found that my problems have been greatly reduced when I tried to find something funny in them.

1                                  2                          3                     4

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Mildly Disagree</th>
<th>Mildly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>
Q3 – I usually look for something comical to say when I am in a tense situation.

1 2 3 4

Strongly Disagree  Mildly Disagree  Mildly Agree  Strongly Agree

Q4 – I must admit my life would probably be easier if I had more of a sense of humor.

1 2 3 4

Strongly Disagree  Mildly Disagree  Mildly Agree  Strongly Agree

Q5 – I have often felt that if I am in a situation where I have to either cry or laugh, it’s better to laugh.

1 2 3 4

Strongly Disagree  Mildly Disagree  Mildly Agree  Strongly Agree

Q6 – I can usually find something to laugh or joke about even in trying situations.

1 2 3 4

Strongly Disagree  Mildly Disagree  Mildly Agree  Strongly Agree
Q7 – It has been my experience that humor is often a very effective way of coping with problems.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Mildly Disagree</td>
<td>Mildly Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

For each statement below, please tell me which response describes how often you felt or behaved this way during the past week.

Q8 – I was bothered by things that usually don’t bother me.

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<th>4</th>
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<tbody>
<tr>
<td></td>
<td>Rarely (less than 1 day)</td>
<td>Some of Time (1 – 2 days)</td>
<td>Moderate Amount of Time (3-4 days)</td>
<td>Most or all of the Time (5-7)</td>
</tr>
</tbody>
</table>

Q9 – I did not feel like eating; my appetite was poor.

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</table>

Q10 – I felt that I could not shake off the blues even with help from my family and friends

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<td></td>
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</table>

Q11 – I felt that I was just as good as other people.

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<td>Moderate Amount of Time (3-4 days)</td>
<td>Most or all of the Time (5-7)</td>
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</table>
Q12 – I had trouble keeping my mind on what I was doing.

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</table>

Q13 – I felt depressed.

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<td>Most or all of the Time (5-7)</td>
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Q14 – I felt that everything I did was an effort.

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Q15 – I felt hopeful about the future.

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Q16 – I thought my life had been a failure.

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<td>Most or all of the Time (5-7)</td>
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Q17 – I felt fearful.

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Q18 - My sleep was restless.

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Q19 – I was happy.

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Q20 – I talked less than usual.

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Q21 – I felt lonely

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Q22 – People were unfriendly.

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<td>Most or all of the Time (5-7)</td>
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</table>

Q23 – I had crying spells.

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</table>
Q24 – I felt sad.

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</thead>
<tbody>
<tr>
<td>Rarely (less than 1 day)</td>
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<td>Moderate Amount of Time (3-4 days)</td>
<td>Most or all of the Time (5-7)</td>
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Q25 – I felt that people disliked me.

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<tbody>
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<td>Most or all of the Time (5-7)</td>
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</table>

Q26 – I could not get going.

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</tr>
</thead>
<tbody>
<tr>
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<td>Some of Time (1 – 2 days)</td>
<td>Moderate Amount of Time (3-4 days)</td>
<td>Most or all of the Time (5-7)</td>
</tr>
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</table>

Q27 – Would you say your current health is poor, fair good or excellent?

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<th>4</th>
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</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Fair</td>
<td>Good</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

Do you have to help your spouse with any of the following tasks?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

Q28 – Bathing
Q29 – Toileting
Q30 – Dressing
Q31 – Transfer
Q32 – Continence
Q33 – Feeding

Is your spouse able to do the following activities without assistance?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q34 – Use the telephone
Q35 – Go shopping
Q36 – Prepare Meals
Q37 – Take Medicine
Q38 – Handle Money
Q39 – Drive
Q40 – Do Laundry

Q41 Do you have anyone that helps you care for your spouse, either paid or unpaid? Yes/No

This last section asks for some demographic information.

Q42 – Are you male or female? Male/ Female

Q43 – What is your age? ____________ years old

Q44- What is your race?

1. Caucasian
2. African American
3. Asian  
4. Hispanic  
5. Other ______

Q45- What is your religion?

1. Protestant Denomination ____________  
2. Catholic  
3. Jewish  
4. Other ____________________

Q46 – What is the highest grade of school or college you have attended?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some HS</td>
<td>HS Grad</td>
<td>Associate Degree</td>
<td>Bachelor’s</td>
<td>Graduate</td>
</tr>
</tbody>
</table>

Q47 – Are you currently………

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Employed /Retired</td>
<td>Employed Part Time</td>
<td>Employed Full Time</td>
</tr>
</tbody>
</table>

If employed, how difficult is caring for your spouse and attending to job responsibility?

<table>
<thead>
<tr>
<th>1</th>
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<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Difficult</td>
<td>Somewhat Difficult</td>
<td>Not at all Difficult</td>
</tr>
</tbody>
</table>

Q48 – What is your current annual household income?

1. Less than $10,000 _____  
2. $10,000 - $19,999 _____  
3. $20,000 - $29,999 _____  
4. $30,000 - $39,999 _____  
5. $40,000 - $49,000 _____
6. $50,000 - $74,999 _____
7. $75,000 or higher _____

Q49 – How long have you been caring for your spouse?

1. 6 months – 1 year _____
2. 1 – 2 years _____
3. 3 – 4 years _____
4. 5 or more years _____

That completes the survey. Thank you for your participation.
APPENDIX D

KATZ INDEX OF INDEPENDENCE OF ACTIVITIES OF DAILY LIVING
# Katz Index of Independence in Activities of Daily Living

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>INDEPENDENCE: (1 POINT)</th>
<th>DEPENDENCE: (0 POINTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points (1 or 0)</td>
<td>NO supervision, direction or personal assistance</td>
<td>WITH supervision, direction, personal assistance or total care</td>
</tr>
<tr>
<td>BATHING</td>
<td>(1 POINT) Baths self completely or needs help in bathing only a single part of the body such as the back, genital area or disabled extremity.</td>
<td>(0 POINTS) Needs help with bathing more than one part of the body, getting in or out of the tub or shower. Requires total bathing.</td>
</tr>
<tr>
<td>Points:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DRESSING</td>
<td>(1 POINT) Gets clothes from closets and drawers and puts on clothes and outer garments complete with fasteners. May have help tying shoes.</td>
<td>(0 POINTS) Needs help with dressing self or needs to be completely dressed.</td>
</tr>
<tr>
<td>Points:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOILETING</td>
<td>(1 POINT) Goes to toilet, gets on and off, arranges clothes, cleans genital area without help.</td>
<td>(0 POINTS) Needs help transferring to the toilet, cleaning self or uses bedpan or commode.</td>
</tr>
<tr>
<td>Points:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRANSFERRING</td>
<td>(1 POINT) Moves in and out of bed or chair unassisted. Mechanical transferring aides are acceptable.</td>
<td>(0 POINTS) Needs help in moving from bed to chair or requires a complete transfer.</td>
</tr>
<tr>
<td>Points:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTINENCE</td>
<td>(1 POINT) Exercises complete self control over urination and defecation.</td>
<td>(0 POINTS) Is partially or totally incontinent of bowel or bladder.</td>
</tr>
<tr>
<td>Points:</td>
<td></td>
<td></td>
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<tr>
<td>FEEDING</td>
<td>(1 POINT) Gets food from plate into mouth without help. Preparation of food may be done by another person.</td>
<td>(0 POINTS) Needs partial or total help with feeding or requires parenteral feeding.</td>
</tr>
<tr>
<td>Points:</td>
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**TOTAL POINTS = _______**

6 = High (patient independent)  
0 = Low (patient very dependent)

APPENDIX E

INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE (IADL)
### INSTRUMENTAL ACTIVITIES OF DAILY LIVING SCALE (IADL)

**M. P. Lawton & E. M. Brody**

#### A. Ability to use telephone
1. Operates telephone on own initiative; looks up and dials numbers, etc.  
2. Dials a few well-known numbers  
3. Answers telephone but does not dial  
4. Does not use telephone at all.

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>1</td>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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#### B. Shopping
1. Takes care of all shopping needs independently  
2. Shops independently for small purchases  
3. Needs to be accompanied on any shopping trip  
4. Completely unable to shop.

<table>
<thead>
<tr>
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<td>1.</td>
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#### C. Food Preparation
1. Plans, prepares and serves adequate meals independently  
2. Prepares adequate meals if supplied with ingredients  
3. Heats, serves and prepares meals or prepares meals but does not maintain adequate diet  
4. Needs to have meals prepared and served.

<table>
<thead>
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<tr>
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#### D. Housekeeping
1. Maintains house alone or with occasional assistance (e.g., “heavy work domestic help”)  
2. Performs light daily tasks such as dishwashing, bed making  
3. Performs light daily tasks but cannot maintain acceptable level of cleanliness  
4. Needs help with all home maintenance tasks  
5. Does not participate in any housekeeping tasks.

<table>
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#### E. Laundry
1. Does personal laundry completely  
2. Launders small items; rinses stockings, etc.  
3. All laundry must be done by others.

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#### F. Mode of Transportation
1. Travels independently on public transportation or drives own car  
2. Arranges own travel via taxi, but does not otherwise use public transportation  
3. Travels on public transportation when accompanied by another  
4. Travel limited to taxi or automobile with assistance of another  
5. Does not travel at all.

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#### G. Responsibility for own medications
1. Is responsible for taking medication in correct dosages at correct time  
2. Takes responsibility if medication is prepared in advance in separate dosage  
3. Is not capable of dispensing own medication.

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#### H. Ability to Handle Finances
1. Manages financial matters independently (budgets, writes checks, pays rent, bills goes to bank), collects and keeps track of income  
2. Manages day-to-day purchases, but needs help with banking, major purchases, etc  
3. Incapable if handling money.

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