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FACTORS THAT CONTRIBUTE TO STRESS AMONG JAPANESE-AMERICAN AND CAUCASIAN-AMERICAN FAMILY CAREGIVERS OF FRAIL ELDERS

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By
Linda A. McLaughlin

Dissertation Committee:

Joel Fischer, Chairperson
Velma Kameoka
Colette Browne
Cullen Hayashida
Kathryn Braun

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ABSTRACT

Care for frail elderly adults in the U.S. has increasingly become the financial, physical and emotional responsibility of family members. Over twenty years of caregiving research has documented many factors that contribute to stress among caregivers. Due to the inherent stresses associated with informal caregiving, and an increase in multi-ethnic elders in the U.S., this study was designed to investigate factors that contribute to caregiving stress among Japanese-American and Caucasian-American caregivers of frail elders.

The purpose of this study was to examine a model of factors associated with stress, and to compare the utility of this model in the prediction of stress among Japanese-American and Caucasian-American caregivers of frail elders in Hawaii. Specifically, this study examined the importance of (1) employment status, (2) time spent caregiving, (3) use of formal services, (4) functional ability, (5) social support, (6) health problems, and (7) attitude toward family care in explaining stress among caregivers. Stress was measured by two indicators, depression and life satisfaction.

A correlational design was used to test the hypothesized relationships. Participants in this study were 98 Japanese-American and 86 Caucasian-American adult family caregivers who were caring for a frail elder at home. Participants were recruited from two caregiver support groups, two adult day care centers, and one home health care agency on Oahu.

Multivariate analysis of variance revealed that there were significant differences

between the Japanese-American and Caucasian-American samples with regard to the model of factors hypothesized to predict stress among caregivers. Simultaneous multiple regression analyses were used to test the hypothesized relationships between predictor and criterion variables. Decreased social support and more health problems of the caregiver were significant in the prediction of depression among Japanese caregivers; increased employment, decreased service use, and more health problems were significant in the prediction of depression among Caucasian caregivers. The variable "attitude toward family care" significantly predicted depression in both groups. Decreased time spent caregiving, increased social support, and stronger attitude toward family care were significant in the prediction of life satisfaction among Japanese caregivers. Only the variable "attitude toward family care" was significant in the prediction of life satisfaction among Caucasian caregivers.

The results of this study are limited with regard to generalizability. The use of a convenience sample, the use of a correlational design (limiting causal inferences), and modifications made to the ATPLTC scale that measured "attitude toward family care," a scale not previously tested for psychometric properties or for use among multiethnic populations, limit the generalizability of these findings beyond the sample participants.

In light of these limitations, future research could examine the continued use of the modified ATPLTC scale among multiethnic populations due to the promising results found in this study. "Attitude toward family care of elders" was the only variable that was significant with both samples, and with both indicators of stress. The importance of

attitudes in determining behaviors associated with caregiving for frail elders among ethnically diverse caregivers may greatly assist social workers, gerontologists, and other health care professionals in providing culturally competent services and interventions.

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CHAPTER 1

INTRODUCTION

In recent years, care for frail elderly adults in the United States increasingly has become the financial, physical, and emotional responsibility of family members (Aneshensel, Pearlin, Mullan, Zarit, & Whitlatch, 1995; Hooyman & Gonyea, 1995; Horowitz, 1985). As a result of increased life expectancy, and possibly the effects of managed health care policies, care for frail elders is often provided at home by adult children or elderly spouses (Hawai'i Medical Service Association Foundation, 1999; McKinlay, Crawford, & Tennstedt, 1995). Although caregivers may be healthy when they take on the caregiving role, many caregivers develop physical or psychosocial problems due to the stresses associated with caregiving responsibilities (Barusch, 1988; Brody, 1981; Cantor, 1983; George & Gwyther, 1986; Poulshock & Deimling, 1984). Moreover, caregivers who are unable to cope adequately with the stresses associated with caregiving may become impaired themselves, resulting in an inability to provide care (Kahana, Biegel, & Wykle, 1994; Zarit, Todd, & Zarit, 1986). A frequent result of impaired caregiving is unwanted institutionalization of the frail elder, and sometimes institutionalization of the caregiver as well (Aneshensel, Pearlin, & Schuler, 1993; McFall & Miller, 1992; McKinlay et al., 1995; Wu, Wang, Cacioppo, Glaser, Kiecolt-Glaser, & Malarkey, 1999).

The purpose of this study is to investigate factors that contribute to caregiving stress. In addition, cultural variation in factors that contribute to stress are explored. This focus on cultural variation in stress associated with caregiving is important because of the preponderance of ethnic minority elders living in Hawai'i. In 2000, for example, 74% of

persons 60 years and older were Asian and/or Pacific Islanders in Hawaii (38% Japanese, 27% Caucasian, 14% Filipino, 9% Chinese, 2% Korean, 7% Hawaiian, and 2.8% other diverse minority groups) (State of Hawaii, Executive Office on Aging, 2001). In multicultural communities such as Hawai'i, it will become increasingly important for health care professionals and gerontologists to understand how cultural factors may influence decisions about elder care, as well as the quality of care being provided. A cross-ethnic study such as this one provides an understanding of whether a model of factors hypothesized to predict stress among caregivers is relevant among non-Caucasian populations. The following sections discuss the rationale for this study in greater depth.

Although it is usually clear when frail elderly require intermediate or skilled nursing care in a facility (e.g., nursing home) or paraprofessional care (e.g., care home), many elderly cannot afford these levels of care when they are not covered by Medicare or Medicaid. Family care becomes the only viable alternative. The result is that elderly spouses, sometimes in their 80's or 90's, or adult children, often in their 60's or 70's, provide most of the care for frail elderly. It is estimated that between 8.3 million to 20.9 million people age 85 years or older will be in need of caregiving by the year 2040 (U.S. Bureau of the Census, 1996). The year 2040 is when baby boomers reach their eighties and nineties. The U.S. Census Bureau projects that the number of people aged 65 and over with activity limitations due to disability will be nearly 28 million by the year 2030. Those over 65 years are likely to be the caregivers for those 85 years and older. Implications of these statistics are that there will be many people needing care, although there will be fewer people under age 65 to provide care. Furthermore, the health of the

over 65 caregiving population will become increasingly important in the care of the frail elderly population.

As of 1990, approximately 25,126 persons age 60 years and older were being cared for in their homes by family members in Hawaii (Executive Office on Aging, 1997). This finding reflects an estimate that one in every ten people over 60 years old needed assistance with self-care or mobility (Executive Office on Aging, 1997). Interestingly, in the U.S. nearly one-third of all people age 65 and above suffer from at least one chronic health condition. These statistics suggest that caregivers for the elderly who are over age 65 have a chronic health condition while providing care to someone else. Add to this the stresses associated with caregiving, and the result is often compromised care for the frail elder (Utley, 1999).

Caregivers often experience compromised well-being in the form of psychological impairment (e.g., depression, anxiety, guilt, or anger), physical impairment (e.g., high blood pressure, broken bones, etc.), and social impairment (e.g., diminished social relationships or isolation) (Butler, Lewis, & Sunderland, 1998; Moritz, Kasl & Ostfeld, 1992; Parks & Pilisuk, 1991; Reinhard & Horowitz, 1995). When caregivers are impaired in any of these ways, it is not surprising to find that they are no longer able to perform caregiving functions at an optimal level. Impairments commonly experienced by caregivers can contribute to stress, often resulting in institutionalization (e.g., nursing home placement), or abuse of the elder (Butler, et al., 1998; Reis & Nahmiash, 1997; Utley, 1999). Therefore, it is important for gerontological researchers, policy makers, and practitioners to understand what factors contribute most heavily to stress among

caregivers. With a greater understanding of factors that contribute to stress, practitioners may be able to intervene more effectively with stress-reduction techniques for caregivers of frail elders (McKinlay et al., 1995).

Factors that contribute to caregiving stress have been well researched in the past two decades (Brody, 1985; Cantor, 1983; McDonald, Poertner, & Pierpont, 1999; Stevens, Walsh, & Baldwin, 1993; Yates, Tennstedt, & Chang, 1999; Zarit, Stephens, Townsend, & Greene, 1998). An increased understanding of caregiving stress based on empirical evidence of factors contributing to stress among caregivers has helped gerontologists recognize caregivers as a needy and deserving population, worthy of attention equal to that of the care-recipient. There is, however, one area of stress and caregiving that warrants further research. Although previous studies that explored the relationship between stress and caregiving have offered a myriad of explanations regarding factors that contribute to stress, few studies have explored the predictive value of factors that contribute to stress among multiethnic populations.

Recent trends in the U.S. indicate that the nation is becoming increasingly diverse ethnically and culturally, evidenced by one in every four persons identifying as an ethnic minority in the year 2000, with projections of one in every two persons being of minority status by 2050 (U.S. Census Bureau, 2000, 2001). With respect to frail elders, one implication of an increase in ethnic diversity in the U.S. is that the present empirical evidence on factors contributing to stress among caregivers may not be relevant to certain ethnic groups. Although some studies on stress and caregiving in recent years focused on African-American or Hispanic caregivers, most of the stress and caregiving studies

published in the 1980's and 1990's used primarily Caucasian (European-American) subjects. Therefore, current models of factors believed to predict stress among caregivers need to be tested on non-Caucasian populations to determine their relevance for practice in multi-ethnic settings.

In light of these needs, the objectives of this study were: (1) to identify factors that predict stress among caregivers; and (2) to test a model based on those factors known to predict stress in a multi-ethnic setting. The goal is to determine the generalizability of the model among Caucasian and non-Caucasian caregivers. More specifically, this study compares two groups of caregivers, Japanese-Americans and Caucasian-Americans that reside in Hawai'i.

The background for this study is presented in a review of literature on prominent empirically-based studies in the field of stress and caregiving, followed by a discussion of cultural influences relevant to stress among caregivers for frail elders. Chapter One proceeds with a description of models of factors believed to contribute to stress among caregivers, followed by a section that examines empirical evidence for the factors presented in the hypothesized model.

Stress Related to Caregiving for the Elderly

This section includes a review of literature on stress associated with caregiving for the elderly. Beginning with definitions of *frail elderly, caregiving stress*, and *family caregiving*, a description of family caregivers is then presented, followed by a literature review of empirical studies on stress and caregiving. The definitions are based on standard definitions found in the literature, and are offered here to clarify the terms for the purpose

of this study. The literature in this section further justifies why a new study of stress among caregivers is needed through identification of gaps in the stress and caregiving literature.

Definitions

Frail elderly. The definition of frail elderly most commonly used in the literature refers to persons age 60 years and older who require assistance with personal care, including physical support, financial management, or emotional support due to cognitive or physical impairment (Aldous, 1994; Kahana et al., 1994; Thompson, Futterman, Gallagher-Thompson, Rose, & Lovett, 1993).

Caregiving stress. Cantor (1983), a prolific researcher in the field of caregiving for the elderly, defines caregiving stress by lifestyle modifications that occur as a result of providing care to a frail elderly person. Lifestyle modifications occur due to the multiple demands placed on caregivers by family, work, and financial concerns. The caregiver's own social, physical, and emotional needs are often overlooked in the process. Caregiving stress historically has been defined in the literature as subjective, based on the caregiver's appraisal of environmental demands, resulting in feelings of perceived stress (Walker & Walker, 1987).

According to Kasl (1984), stress is defined within the context of demands that tax the adaptive resources of the caregiver. The following are some examples of demands that may "tax adaptive resources" among caregivers. First, family relationships can become strained when a family caregiver is stressed, often resulting in marital discord between spouses. Second, caregivers experience changes in their daily activities and a

disruption in the pursuit of life goals as a result of stressful caregiving. Third, there are increased demands on the caregiver's time due to the tasks required for caregiving. Fourth, there is often increased financial burden due to caregiving. Fifth, social isolation is often experienced by caregivers who cannot leave their frail elder. A result of social isolation is often an increased perception of stress due to having no outlet for expression of feelings pertaining to their caregiving role (Kasl, 1984).

Two major research groups are in agreement on an alternate definition of caregiving stress. Lazarus and Folkman (1984) proposed that stress is not simply an external force that automatically produces negative effects in all individuals. Rather, stress is a relationship between an individual and his or her environment. Mediating variables, including appraisals, coping responses, and variables such as social support are important factors in defining a stress reaction to a given situation such as caregiving. Poulshock and Deimling (1984) concurred with this definition, and added that conceptual clarity requires an independent assessment of factors that contribute to stress. Independent measures of stress have been used by many other researchers to study responses to daily hassles, major life events, and illness in the caregiving literature (Haley, Levine, Brown, & Bartolucci, 1987; Lazarus & Folkman, 1984; Zarit et al., 1980)

Family caregivers. Family caregivers are sometimes referred to as "informal caregivers" in the caregiving literature. Family caregivers are relatives or friends of an older person that provide, arrange, or oversee services that the older person needs due of functional or cognitive impairment (Guagler, Kane, & Langlois, 2000). According to Kahana et al. (1994), the purpose of categorizing family caregivers into a group that can

be described and studied as a whole is to facilitate the analysis of caregiving for both theory and research. The population termed "family caregivers" refers to a range of family members who provide care to frail elders. Family caregivers can include a designated individual member of the family (e.g., adult child or elderly spouse), or an entire family system where caregiving responsibilities are shared among family members.

Family caregivers are usually biologically related individuals; however, friends or in-laws are also included in this group. Provision of care to frail elders by extended family members or non-related individuals is quite common in Hawai'i, where the concept of *ohana* permeates the local culture (Braun & Browne, 1998). It is often the case that frail elders in Hawai'i are cared for by current or ex-daughters-in-law, children who were adopted into the family (*hanai*), or close family friends (Char, Tseng, Lum & Hsu, 1980; Huang, 1991; Mokuau, 1991). The quality of care family members are able to provide greatly impacts the well-being of their elders. At best, family caregivers work in tandem with health care professionals (also known as formal caregivers) to provide quality care for frail elders.

Caregivers

Two categories of caregivers are most common: (1) elderly spouses caring for a frail elder, and (2) adult children caring for an elderly parent. The issues concerning each group are different, resulting in many studies that have included only one group of caregivers. The following sections describe some of the concerns, first, of elderly spouses as caregivers and, second, of adult children as caregivers. In addition, issues concerning women as caregivers are discussed due to the disproportionate number of women that

provide care to frail elderly family members, resulting in important implications for policy and intervention.

Elderly spouses as caregivers. One of the most significant changes in caregiving for the elderly in recent years has to do with the age of caregivers (Stone, 2000). One third of caregivers in a major longitudinal caregiving study beginning in 1982 were over age 65 years (Biegel & Blum, 1990), with 10% of this group being 75 years or older. In the coming years it is likely that the average age of caregivers will increase, primarily due to an increase in spousal caregiving (Stone, 2000). The concept of elderly spouses caring for each other is not new; however, increased longevity has resulted in old caring for old, and for much longer. Along with increased longevity within the population comes a longer time span of dealing with chronic conditions common to aging, including arthritis, osteoporosis, dementia, high blood pressure, diabetes, hypertension, susceptibility to common illness, impaired ability to fight infection, and skin that tears easily (Executive Office on Aging, 1997).

When the stress of caregiving is added to chronic conditions that many elderly caregivers experience, an exacerbation of chronic conditions can result. When a caregiver becomes so impaired that he or she must discontinue the caregiving relationship, the frail elder is often affected by unwanted institutionalization (Aneshensel et al., 1993; McFall & Miller, 1992; McKinlay et al., 1995). This situation is much more common among spousal caregivers than other caregivers who are likely to be younger. It is often the case, however, that elderly spouses who provide care continue to do so for many years, despite

disabling symptoms such as chronic pain, in order to avoid institutionalization of their frail spouse.

Adult children as caregivers. Adult children caregivers are often referred to in the literature as members of "the sandwich generation" (Loomis & Booth, 1995). This term refers to middle-aged individuals in situations where they are providing care for an elderly parent while caring for minor children (Piercy & Blieszner, 1999). The lives of "sandwich generation" individuals are filled with a multitude of stressors that often affect the quality of care they can provide to their frail elderly family member (Brody, 1981; Horowitz, 1985; Neal, Chapman, Ingersoll-Dayton, & Emlen, 1993).

Despite increased need for elder care services, and a trend toward reduced number of family members available to provide the care, there has been no indication of a reduction in the number of elderly being cared for at home (Stone, 2000). In other words, adult children are stepping up to the challenges of caregiving, despite an increasing need for quality elder care, and decreased resources. One explanation for this trend is offered by Stone (2000), who suggested that a strong motivating force in providing care is that adult children want to respect their parent's wishes not to be institutionalized. If this trend continues, however, there will be an even greater need to find ways to help those in the "sandwich generation" cope with a multitude of demands in their lives, including employment, housework, child care, and elder care.

Women as caregivers. A discussion of caregiving issues is not complete without special recognition of the overwhelming proportion of women who provide elder care. About 70-80% of those who provide care to frail elderly are women (Hooyman & Kiyak,

2002). Recent data that compare men and women in caregiving roles suggest that: (1) women form the majority of caregivers, (2) women feel more psychologically responsible for care of parents, (3) women are more likely to give up or modify employment due to caregiving responsibilities, (4) women tend to face multiple demands from employment, care of dependent children, and care of elders, and (5) women find that caregiving is often a career over the life course (Hooyman & Kiyak, 2002).

Provision of care to frail elders is usually not most women's first experience with caregiving. Most women have been in the role of caregiving for much of their lives (Browne, 1998; Hooyman & Gonyea, 1995). There are many sociopolitical implications of women's role in caregiving for the elderly. One implication is that over the life course, women in the U.S. who provide informal care for family members generally have been unemployed, are more disadvantaged economically, and receive a reduced amount in Social Security benefits in their older years (compared to men) (Browne, 1998). The economic disadvantage often adds to a cycle of poverty for many older women, as they are likely to outlive their spouses, and have less economic resources to obtain adequate care for themselves during their final years. Among women who are elderly and of ethnic minority status, the economic implications are compounded (Hooyman & Gonyea, 1995).

Another sociopolitical implication of women as caregivers concerns societal expectations that women will provide care, both formally and informally. Formal care of frail elders refers to paid employment, in female-dominated positions such as Certified Nursing Assistant (CNA's). Interestingly, wages for this level of care are often barely above minimum wage. The low (or no) wages result in economic disadvantage for

women who engage in caregiving due to a relationship with an elderly family member based on affection, altruism, or social norms of obligation and respect (Badgett & Folbre, 1999). Therefore, a sociopolitical goal in addressing the needs of women as caregivers involves achievement of gender justice so that care for the elderly is more equitable and humane for both caregivers and care-recipients (Hooyman & Gonyea, 1995). Identification of factors that contribute to stress among caregivers, along with gender differences with regard to stress, is imperative in determining how gender justice can be established. Identification of how the effects of culture, along with gender, influence caregiver outcomes is an essential step in obtaining gender justice among caregivers.

Stress Among Caregivers

Studies on stress and caregiving emerged during the 1980's. Initially, caregiving research focused on identification of factors that contribute to stress such as the magnitude of caregiving (e.g., time and duration of caregiving) (Doty, 1986; Horowitz, 1985; Stone, Cafferata, & Sangl, 1987; Tennstedt & McKinlay, 1989); type of care provided (Horowitz, 1985; Stephens & Christianson, 1986; Stone et al., 1987); and use of formal services (Greene, 1983; Horowitz & Dobrof, 1982; McKinlay & Tennstedt, 1986; Noelker & Wallace, 1985). The results of these studies offered a preliminary understanding of caregiving tasks related to stress among caregivers. Also during the 1980's, caregiving research focused on the impact of caregiving on the personal lives of the caregiver. A common goal of these studies was to identify the needs of caregivers for the purpose of tailoring services to reduce stress and burden. Initial studies in the 1980's identified various correlates of caregiving, such as restrictions in personal time and social

activities, compromised physical and mental health, financial burden, and employment consequences (Brody, 1981; Cantor, 1983; Horowitz & Dobrof, 1982; Scharlach, 1987; Zarit et al., 1980). Subsequent caregiving studies focused on conceptualization and operationalization of the consequences of caregiving referred to above, and conceptual models of stress and caregiving emerged (Biegel, Sales, & Schulz, 1991; Haley, Levine, Brown, & Bartolucci, 1987).

Studies on caregiving and stress in the 1990's evolved to focus on the relationship between stress and the quality of care received by the frail elder (Miller & McFall, 1991). For example, two major studies found a strong relationship between exacerbation of caregiver stress and institutionalization of the frail elder (Aneshensel et al., 1993; Miller & McFall, 1991). These studies found that institutionalization of the elder was more likely to happen when caregivers reported strong symptoms of stress while still in the caregiving role. Therefore, extreme stress resulted in a cessation of the caregiving situation.

The importance of identifying factors that contribute to stress among caregivers became the focus of many studies in the 1990's, as a means of keeping frail elders out of institutions. The following studies on stress and caregiving offer empirical evidence in support of factors that contribute to stress among caregivers. The following factors were found to be significant predictors of stress among caregivers: (1) decreased social support; (2) low functional status of the care-recipient; and (3) limited or no use of formal services (Saltz, Zimmerman, Tompkins, Harrington, & Magaziner, 1998; Segal & Schall, 1996). In addition, (4) working status of the caregiver (Haworth, 1997; McDonald, Poertner, & Pierpont, 1999; and Orodenker, 1991); (5) attitudes about the role of family members in

caregiving (Levesque, Cossette, & Laurin, 1995); (6) quality of the relationship between caregiver and care-recipient (McDonald et al., 1999); and (7) role captivity and role overload (Aneshensel et al., 1995), were found to be important predictors of stress among caregivers. Factors included in the present study were identified as important predictors of stress among caregivers based on the studies cited above.

The following sections include a review of the literature on the Psychosocial impact of stress among caregivers, along with a section on abuse and neglect resulting from caregiving stress. Psychosocial impairment of the caregiver is considered an outcome variable in some studies and a predictor variable in other studies. The purpose of the following section is to show the historical importance of this variable with respect to caregiving.

Psychosocial impact of stressful caregiving. Beginning in 1990, one branch of caregiving research shifted from a focus on intervention to a focus on caregiver morbidity, both psychiatric and physical (Biegel & Blum, 1990). Since 1990, most caregiving studies have included some aspect of Psychosocial functioning of the caregiver as a factor contributing to stress and burden. Many studies use constructs such as psychological functioning (e.g., depression, life satisfaction, or anxiety), and social functioning (e.g., communication, quality of relationships, and number of relationships) when investigating factors that contribute to stress among caregivers.

A result of stressful caregiving is often depression (Gallagher, Rose, Rivera, Lovett, & Thompson, 1989; Raveis, Karus, & Siegel, 1998). Raveis et al. (1998) suggested that an increased sense of filial obligation may cause caregivers to feel

"trapped," leading to feelings of hopelessness, resulting in depression. Caregivers may feel there are no options except to continue to provide care, despite the numerous stressors impacting their lives as caregivers. Feelings of hopelessness are often expressed by depressed caregivers (Gallagher et al., 1989; Krause, 1987; Raveis et al., 1998).

Levesque et al. (1995) found other negative consequences of stressful caregiving. This study indicated that, in addition to depression, interpersonal conflict, reduced life satisfaction, anxiety, disruptive behaviors, memory problems, and even psychosis can result from stressful caregiving situations. The results of this study suggest that if a caregiver is on the verge of suffering from any of the above conditions, stressful circumstances often reported by caregivers can lead to an exacerbation of an underlying psychiatric condition. The duration and intensity of the caregiving has been shown to intensify psychiatric problems in some studies (Levesque et al., 1995).

Along with depression and other psychiatric conditions, social relationships suffer among caregivers as well. Noelker and Wallace (1985) found that wives report that caregivng duties for dependent husbands significantly restrict their social relationships. The result of extensive caregiving is often social isolation, which, over time, can contribute to depression or other psychosocial impairment.

Abuse and neglect as a result of stressful caregiving. The most severe consequence of stressful caregiving involves abuse or neglect of the elder, often leading to forced out-of-home placement. The rates of reported elder abuse are increasing, with one source indicating that reported incidents have doubled between 1980 and 1998 (Utley, 1999). Interestingly, the number of frail elders being cared for at home also has increased

during this time period. Although no studies could be found that provide clear evidence of causation, there is a positive relationship between increased incidence of elder abuse and increased number of frail elders being cared for at home (Johnson, 1996). Although this relationship may be due to heightened awareness about reporting, another factor may be relevant to the increase in reported cases of elder abuse. The complexity of care being provided at home has increased since the 1990's (Utley, 1999). Changes in managed care policies may have the greatest impact on the expectation that family members must provide a greater complexity of nursing skills at home. The effects of managed care policies have resulted in early hospital discharges and increased expectations of family caregivers. These factors have been attributed to increased stress among family caregivers; stress that may well contribute to increased elder abuse and neglect (Patel & Rushefsky, 1995).

McKinlay et al. (1995) and Johnson (1996) found similar risk factors for abuse of a dependent elder family member. In two separate empirical studies the results indicated that use of alcohol or drugs as a coping mechanism by caregivers is a predictor of elder abuse. In addition, a history of conflict between caregiver and care-recipient was found to predict elder abuse, particularly if there had been family violence in past years. In both studies, however, the strongest predictor of abuse of a frail elder was lack of social support (Johnson, 1996; McKinlay et al., 1995).

In another study that explored predictors of abuse of frail elders, Reis and Nahmiash (1997) found that caregiver depression, along with a lack of social support, were significant predictors of abuse by caregivers. These investigators concluded that

stress and depression are important factors that consistently have led to elder abuse; thus, interventions should focus on assessment and treatment of depression, along with reduction of stress. Reis and Nahmiash (1997) also found that the availability of social supports was associated with decreased stress and depression, as well as fewer incidents of elder abuse. The implication of these findings is that the demands of caregiving may lead to a host of factors including stress, depression, substance abuse, family violence, and elder abuse or neglect. Causal relationships among these factors are not clear, however, indicating a need for continued research in this area.

Future Directions for Stress and Caregiving Research

According to Phillips (1996), there are three specific areas of research on stress and caregiving that are virtually untested. These include: (1) the effects of caregiving on the care-recipient; (2) theory development in caregiving; and (3) the influence of ethnicity in caregiving. The third area is addressed in this study. There is a growing body of literature that suggests the need for greater focus on minority aging research in the 21st century. Markides (1998), Gibson and Stoller (1998), and Phillips (1996) concurred that most any study on aging could benefit from an emphasis on cultural variations in response to aging. There is a particular need for studies that focus on long-term care and family caregiving (Janevic & Connell, 2001), to ensure that ethnically diverse elderly in the U.S. are being served from a standpoint of cultural competence.

Aranda and Knight (1997) suggested that there is a pressing need for cross-cultural research on caregiving to examine possible ethno-cultural variation in the appraisal of stressors, the use of specific coping behaviors, and identification of social

support systems that moderate the impact of caregiving stressors. They further suggested that such research is likely to show that cultural values and practices affect many aspects of caregiving, and will make a difference in how services for the elderly and their caregivers are to be effectively delivered, implemented, and evaluated in multi-ethnic communities. The following section offers a review of the literature pertaining to cultural variation in caregiving.

Cultural Variation in Caregiving

Ethnicity and culture play a significant role in the expression of stress and coping among caregivers for frail elderly family members (Aranda & Knight, 1997; Montgomery & Kosloski, 2000). Most of the research cited in the previous section, however, is based on European-American caregivers. Actions based on the findings from previously mentioned studies with the dominant majority population in the U.S. may lead to inappropriate assessments and ineffective interventions for those working with culturally diverse elderly populations. Therefore, this section includes a review of literature on culture and caregiving for the elderly, with a specific emphasis on studies that include Asian-American elderly.

Caucasian and Non-Caucasian Caregiving Studies

Although empirical studies of cultural differences among caregivers are rare, there are some identifiable trends in the literature to date. Most studies that have addressed cultural differences compare Caucasian caregivers to African-American and/or Hispanic-American caregivers. Interestingly, there are commonalties among

non-Caucasian caregivers. These commonalties have been replicated in several studies and can be summarized in the following five categories.

First, non-Caucasian caregivers tend to report a greater degree of filial obligation than Caucasian caregivers (Aranda & Knight, 1997; Conell & Gibson, 1997; Cox & Monk, 1990; Wong, Kitayama, & Soldo, 1999; Wood & Parham, 1990). Filial obligation is defined as "an individual's perceived obligation to provide material and emotional support to the one's parents" (Aranda & Knight, 1997, pg. 349). This finding is evidenced through self-report, comparisons of the number of nursing home placements in various ethnic groups, scores on scales that measure filial obligation, and qualitative responses. Greater feelings of filial obligation are found among African-Americans, Asian-Americans, Mexican-Americans, and other Hispanic-American populations of caregivers, when these groups are compared with Caucasian caregivers.

Second, there are significantly fewer nursing home placements among non-Caucasian elderly, when compared to Caucasian elderly (Aranda & Knight, 1997; Morycz, Malloy, Bozich & Martz, 1987). There are several possible explanations for this finding, including a continuation of the concept of filial obligation. In this sense, non-Caucasian ethnic groups may have a greater degree of interdependent values about care for their elderly family members. In non-Caucasian families, there tend to be more people offering to assist with caregiving duties, possibly due to deeply ingrained cultural values about care for elders and other community members with disabilities. Other explanations for more frequent nursing home placements of Caucasian elderly than non-Caucasian elderly may include indiscriminate (and possibly discriminatory) decisions

by hospital discharge planners and nursing home admissions personnel (Morrow-Howell, Chadiha, Proctor, Hourd-Bryant & Dore, 1996), and lower socioeconomic status of minority populations in the U.S., resulting in an inability to afford nursing home fees without Medicaid (Morrow-Howell et al., 1996). When an elder's means of paying for nursing home care are dependent upon Medicaid, they are subjected to waiting lists that are often quite lengthy, due to a limited number of Medicaid beds per nursing home.

Third, non-Caucasian caregivers use fewer formal services than Caucasian caregivers (Braun & Browne, 1998; Cox & Monk, 1990). It may be the case that formal services for frail elders and their caregivers are designed on the basis of Western values and hence, marketed to middle-class Caucasian-Americans. When services require out-of-pocket costs, lack of financial resources may account for less use of formal services among non-Caucasian caregivers and elders. Another possible reason for less formal service use by ethnic minorities in the U.S. is an historical distrust of institutions (Wong et al., 1999). Interestingly, the trend of reduced service use among African-Americans and Hispanic-Americans is similar, although the reasons are quite different. According to Stack (1974) and O'Rand (1996), African-Americans are less likely to use formal services for caregivers due to financial concerns, particularly, restricted opportunities in the labor market. African-Americans tend to rely on family care rather than the purchase of care. The reduced use of formal services by Hispanic-Americans may have more to do with language barriers, fear due to illegal immigration within the family, and a tradition of mistrust of institutions both in their home countries and in the U.S. (Wong et al., 1999).

Fourth, ethnic minorities in the U.S. tend to rely on assistance from informal supports, such as extended family members, friends, and others in the community (Aranda & Knight, 1997). Reasons for this tendency may be similar to those discussed previously including inability to afford services, and possible mistrust of formal institutions (Aranda & Knight, 1997; Lawton, Rajagopal, Brody, & Kleban, 1992). Another explanation may be that minorities in the U.S. tend to have larger families, resulting in more people available to provide care (Lawton et al., 1992).

Fifth, there is a substantial body of literature documenting differences in perception of caregiving burden, strain, and stress among Caucasian and non-Caucasian caregivers (Aranda & Knight, 1997; Haley, Roth, Coleton, Ford, & West, 1996; Lawton, et al., 1992; Morycz et al., 1987). Caregivers from various ethnic groups appraise burden according to the cultural context from which they come. In a study by Morycz et al. (1987), the data suggested that although ethnicity alone made little difference in the amount of family caregiving provided when comparing African-American and Caucasian-American groups, a significant interaction effect was found between ethnicity and perception of burden when caring for a frail elder. African-Americans reported less burden when caring for a family member than did Caucasians, despite performing equivalent amounts of care.

The Cultural Context of Individualism and Collectivism

The significance of the aforementioned findings can be summarized from the standpoint of cultural variation based on collectivist and individualist values. In the U.S., a strong European-American value is independence, whereas many ethnic minorities in the

U.S. have learned to rely on collectivist beliefs to survive throughout history (Triandis, McCusker & Hui, 1990). Although people of all cultures may have beliefs aligned with some aspects of both individualism and collectivism, the following trends are substantiated in the literature.

Individualism is highly valued in the U.S., Britain, and Australia (Hofstede, 1980). In contrast, collectivism is the predominant value in much of the rest of the world. Collectivist behaviors are regulated largely by the norms of those closest to the individual, beginning with family members. Individualist behaviors are regulated by individual preferences and cost-benefit analyses. Thus, norms are more important determinants of social behavior in collectivist cultures, and individual attitude or outlook are more important in individualist cultures (Triandis et al., 1990).

There are many examples of how collectivism is demonstrated behaviorally with respect to caregiving. First, collectivist cultures emphasize a paternalistic hierarchy, resulting in women primarily responsible for care of the elderly, and children having primary responsibility for parental care. Second, because harmony is an important defining attribute of collectivist cultures, female family members provide care as a means of not disrupting harmony (McLaughlin & Braun, 1998). Third, a major difference between collectivism and individualism has to do with the differing concepts of self-reliance. Self-reliance is defined in individualist cultures through the individual's ability to make independent choices, and still be accepted within social norms. In collectivist cultures, however, self-reliance has a different meaning. In a collectivist culture, self-reliance is described as adopting a position of not being a burden to those close to you (Triandis et

al., 1990). Therefore, family caregivers are less likely to interpret the stresses of caregiving as burdensome. Providing care to a frail elderly family member is a cultural norm and expectation in collectivist cultures, and reflects harmony within family groups (Triandis et al., 1990).

A fourth concept that defines collectivism is that of familism. Familism is defined as: "a strong identification and attachment of individuals with their families (nuclear and extended), and strong feelings of loyalty, reciprocity and solidarity among members of the same family" (Aranda & Knight, 1997, pp. 349). This definition may have strong implications for understanding family caregiving among ethnic minority cultures. Aranda and Knight (1997) further explain the extent to which familism may impact caregiving through the following values: (1) family obligations (i.e., the individual's perceived obligation to provide material and emotional support to the family); (2) perceived support from the family (i.e., the perception of family members as reliable providers of help and support to solve problems), and (3) the family as the primary unit of reference. Further, it has been shown that African-Americans, Hispanic-Americans, and Asian-Americans all adhere to this value of familism to a higher degree than what is found among Caucasian-American families (Triandis et al., 1990).

Asian-American Caregiving Studies

Collectivist values among Asian ethnic groups have been the basis for several caregiving studies that compare Asian and non-Asian populations of caregivers (Mackenzie & Holroyd, 1996; Nilchaikovit, Hill & Holland, 1993; Takamura, 1991; Yeo, 1995; Youn, Knight, Jeong, & Benton, 1999). Although there are clear differences in

traits, values, and behaviors among the various Asian cultures, a common trait when investigating the influence of stress among caregivers is that of familism. Empirical studies support the importance of the role of familism among the following cultures: Korean (Yoon, Choi, & Han'guk, 1994; Youn et al., 1999); Japanese (Harris and Long, 1993; Harris, Long, & Fujii, 1998; Yamamoto & Wallhagen, 1998); Chinese (Mackenzie & Holroyd, 1996; Ngan & Cheng, 1992; Poulshock & Deimling, 1984); and Filipino (McBride & Parreno, 1996; Superio, 1993) cultures.

There are several themes that become apparent when looking at the various Asian cultures with respect to caregiving. First, the concept of filial obligation toward caregiving for family elders is evidenced in Korean, Chinese, Japanese, and Filipino cultures. In contrast, this concept is not evidenced strongly among Caucasian-Americans. Second, the concept of familism is again evidenced in the Asian cultures reviewed here, but not evidenced strongly among Caucasian-Americans. Third, there is a distinct lack of use of services for caregivers among non-Caucasian ethnic groups in the U.S., including the Asian-American ethnic groups reviewed here. All of these themes are relevant to the identification of cultural and ethnic differences in caregiving for the elderly, and have implications for practice, policy, and research. Cultural differences between Caucasians and the Asian cultures reviewed provide the basis for designing the proposed study in such a way that Caucasian-Americans are compared with one Asian ethnic group, that of Japanese-Americans, with regard to stress among caregivers.

Japanese-Americans and Caregiving

There are four major empirical studies that indicate trends with respect to Japanese cultural beliefs about caregiving. Two studies by the same researchers focus on the traditional role of the daughter-in-law as caregiver to frail elderly in Japan (Harris and Long, 1993), along with the changing role of men in elder care (Harris, Long, & Fujii, 1998). Results of these studies indicate that there are still strong beliefs in filial obligation, with particular emphasis on the role of the daughter-in-law. However, filial obligation among Japanese adult children of frail elders can be understood within a different context than in other Asian cultures. The concept of *sekentei* represents a possible alternative motivation for providing care to elders among Japanese people. *Sekentei* is defined as social appearances that cause an individual to worry about others' observations and evaluations of his or her behavior. With regard to caregiving, then, *sekentei* refers to a rationale for providing care to frail elders based on the influence of societal expectations, rather than duty toward parents (Asai, 2002).

Harris and Long (1993) found high levels of perceived stress and burden among Japanese daughters-in-law caregivers. In a follow-up study, Harris et al. (1998) focused on the role of men in caregiving in Japan and found that there is still a major expectation that caregiving is a duty of Japanese women. The men in this study experienced a high degree of role conflict, but provided care to family elders due to stated feelings of love, along with a strong concern for societal perception and judgment. Interestingly, male caregivers in Japan also experienced high levels of stress, but tended to use more formal services than their female counterparts.

Consistent with findings reported by Harris et al. (1993; 1998), Elliott and Campbell (1993) found that attitudes toward provision of care for frail elders is changing among Japanese and Japanese-American caregivers. The result of changes in caregiving attitudes are that Japanese families are beginning to mix traditional care with newer options when caring for their frail elders.

In contrast to the above findings, Yamamoto and Wallhagen (1998) found that Japanese still adhere to traditional values of filial obligation in caregiving despite their increasing use of formal services. Use of formal services by most Japanese caregivers is not considered a viable option, however, until caregivers reach the limit of their tolerance. One explanation offered for this finding is that if caregivers in Japan make a decision to use formal services, they are going against social norms regarding family caregiving, resulting in criticism by other family members and the larger society for their decision. This is an example of *sekentei* (Asai, 2002). It is not surprising, then, that Braun and Browne (1998) found that Japanese-American caregivers in Hawaii use few formal services. Despite the changing attitudes regarding care for the elderly in Japanese culture, fear of going against the societal norms is still strong.

Prior to a presentation of the proposed study, two models for predicting stress among caregivers are presented. A brief discussion of these models provides an understanding of theoretical frameworks used in prior studies. Noteworthy in the following models is the limited or incomplete attention given to ethnic differences among caregivers.

Models of Stress and Coping Among Caregivers

A review of literature on models of stress and coping among caregivers reveals that there is some agreement on the major components that comprise a multivariate theoretical model that attempts to explain caregiving stress (Aranda & Knight, 1997; Lawton, Rajagopal, Brody, & Kleban, 1992; Pearlin, Mullan, Semple, & Skat, 1990; Poulshock & Deimling, 1984; Schulz, Tompkins, & Rau, 1988; Zarit, 1994). In general, stress and coping models include the following explanatory variables: (a) contextual or background variables; (b) primary stressors; (c) the caregiver's appraisal of the demands of caregiving; (d) potential mediators; and (e) the consequences of stressful caregiving.

Contextual or background variables include such factors as age, gender, socio-economic status of the caregiver and care- receiver, and relationship of the caregiver to the frail elder. Primary stressors include strain experienced by the caregiver as a result of directly caring for a frail elder, along with strains resulting from other domains of the caregiver's life such as family and work responsibilities. The caregiver's appraisal of demands as stressful or satisfying is included in all major models of stress and caregiving, giving credence to perceptions as being an important determinant of adaptational outcome. Potential mediators of stress among caregivers include coping, attitudes, behaviors, and social support. Consequences of the demands of caregiving are generally measured by outcome variables such as depression, quality of life, or mental health (Aranda & Knight, 1997).

Examples of the major models used in caregiving and stress studies include: (1) Caregiver Stress-Coping Model (House 1974; & George, 1980); (2) Model of Stress &

Coping Among Caregivers (Haley et al., 1987); (3) The ABCX Model Applied to Caregiving (Biegel, Sales, & Schulz, 1991); and (4) Model of Caregiving Impacts & Effect on Provision of Care (McKinlay et al., 1995). All of these models utilize a combination of the "context variables - stressors - appraisal - mediators - consequences" in stress and caregiving modeling. As research proliferated based on the above models, studies began to emphasize the multidimensional nature of caregiving, evidenced by the Stress Process Model (Aneshensel et al., 1995).

The Stress Process Model

A comprehensive theoretical model was developed, called the Stress Process Model (Aneshensel et al., 1995), that emphasized the complex and multidimensional nature of caregiving over time (Pearlin et al., 1990; & Zarit, 1990). The Stress Process Model is one of the most comprehensive caregiving models to date. Major components of the model include contextual factors (e.g., caregiving history; family context); primary stressors (e.g., ADL dependencies; behavior problems; cognitive status); appraisal of primary stress (e.g., role captivity; role overload); secondary stressors (e.g., family conflict; work conflict; financial strain); outcomes (e.g., psychological distress; physical health; care transition); and mediators/buffers of stress (e.g., social support; psychological resources).

There are two strengths to this theoretical model. First, the contextual factors focus on the family environment of care, allowing for such variables as feelings of obligation, size of family support networks, quality of familial relationships, culture and ethnicity, and duration of care. Second, the Stress Process Model is guided by the

concept of "proliferation," or the spread of stress, strain, and conflict from the actual provision of care to other life domains (e.g., family, work, and social life). As caregiving stress proliferates, global indicators of functioning are likely to be affected, such as psychological well-being (e.g., depression, anger, guilt) (Aneshensel et al., 1995; Pearlin, et al., 1990; Zarit, 1994). Variables thought to predict stress in the present study were selected based on their inclusion in this theoretical model, along with their demonstrated importance and prevalence in prior caregiving studies.

The Stress-Coping Model: Race/Ethnicity

Scarce in the stress and caregiving literature are empirically-based studies that examine the ethno-cultural influence of caregiving. Recently, however, Knight, Silverstein, McCallum, and Fox (2000) tested a model of stress and coping among caregivers that was specifically developed to determine the extent to which the influence of ethnicity and culture impact emotional distress among caregivers. The development of this model was based on previous studies of caregiving where ethnic minorities in the U.S. reported caregiving to be less stressful than Caucasian-Americans (Haley, West, Wadley, Ford, White, Barrett, Harrell, & Roth, 1995; Hinrichsen & Ramirez, 1993; Mintzer & Macera, 1992). Interestingly, ethnic minorities in the U.S. did not exhibit lower levels of depression. An example of this finding is that African-Americans do not perceive caregiving as "stressful"; yet, they are clearly affected by the demands of caregiving when depression is measured (Knight et al., 2000).

The Stress-Coping Model: Race/Ethnicity (Knight et al., 2000) offers a conceptual model of the causal process that may lead from race/ethnicity to psychological

distress among caregivers of frail elders. The basic premise of this model is that factors associated with ethnicity and cultural practices of the caregiver are important in the prediction of emotional distress among caregivers. The effects of active coping, burden, and emotion-focused coping lead to the level of emotional distress a caregiver may experience. Active coping, burden, and emotion-focused coping are thought to be deeply embedded within cultural beliefs, attitudes, and the resulting actions. Among ethnic minorities the perception that caregiving is not "stressful" is common. This finding is in contrast to that of Caucasian-Americans, who tend to view caregiving as very stressful. A preliminary understanding of stress among ethnically diverse caregivers has been started through the Knight et al. (2000) model described in this section. However, a clearer understanding of the effects of cultural variation within the sociocultural context of this stress and coping framework is still needed. The present study provides additional clarity in the understanding of ethno-cultural differences affecting stress among caregivers.

The following sections present empirical support for seven factors that are hypothesized to predict caregiving stress in the present study. These factors are based on empirical evidence in the prediction of stress in past caregiving studies.

Factors that Contribute to Stress Among Caregivers

The preceding sections have identified some gaps in the stress and caregiving literature, particularly with regard to how factors associated with ethnicity may affect the prediction of stress among caregivers. The purpose of the proposed study is to test the effects of hypothesized predictors of stress, and to compare the ability of the factors to predict stress among Japanese-Americans and Caucasian-Americans. Past studies have

shown the importance of the following variables in predicting caregiver stress: time spent caregiving, formal service use, functional ability of the elder, social support, and physical health of the caregiver. Two variables, "employment status of the caregiver," and "attitude toward family caregiving of elders," are included in the model as exploratory variables. The following sections describe each of the hypothesized predictors contained in the present study.

Time Spent Caregiving

Most studies on caregiving have used a measure of frequency and duration of caregiving as a predictor of stress among caregivers (Barber, 1988; Miller, 1989; Miller & McFall, 1991; Montgomery, Stull, & Borgatta, 1985). There are two significant and consistent findings in the literature regarding the effects of duration and frequency on stress among caregivers. First, duration of caregiving, as indicated by numbers of days, months, or years care has been provided, tends to contribute to caregivers' stress at two significant points in time: (1) when a caregiver first begins caring for an elderly family member; and (2) after years of providing complex care (McKinlay et al., 1995). In the McKinlay et al. (1995) study, a longitudinal design was used to track over 5,000 caregivers for the elderly over a 7-year period. This study also showed that when the level of care changed, caregiver stress increased. These findings suggest that caregiving is particularly stressful when it is new, when there are changes in the elder's condition resulting in more complex care, and when care needs are chronic and long-term.

Second, frequency of caregiving, as indicated by number of hours per day care is provided, is positively correlated with feelings of stress. The longer a caregiver provides

care without a break, the greater the perceived stress (Segal & Schall, 1996). If respite care is available, or if other services are employed to provide some relief throughout the day, perceived stress is reduced significantly (Zarit, Stephens, Townsend, & Greene, 1998). In addition, Zarit et al. (1998) found greater psychological well-being among caregivers who used adult day care in comparison to their pre-attendance status in day care, and to a control group that received no respite. The question then becomes, was it the relief from constant caregiving that resulted in reduced stress and increased well-being, or the use of formal services to assist with care? Zarit et al. (1998) believed that the improvement in caregivers' well-being was due to the break in caregiving itself; however, use of formal services was also found to significantly reduce stress and increase feelings of well-being.

Formal Service Use

Lack of formal service use has been shown to contribute to stress among caregivers (Tennstedt, McKinlay, & Sullivan, 1989). Formal services include adult day care, private duty nursing care, case management programs, Meals on Wheels, respite care, support groups, and educational programs for caregivers (Hooyman & Gonyea, 1995). Some authors consider many of the above formal services to fall under the category of "respite care" (Zarit, 1990).

Based on conclusions from a meta-analytic review of interventions aimed at reducing caregiving stress, respite care has been shown to significantly reduce distress and depression among caregivers (Knight, Lutzky, & Macofsky-Urban, 1993). All studies described in the meta-anlysis used experimentally controlled designs. The analysis

focused on studies that compared three interventions: psychosocial; support group; and respite care. Respite care was found to significantly reduce caregiver distress, while psychosocial interventions produced minimal reduction of stressful symptoms, and support groups showed no effect.

Not surprisingly, one of the most common requests by caregivers for the elderly is respite. Respite care, however, along with other formal services, are not always utilized by caregivers for a multitude of reasons. Some of the reasons for lack of use of formal services include: (1) lack of knowledge that services exist; (2) unwillingness to accept formal services; (3) service is not accessible to location where need is greatest; (4) service is financially prohibitive (i.e., not covered by insurance); (5) inadequate to meet caregiver's needs; (6) eligibility requirements to obtain service too are stringent for the population served; and (7) distrust of service providers (Blieszner & Alley, 1990). Where minorities are concerned, even fewer formal services are used when compared to Caucasians in the U.S. (Braun & Browne, 1998; Cox & Monk, 1990), indicating that some of these reasons for lack of service use may particularly affect ethnic minorities.

Studies have shown that use of appropriate services, particularly respite care, may reduce stress associated with caregiving (Montgomery & Borgatta, 1989). For example, Montgomery and Borgatta (1989) studied the effects of formal support use with caregiving families and found that after 12 months of receiving a myriad of services, subjective stress was lower than in a caregiving control group that received no services. The findings suggested that formal services can be of great benefit in reducing stress if the services are appropriate for caregiver's needs, accessible to the caregivers, continued for

satisfactory duration, and if a multitude of appropriate services are available to enhance the strengths of the family caregivers (Montgomery & Borgatta, 1989). Therefore, exploration of formal service use among caregiving families warrants continued consideration in studies on stress among caregivers.

Functional Ability

The most common indicator of functional status among frail elders is the amount of assistance needed, usually measured by Activities of Daily Living (ADL's) and Instrumental Activities of Daily Living (IADL's) scales (Caserta, Lund, Wright, & Redburn, 1987; Lawton, Brody & Saperstein, 1989; McFall & Miller, 1992). ADL and IADL assessments measure the degree of impairment of the elder. Impairment refers to the inability of elders to perform tasks such as bathing, walking, dressing, and eating (ADL's); and shopping, pay bills, and housekeeping (IADL's).

One criticism of caregiving research is that care-recipients are not always a homogeneous group based on the level of care they receive (Zarit & Toseland, 1989). Use of ADL and IADL assessments allow for greater homogeneity within a subject pool of caregivers, by determining how much care is needed and what type of care is being provided. A more homogeneous sample with regard to ADL needs can lead to greater reliability of findings and greater generalizability to a specific caregiving population. Although ADL and IADL checklists are not the only ways to obtain information about how much care is being provided, they are standard assessment instruments used in research and practice (e.g., determination of level of care for nursing home placement).

Interestingly, the findings from one study indicated a surprising absence of differences in perceived stress among caregivers categorized according to their dependent's care needs (Bindoff, Clifford, & Young, 1997). This study, however, showed a significant increase in psycho-emotional disturbances among caregivers providing greater levels of ADL care. There is some evidence from this study that the greater the ADL needs, the greater the level of depression. In any case, most studies that include an ADL measure offer support for the finding that the greater the amount of physical assistance required by the elder care-recipient, the higher the reports of perceived stress among caregivers (Segal & Schall, 1996). In summary, with the exception of the Bindoff et al. (1997) study, a greater need for ADL and IADL assistance has been shown to predict stress among caregivers.

Social Support

Social support is also known as informal support in the caregiving literature. Informal support refers to a helping resource or network that is typically unorganized, with a variety of methods of support offered to the primary caregiver. Support can be given informally in the context of physical assistance with ADLs, respite care, emotional support, financial assistance, or assistance with non-caregiving responsibilities such as child care or grocery shopping. Informal support can come from other family members who reside in the home, extended family members living elsewhere, or friends. Informal caregivers are typically distinguished from formal caregivers based on the voluntary nature of their support -- support that is offered without expectation of financial compensation.

The amount and type of informal support significantly contributes to a reduction in stress among primary caregivers (Horowitz & Dobrof, 1982; McKinlay & Tennstedt, 1986; Soldo & Myllyluoma, 1983; Stephens & Christianson, 1986; Stone et al., 1987). In fact, the most consistent predictor of reduced stress among caregivers is the number and quality of social supports available to the primary caregiver (Burack-Weiss, 1995; Creasia, 1992; Fink, 1995; Franks & Stephens, 1996; Haley, et al. 1987; Noelker & Bass, 1989; Thompson et al., 1993). A consistent finding in caregiving research is that emotional and tangible support from friends and family members enhances the individual's ability to cope with both the acute and chronic phases of elder care (Evans, Bishop, & Ousley, 1992). According to Creasia (1992), who studied cardiac patient care in a longitudinal study, the quality of informal support can make a difference in successful lifestyle adjustment to prevent subsequent cardiac problems, including future heart attacks. In addition, a study of the effects of family resources on stress and well-being found that a strong social network reduces stress among primary caregivers (Fink, 1995). Further, the type of social support that is most useful comes from those closest to the caregiver, and is offered without expectation of reciprocation. The more people that are close to the caregiver and that offer voluntarily assistance to the primary caregiver, the lower the stress (Fink, 1995).

Alternatively, when a caregiver does not have an adequate system of informal support, the result is isolation. Isolation often results in a decreased sense of well-being, and can even jeopardize elder care (McKinlay et al., 1995). Depression can result as well, from lack of social support (Franks & Stephens, 1996). Several studies on caregiving predicted that a lack of social support results in increased depression, and found that a

significant negative relationship exist between the two variables (Burack-Weiss, 1995; Haley et al., 1987; Thompson et al., 1993). Therefore, increased social support appears to be one of the strongest predictors of reduced stress among caregivers for the elderly, while a lack of social support predicts increased depression.

Health of Caregiver

Caregiver's health is sometimes considered the central dependent variable in caregiver stress studies (Aneshensel et al., 1993). In the proposed study, however, physical health of the caregiver is treated as an independent variable, based on the findings of Pearlin et al. (1990) and Aneshensel et al. (1993). Both research groups found that one of the primary reasons that a frail elder becomes institutionalized is due to poor physical health of the caregiver. Impaired physical health of the caregiver may exacerbate stress associated with caregiving, resulting in institutionalization of the elder.

The caregiver's physical health is compromised in three ways. First, cardiovascular problems such as hypertension or heart attack (Snyder & Keefe, 1985), second, decreased immune function (Kiecolt-Glaser & Glaser, 1994), and third, broken bones and sprained joints (Moritz et al., 1992), have been shown to result from assisting frail elders. Results of a study by Moritz et al. (1992) indicated that spouses who provide care to frail elderly generally function normally in the caregiving role; however, they suffer from health problems that can have serious consequences. Both hypertension and impaired immune functioning increase the risk of mortality and morbidity in older populations (Moritz et al., 1992), and add to the stress experienced by caregivers (Aneshensel et al., 1995).

Employment Status

Although not highly researched in the caregiving literature, the effects of caregiver's employment outside the home in the prediction of stress is speculative at present. Hence, employment status as a predictor of stress among caregivers is worthy of further investigation. To date, there is some conflicting empirical evidence of the relationship between caregiver employment and stress. Caregiver employment has been shown to increase the level of stress due to the demands of multiple roles (Horowitz, 1985; Orodenker, 1991; Scharlach & Boyd, 1989). In contrast, employment also has been shown to buffer the effects of stress due to a relief from caregiving duties during working hours (Haworth, 1997; Martire, Stephens, & Atienza, 1997).

In a study investigating the effects of work and leisure on well-being, Haworth (1997) found that the relationship between the three constructs of work, leisure, and well-being is a tenuous one. In fact, some people found greater enjoyment in work than in leisure. Relating this to caregiving, sometimes caregivers report a preference to work outside the home as a means of respite, and even enjoyment in some cases, particularly when the caregiving is most stressful at home. The working situation provides an opportunity for the caregiver to engage in pleasurable activities, perhaps due to increased opportunities for socialization, intellectual stimulation, or expression of independence, resulting in increased feelings of well-being. (Martire, et al., 1997; Neal et al., 1993).

In contrast, there is evidence that caregivers who work outside the home report higher levels of stress, when compared to non-working caregivers (Orodenker, 1991; Scharlach & Boyd, 1989). Not surprisingly, Horowitz (1985) found that female

caregivers experienced considerably higher stress than male caregivers who were employed. Horowitz provided several explanations for this finding, including coping skill differences, males receiving more social support, and demanding multiple roles of many women who may also have childcare responsibilities. Perhaps it is the case that caregivers who must work for financial reasons experience higher levels of stress than those who choose to work for respite from caregiving. No studies are available to substantiate this premise, and clearly more research is needed to explore the relationship between employment and stress among caregivers.

Attitude Toward Family Caregiving

There is limited research on the effects of caregiving attitudes, beliefs, and values on caregiver's experience of stress. There are, however, reasons to believe that an individual's motivation for providing care to an elderly family member may affect the amount of stress experienced (Aneshensel et al., 1993; Aranda & Knight, 1997). These motivations, in part, stem from cultural beliefs and social norms pertaining to familial expectations about care provision for the elderly (Aranda & Knight, 1997). For the purpose of this study, "attitude toward family caregiving" is explored and measured as an attempt to address one aspect of potential motives for providing care to elders. The rational for focusing on "attitude toward family care," rather than beliefs, values, or other possible underlying motivations, follows.

With respect to caregiving for the elderly, there are major differences between Eastern and Western beliefs about elder care. The concept of burden in caregiving, for example, is a "Western" interpretation of care for parents or spouses. In many Asian

cultures, burden in caregiving for a frail elder is a concept that is not recognized. Rather, the concept of *filial piety* better represents attitudes toward caregiving in many Asian cultures. When presented with an option for nursing home placement, many Asian family caregivers cannot openly consider this option, because they believe it is their obligation to provide care at all costs (Triandis et al., 1990). If a family member is placed in a nursing home, shame is felt by family members who made this decision (Yamamoto & Wallhagen, 1998). Stress associated with caregiving is unlikely to be expressed to health care workers or researchers in many Asian families, due to feelings of shame (Braun & Browne, 1998). The result of these cultural beliefs, attitudes, and values is that family members are expected to endure the burden of caregiving without complaint (Aranda & Knight, 1997).

Several recent studies have examined the caregiver's perceived role in caregiving as a factor contributing to stress. One study conducted by Levesque et al. (1995) found that feelings of obligation about caregiving for elders may result in a belief that there are no other options. A belief in "having no options" can produce feelings of hopelessness, which are highly correlated with a variety of unhealthy psychological states, including depression, anxiety, interpersonal conflict, and reduced life satisfaction. One of the few empirically-based studies to date on depression and caregiving found a high positive correlation between depressive symptomology of the caregiver and a greater sense of filial obligation (Raveis et al., 1998). The question remains as to whether increased stress reaction is also related to a greater sense of filial obligation. The proposed study provides

further empirical evidence of the importance of attitudes toward family caregiving of elders in the prediction of stress among caregivers.

Stress as an Outcome Variable

There are several ways that stress has been operationalized in the literature. Some studies measured subjective stress (e.g., perceived stress), while other studies seek objective measures of stress (e.g., blood pressure, heart rate, stress scales). Historically, the first caregiving studies in the 1980's measured *burden*, and later *strain* among caregivers (George & Gwyther, 1986; Poulshock & Deimling, 1984; Zarit, 1990; Zarit et al., 1986). Critical evaluations of caregiving research revealed that the constructs of *burden* and *strain* were limited as measurable constructs of what caregivers were experiencing (Kane & Kane, 2000). Studies attempting to measure stress among caregivers emerged in the late 1980's and early 1990's. Measuring stress rather than burden or strain posed a similar challenge in terms of defining and operationalizing stress. Many studies on stress among caregivers focused on operationalizing stress in terms that were believed to better represent the effects of caregiving, such as depression and life satisfaction (Aneshensel et al., 1993; Chiriboga, 1995; Dilworth et al., 2002; Montgomery & Kosloski, 1994; Zarit, 1990).

Although stressors associated with caregiving have been thoroughly identified in the literature, stress as a construct remains difficult to measure, particularly among ethnic minority populations (Knight et al., 2000). Based on an extensive review of literature, R. L. Kane and R. A. Kane (2000) suggested that there is evidence that multiple indicators of stress, such as life satisfaction and depression, have greater utility in explaining the impact

of caregiving. Therefore, these two indicators of stress, depression and life satisfaction, are used in the proposed study. These indicators are selected based on their prevalence as outcome measures in caregiving studies (Aneshensel et al., 1995; George & Gwyther, 1986; Pearlin et al., 1990; Zarit, 1994), and the belief that depression and life satisfaction are relevant indicators of stress among ethnically diverse elders (Dilworth et al., 2002; Dubanoski, Heiby, Kameoka & Wong, 1996). The relationship between stress and the indicators of depression and life satisfaction are explained in the following sections.

Depression

Many studies on stress and caregiving document a strong positive correlation between depression and stress among caregivers (Biegel, Sales & Schulz, 1991; Fink, 1995; Gallagher et al., 1989; George & Gwyther, 1986; Haley et al., 1987; Knight et al., 1993; Krause, 1987; Pearlin et al., 1990; Raveis et al., 1998; Schulz, Gallagher-Thompson, Haley, & Czaja, 2000; Wadley & Haley, 2001; Yates, Tennstedt, & Chang, 1999; Zarit et al., 1986). The relationship between stress and depression is one of the most stable findings in the caregiving literature, evidenced by the number of studies cited above, and the long span of years in which this finding has been replicated (e.g. 1986-2001). Empirical evidence in support of depression is an indicator of stress among caregivers follows.

In a longitudinal study of the relationship between depression and severity of the elder's care needs, a cross-sectional multivariate analyses revealed a significant positive relationship between caregiver depression and greater severity of the elder's care needs (Neundorfer, McClendon, Smyth, Stuckey, Strauss & Patterson, 2001). Presented earlier

was the evidence supporting the relationship between greater severity of elder's care needs with stress (Segal & Schall, 1996). Therefore, the Neundorfer et al. (2001) study indirectly supports findings that stress and depression are positively related.

Similarly, Yates et al. (1999) measured a myriad of factors that in other studies represent increased caregiving stress (e.g., functional disability, hours of informal care, lack of emotional support, lack of formal services, and role overload), and measured only depression as an outcome variable. Findings from this study indicate a significant correlation among factors that contribute to stressful caregiving and depression.

Knight et al. (2000) used the construct of emotional distress to represent the dependent variable in their study on the ethno-cultural effects of caregiving and stress. The authors operationalized emotional distress using measures of anxiety, depression, and general psychological functioning. The findings showed significant relationships between caregiving conditions (e.g., increased duration of caregiving; greater severity of elder's dysfunction) and depression, but a weaker relationship between caregiving conditions and other measures of emotional distress (e.g. anxiety and psychological functioning). An implication of this study is that depression is a viable indicator of stress among caregivers. A second implication is that the use of multiple indicators may be important in the operationalization of stress among multicultural caregivers, to account for differences in reactions to stressful caregiving based on cultural norms (Knight et al., 2000).

Life Satisfaction

Although much of the caregiving literature has focused on the overwhelming negative and adverse life consequences of caregiving for frail elders, there have been some

attempts to measure the potentially positive effects of caregiving (Lawton et al., 1989; Kinney & Stephens, 1989). Terms used in the measurement of positive effects of caregiving include "well-being," "life satisfaction," "happiness,", and "morale" and these terms are sometimes used interchangeably in the literature (George & Bearon, 1980). The construct of "life satisfaction" is examined in the present study, and is defined by the following concepts. Life satisfaction is the extent to which the caregiver: (1) takes pleasure from daily activities; (2) regard his/her life as meaningful; (3) feels successful in achieving life goals; and (4) maintains a positive self-image and optimistic attitudes and moods (George & Bearon, 1980).

Research comparing the effects of caregiving with the effects of other life events found that people providing care to frail elders scored significantly lower on measures of life satisfaction than non-caregiving control groups (Anthony-Bergstone, Zarit, & Gatz, 1988), giving credence to the argument that life satisfaction is often compromised among caregivers. Some studies found a negative relationship between caregiving (as an IV) and life satisfaction (as a DV) (George & Gwyther, 1986; Segal & Schall, 1996; Tebb, 1995; Turner & Avison, 1992). Other studies used life satisfaction as a dependent variable, representing one indicator of stress among caregivers (Levesque et al., 1995; Loomis & Booth, 1995; Pearlin et al., 1990). None of these studies used life satisfaction alone as an indicator of stress, but rather, used it in combination with other indicators such as psychological distress and depression (Levesque et al., 1995), marital happiness, psychological distress, financial strain (Loomis & Booth, 1995), physical and mental health, and ability to sustain social roles (Pearlin et al., 1990). Pearlin et al. (1990) offered

further rationale for using life satisfaction along with other indicators of stress. They suggested that stress is not a singular construct. Rather, stress among caregivers is a mix of circumstances, experiences, responses, and resources that vary considerably among caregivers, resulting in variation of impact on caregiver's health and behavior. Therefore, stress among caregivers is best measured through multiple indicators, such as life satisfaction (as a potentially positive indicator), and depression (as a potentially negative indicator).

In summary, theoretical models of stress and coping presented earlier are useful in predicting stress among caregivers of the frail elderly to some degree. Commonalties among the predictors of stress in these models provide the basis for the present study. The common variables among the models presented above, along with variables with the greatest empirical support for predicting stress, were included in the model of factors hypothesized to predict stress in the present study. Life satisfaction and depression have demonstrated utility as indicators of stress, and may be particularly relevant among multi-ethnic caregivers (Dubanoski et al., 1996). In addition, differences in Caucasian and non-Caucasian attitudes toward family care of elders suggest that cultural influences may be important in understanding stress among ethnically diverse caregivers.

The Present Study

The purpose of the present study was to examine the importance of social, environmental, and attitudinal factors that may contribute to stress among family caregivers of frail elders. The hypothesized factors examined in this study include employment status, time spent caregiving, formal service use, functional status, social

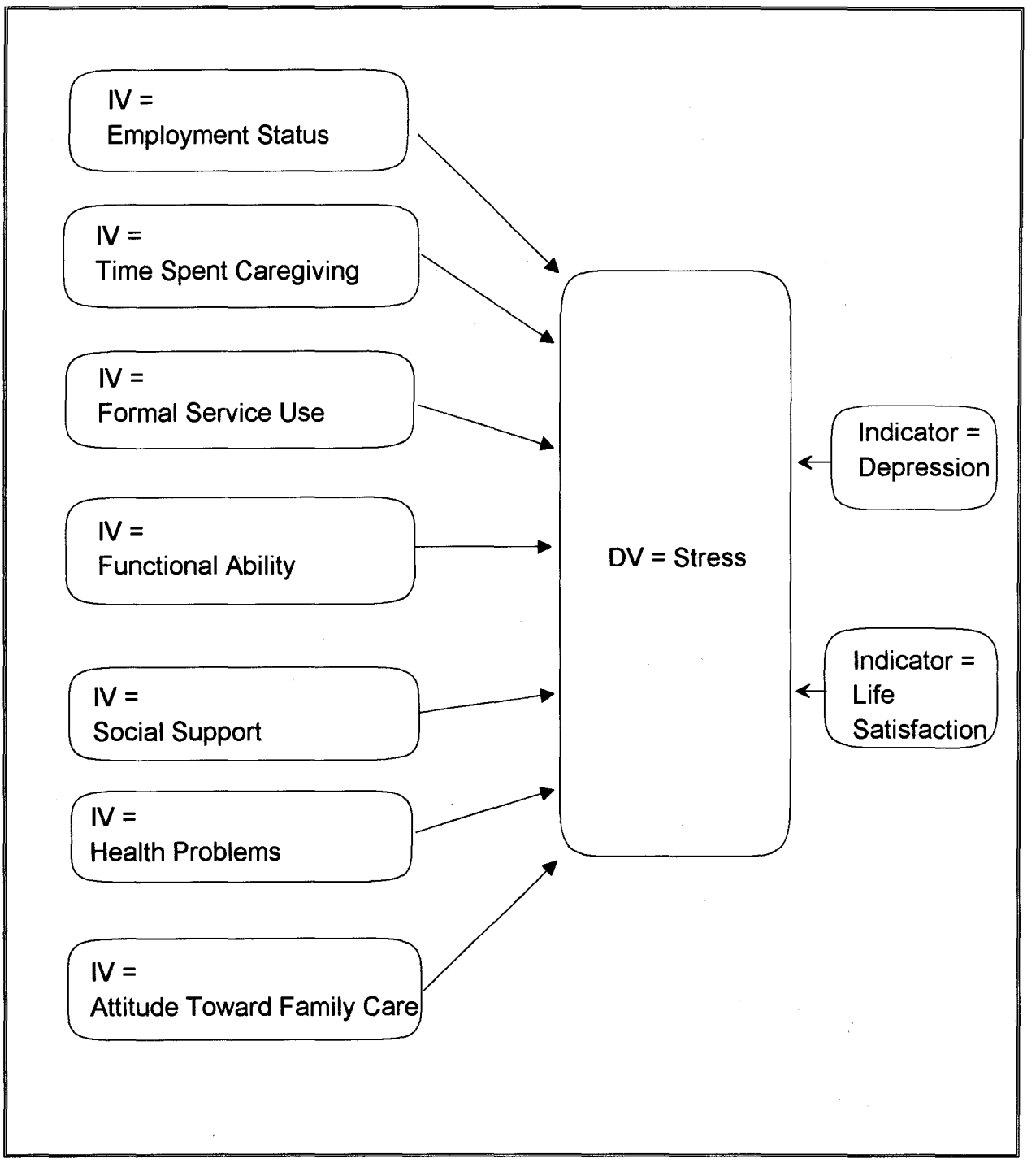
support, health of the caregiver, and attitude toward family care. These predictor variables are based on previous caregiving research, put together into one model for the first time in the present study. Testing the model variables among two ethnic groups (Japanese-Americans and Caucasian-Americans) can contribute valuable knowledge to the caregiving literature. The model includes two exploratory variables, that of "employment status" and "attitude toward family care." The "employment" variable has contradictory findings in the caregiving literature, and the "attitude" variable has received little attention in previous caregiving studies. In addition, differences between Japanese-American and Caucasian-American caregivers with respect to the hypothesized predictors of stress is a secondary focus of the present study. Figure 1 summarizes the hypothesized relationships among variables in the this study. This study tested the following hypotheses among Japanese-American and Caucasian-American caregivers of frail elders:

Hypothesis 1: Increased time employed outside of the caregiving role, increased time spent caregiving, reduced use of formal services, decreased functional ability of the elder, decreased social support, more health problems of the caregiver, and stronger attitude toward family caregiving of elders will be directly related to greater depression among caregivers.

Hypothesis 2: Decreased time employed outside of the caregiving role, decreased time spent caregiving, increased use of formal services, increased functional ability of the elder, increased social support, fewer health problems of the caregiver, and weaker attitude toward family caregiving of elders will be directly related to greater life satisfaction among caregivers.

Figure 1.

Factors Hypothesized to Predict Stress Among Caregivers



CHAPTER 2

METHOD

Design

This study employs a correlational design to test the hypothesized relationships between predictor variables (e.g., employment status, time spent caregiving, formal service use, functional ability, social support, physical health, and attitude toward family care of elders) and the criterion variable of stress, as indicated by depression and life satisfaction.

Participants

Participants were caregivers of frail elders that were recruited from three sources: (1) caregiver support groups, (2) adult day care centers, and (3) home health care agencies on Oahu, Hawai'i. Participants came from the following agencies: Project Dana Caregiver Support group, Castle Caregiver Support group, Windward Adult Day Care, Waipahu Adult Day Care, and Castle Home Care. All study participants were individuals who care for an elderly family member at home. Caregivers were asked for their voluntary participation in this study through an invitation letter distributed by each agency's director or staff members. The letter inviting caregivers to participate in this study appears in Appendix A.

Screening criteria. The following criteria were used to determine caregivers' eligibility for inclusion in this study. At the time of completing the survey, caregivers must have been: (a) 18 years of age or older; (b) providing care to an elder over the age of 60 years, residing in the community (hired caregivers were not included in this study);

(c) assisting with at least three activities of daily living (ADL's) for an elder; (d) identified as either Japanese-American or Caucasian-American.

Characteristics of caregivers. Table 1 summarizes characteristics of the caregiver-participants in this study. As shown in this table, the average age for the Caucasian sample (59.9 years) is slightly higher than the Japanese sample (57.3 years). Caregivers were predominantly female (between 76 - 81% female), which is consistent with samples from other caregiving studies. Although most of the caregivers in both samples were daughters of the elders for whom they provided care, there were more Japanese-American caregivers as daughters (53% daughters), than Caucasian caregivers as daughters (39% daughters). This was a fairly educated sample, evidenced by the mean education level representing three years of college for both Japanese and Caucasian samples.

Characteristics of elder care-recipients. Table 2 summarizes characteristics of the elders being cared for by participants in this study. As shown in this table, the average age of elder care-recipients is 81.9 years for the Japanese-American sample, and 80.3 years for the Caucasian sample. Most of the elders receiving care were female (69% Japanese; 63% Caucasian), and most elders were parents of their caregivers (45% Caucasian; 61% Japanese). Based on these percentages it can be observed that Japanese-American elders have more caregivers that are their adult children, while Caucasian elders have a higher percent of spouses as their caregivers (16% Japanese; 30% Caucasian). Also to be noted is that Japanese elders are more likely than Caucasian elders to have a daughter-in-law as their caregiver (7% Japanese; 2% Caucasian).

Table 1.

Characteristics of Participant Caregivers

Characteristic	Japanese (n = 98)	Caucasian (n = 86)
Age		
M	57.3	59.9
SD	13.5	15.9
Gender (%)		
Male	19.4	24.4
Female	80.6	75.6
Education Level		
M	15.4	15.0
SD	2.3	2.5
Income (%)		
Less than $10,000	5.1	9.3
$10,001 - $50,000	50.1	41.8
More than $50,000	39.7	36.1
not reported	5.1	12.8
Relationship to Elder (%)		
Spouse	16.3	30.2
Daughter	53.1	39.5
Son	8.2	5.8
Grandchild	5.1	7.0
Daughter-in-law	7.1	2.3
Son-in-law	2.0	3.5
Other relationship	8.1	11.7

Table 2.

Characteristics of Elder Care-Recipients

Characteristic	Japanese (n = 98)	Caucasian (n = 86)
Age of Elder (yrs)		
M	81.9	80.3
SD	8.7	9.5
Gender of Elder (%)		
Female	69.4	62.8
Male	30.6	37.2
Relationship of Elder to Caregiver (%)		
Spouse*	16.3	30.2
Parent*	61.3	45.3
Grandparent	5.1	7.0
In-law	9.1	5.8
Other relationship	8.1	11.7
Income of Elder (%)		
Less than $10,000*	39.8	27.9
$10,000 - $50,000	43.9	49.9
More than $50,000*	4.1	12.8
not reported	12.2	9.3
Primary Health Insurance (%)		
Medicare	71.4	72.1
Medicaid*	21.4	17.4
Private & Long Term Care	4.1	7.0
Don't know	3.1	3.5
ADL Impairment (mean scale scores)		
ADL's	14.4	15.6
IADL's	7.2	7.3
Total ADL & IADL	21.6	22.9
Services Used		
Adult Day Care*	37.8	23.3
Home Health Care*	11.2	29.1

* Indicates statistically significant differences between Japanese and Caucasian groups as evidenced by t-tests; $p < .05$

The Caucasian elders tended to be of higher socioeconomic status when compared to the Japanese elders, as evidenced by a higher percentage of Caucasians with an income level of more than $50,000 per year (13% Caucasian; 4% Japanese). In addition, a higher percentage of Japanese-American elders in this study received Medicaid benefits when compared to Caucasian elders (21% Japanese; 17% Caucasian).

Measures

A mailed survey was used to collect data in this study. The survey mainly used standardized instruments to measure each predictor and criterion variable, although one instrument was used with modifications made by the author (ATPLTC scale). Three of the measures were comprised of questions developed by the author, that of "employment status", "time spent caregiving", and "formal service use." The survey was pilot tested with six family caregivers, three Caucasian-American and three Japanese-American, resulting in identification of slight wording problems with some of the measures. These items were modified to be more easily understood by the sample population. A description of each measure contained in the survey is presented below. The entire survey appears in Appendix D.

Employment status. Employment status of the caregiver was measured by four questions developed by the author. The first question was a screening question to determine if the caregiver was employed outside the home. If the response was yes, three follow-up questions were asked to determine the number of hours worked, reason for employment, and whether employment outside the home helps or hinders their caregiving

role. Total number of hours employed outside the home per week was the criterion evaluated in the statistical analyses.

Time spent caregiving. Time spent caregiving was measured by two questions developed by the author. One question asked about the number of hours per day that the caregiver is engaged in tasks related to elder care. The second question asked about the duration of time that care had been provided in number of days, months, or years. Total number of hours per day spent caregiving was the criterion evaluated in the statistical analyses.

Formal service use. Use of formal services was measured by two questions developed by the author. One question asked whether formal services were currently being used by the caregiver to assist with elder care (e.g. yes or no). A second question asked respondents to circle the services used from a list of services commonly accessed by elders and their caregivers, such as Meals on Wheels, Handi-Van, support groups, home health care, hired caregiver, respite care, and others. Total number of services used was the criterion evaluated in the statistical analyses.

Functional ability (ADCAP-ADL). Functional ability of the care-recipient was measured by the Adult Day Care Assessment Procedure (ADCAP) (Conrad et al., 1990). The measure contains seven ADL and four IADL items that assess the care-recipient's functional ability. ADLs consisted of such functions as feeding, dressing, walking, showering, and toileting. IADLs consisted of handling money, shopping, and using the phone. Items were rated on a three-point Likert scale, estimating the care-recipient's ability to perform each of the ADL and IADL activities. Possible scores for the combined

ADL and IADL scales range from 11 to 33. The total score reflects a sliding scale: a score of 11 indicates that the elder can do each function independently; a score of 22 indicates that the elder requires some assistance with each of the functions; a score of 33 indicates that the elder needs complete assistance with all of the functions. The ADCAP-ADL and IADL scales have alpha reliability estimates of .91 and .89 respectively (Conrad, Hanrahan, & Hughes, 1990).

Social support (ISSB). The Inventory of Socially Supportive Behaviors (ISSB) (Barrera, Sandler, & Ramsey, 1981; Krause, 1987) was used to measure informal social support. The ISSB contains four sub scales. Only two of the subscales were used in this study, that of tangible support and emotional support. These two subscales contain a total of 14 items rated on a 5-point Likert scale (1= strongly agree, and 5= strongly disagree). Only the emotional support subscale, containing eight items, was used in the final analysis. Possible scores on this scale range from 8 to 40, with a higher score representing greater emotional social support.

The ISSB was revised and tested for psychometric adequacy across three ethnic groups of elders in Hawaii (Dubanoski, Heiby, Kameoka, & Wong, 1996). Support for construct validity was found for emotional support, while construct validity for tangible social support lacked strong support across the groups studied (Dubanoski et al., 1996). Dubanoski et al. (1996) reported acceptable reliability estimates for both subscales, ranging from .85 to .81 for tangible support, and .95 to .84 ($p < .05$) for emotional support.

Health of caregiver (ADSF-ELAIS). Physical health of the caregiver was measured by two subscales that consist of perceived health and objective health. The two subscales are part of the Elder Life Adjustment Interview Schedule (ELAIS) instrument (Dubanoski, Heiby, Kameoka, & Wong, 1996). Perceived health was measured by a single item selected from the National Institute on Aging interview scales (NIH, 1987), consisting of the respondent's self-rating of their overall health. Support for use of this item came from the following studies: Ferraro (1980); Krause (1987b); and Dubanoski et al. (1996). Objective health items were taken from the Autoinforme De Salud Fisica (ADSF) measure, that has been supported in a validation study by Dubanoski et al. (1996). Objective health was measured by a checklist of commonly diagnosed physical disorders, such as heart problems, diabetes, cancer, and memory problems. This scale was scored by counting the number of health problems identified by the respondent. In addition, the objective health scale measured number of days impaired during the past 30 days, and during the past year. The two subscales consisted of 12 questions. This measure was evaluated for psychometric properties by Dubanoski et al. (1996) along with the other ELAIS measures. Test-retest reliability estimates reported for the objective health measure are .80 for an Asian-American sample and .75 for a Caucasian sample. Test-retest reliability estimates of the perceived health measure were .65 for the Asian sample and .68 for the Caucasian sample, all significant at $p < .05$ (Dubanoski et al., 1996).

Attitude toward family care (ATPLTC). Attitudes about caregiving were measured by a modified version of the Attitude Toward the Provision of Long-Term Care (ATPLTC) scale (Klein, 1992). This scale was originally designed to measure attitudes

about various forms of family caregiving, including caring for children with disabilities as well as frail elders. The original ATPLTC is a 26-item measure that asks respondents to identify their attitudes about family caregiving based on a five-point Likert scale (1= strongly agree; 5 = strongly disagree). This measure was found to have good internal consistency, with a Cronbach's alpha of .88 when tested among caregivers of elderly family members (Klein, 1992). A factor analysis of the scale supported construct validity. The ATPLTC scale correlated significantly with self-reports concerning family relationships and various aspects of long-term care, supporting concurrent validity (Klein, 1992).

For this study items were eliminated that did not reflect questions pertaining to caring for frail elders. Other items were modified to better reflect appropriateness for use with an ethnically diverse population. The process of eliminating and modifying items was done with consultation from Dr. Colette Browne (personal communication, 2001), who is well-published in gerontology journals. Steps in the modification process are described in Appendix E. The modified version of the scale contains 14 items, with possible scores ranging from 14 to 70. Questions pertain to whether the respondent believes family members, or government and institutions, are obligated to provide care. A higher score reflects a stronger attitude toward providing care for frail elders at home. A lower score reflects a weaker attitude toward providing care by family members, evidenced by responses reflecting a belief in the responsibility of government and institutions to provide care to frail elders. Reliability estimates for the modified ATPLTC measure were obtained in this study.

Depression (BDI-ELAIS). Depression was measured by a revised version of the Beck Depression Instrument (BDI) (Beck, Rush, Shaw, & Emery, 1979; Beck, Ward, Mendelson, Mock & Erbaugh, 1961) that is contained in the Elder Life Adjustment Interview Schedule (ELAIS) instrument as a subscale (Dubanoski et al., 1996). The revised BDI is a 20-item instrument, with a range of possible scores between 20 and 100. A higher score indicates greater depression. The internal consistency and test-retest reliability estimates of this depression measure from the ELAIS were found to be .90 and .54, respectively, ($p < .05$), with a sample of Asian-American elders, and .88 and .63, respectively, ($p < .05$), with a sample of Caucasian-American elders (Dubanoski et al., 1996).

Life satisfaction (NIA-ELAIS). Life satisfaction was measured by the Life Satisfaction subscale of the Elder Life Adjustment Interview Schedule (ELAIS) (Dubanoski et al., 1996). The ten items contained in this measure were selected from the National Institute of Aging (NIA) interview scales (National Institutes of Health, 1987). Possible scores range from 10 to 50, with a higher score indicating greater life satisfaction. Internal consistency and test-retest reliability estimates were .87 and .53, respectively ($p < .05$), for the Asian-American sample, and .87 and .77, respectively ($p < .05$), for the Caucasian-American sample (Dubanoski et al., 1996).

Procedures

Letters requesting participation were distributed to potential caregiver-participants from the groups described in the "participants section" either by mail or picked up at agency sites (e.g., adult day care centers or caregiver support group meetings). The letter

informed potential participants that they will receive a $10.00 gift certificate from Longs Drugs for their time and effort in filling out the survey. In addition, the letter informed potential caregivers how their participation may benefit other caregivers for frail elders, through a better understanding of caregiving stress. When a caregiver agreed to participate, a screening took place to ensure that the caregiver met the criteria described at the beginning of this chapter. If the criteria were met, a packet was mailed to the caregiver that contained a letter of instruction (Appendix B), two consent forms (one they were instructed to keep) (Appendix C), the survey (Appendix D), a gift certificate, and a stamped return envelope. Also included in the packet was a bag of tea. The purpose of the tea bag was to establish an element of levity, and perhaps relaxation, while filling out the survey. Pilot testing of the instrument revealed that it took between 20-30 minutes to complete, which proved to be an average completion time for most study participants.

Data Analytic Strategy

Internal consistency reliability estimates were computed for each multi-item measure used in the survey. The effects of the seven hypothesized variables in predicting depression and life satisfaction were tested using multiple regression analyses. In addition, multivariate analysis of variance and subsequent F-tests were used to determine statistically significant differences between the Japanese and Caucasian groups. A post-hoc factor analysis was used to further analyze the ATPLTC scale, due to the unique findings produced by this measure.

CHAPTER 3

RESULTS

The findings of this study are presented in five sections. The first section presents descriptive statistics for model variables. The second section presents reliability estimates for all multi-item measures. The third section describes results of preliminary regression diagnostic data analyses conducted to identify outliers, multicollinearity, and other problems that could influence the results of all subsequent analyses. The fourth section presents the results of simultaneous multiple regressions that were conducted to test the hypothesized effect of employment status, time spent caregiving, service use, functional status, social support, health, and attitude toward family caregiving on stress among Japanese-American and Caucasian caregivers. In addition, the results of a post-hoc factor analysis of the ATPLTC scale are presented in the final section.

Descriptive Statistics for Model Variables

Means, standard deviations, and MANOVA. Means and standard deviations for criterion and predictor variables for Japanese, Caucasian, and the combined samples are presented in Table 3. A one-way between-groups multivariate analysis of variance (MANOVA) was performed to investigate ethnic group differences among the predictor and criterion variables. Results of the MANOVA indicated that there was a significant difference between the Japanese and Caucasian groups on some variables: $F(9, 174) = 2.53$, $p = .009$; Wilks Lambda = .88; partial eta squared = .12. Follow-up univariate ANOVAs were performed to determine the source of statistically significant differences between groups. Using a Bonferroni adjusted alpha level of .006, results indicated that the

Table 3.

Means and Standard Deviations for Criterion and Predictor Variables

Variable	Combined (n = 184) Mean	*SD*	Japanese (n = 98) Mean	*SD*	Caucasian (n = 86) Mean	*SD*
Outcome variables						
Depression	47.64	11.67	47.01	11.45	48.36	11.93
Life Satisfaction	33.52	6.69	33.31	6.91	33.77	6.46
Predictor variables						
Employment (hrs/wk)	14.46	18.68	15.97	19.24	12.75	17.98
Time Caregiving (hrs)*	10.78	8.32	9.18	7.74	12.60	8.63
Service Use	1.14	1.07	1.14	1.13	1.14	.99
Functional Ability	22.19	5.85	21.57	5.69	22.90	5.98
Social Support	29.26	6.68	29.57	5.68	28.90	7.69
Health of Caregiver	2.11	1.62	1.97	1.52	2.28	1.73
Attitude-Family Care*	48.32	7.85	46.77	7.90	50.08	7.45

* $p < .01$ (F - tests)

groups differed significantly on "time spent caregiving": $F(1, 182) = 8.01, p = .005$, partial eta squared = .042; and "attitude toward family care": $F(1, 182) = 8.51, p = .004$; partial eta squared = .045. An inspection of mean scores on the two variables that achieved statistical significance indicated that Caucasians provided more hours of daily care ($M = 12.60$, $SD = 8.63$) than Japanese caregivers ($M = 9.18$, $SD = 7.74$); and Caucasian caregivers reported higher mean scores regarding attitudes toward family care ($M = 50.08$, $SD = 7.45$) than Japanese caregivers ($M = 46.77$, $SD = 7.90$).

There were no statistically significant differences between the groups on either outcome measure of depression or life satisfaction, as evidenced by the ANOVA F-tests: depression, $F(1, 182) = .612, p = .435$, partial eta squared = .003; life satisfaction, $F(1, 182) = .217, p = .642$, partial eta squared = .001. Mean scores for Caucasian caregivers were ($M = 48.36$, $SD = 11.93$), and for Japanese caregivers ($M = 47.01$, $SD = 11.45$). Life satisfaction scores were nearly identical between the groups: Caucasian ($M = 33.77$, $SD = 6.46$); Japanese ($M = 33.31$, $SD = 6.91$).

Evidence of stress. Levels of stress were measured through the indicators of depression and life satisfaction in this study. High stress is indicated by high depression scores and low life satisfaction scores. On the BDI-ELAIS depression measure, a score above 40 indicates mild depression (mid-point is 60). The mean depression score for the Japanese sample was $M = 47.01$, and for the Caucasian sample, $M = 48.36$, indicating that this was a moderately depressed sample of caregivers. On the NIA-ELAIS life satisfaction measure, a score below 35 reflects compromised life satisfaction (mid-point is 30). The mean life satisfaction scores for participants in the present study were $M = 33.31$ for the

Japanese sample, and $M = 33.77$ for the Caucasian sample. These scores reflect slightly low levels of life satisfaction. Therefore, it can be concluded that there is evidence of stress among the caregivers in these samples, due to the high depression scores and low life satisfaction scores.

Other descriptive statistical findings. Results pertaining to aspects of two predictor variables, those of "service use" and "caregiver's health status," are presented here due to their importance in discussing the findings of this study presented in the following sections. First, independent sample *t*-tests were conducted to determine whether there were significant differences between Japanese and Caucasian caregivers with respect to the types of services used. Results indicate that Adult Day Care was used more often by Japanese elders (38%), than by Caucasian elders (23%): $t(182) = 2.16$, $p = .03$. Home health care was used more often by Caucasian elders (29%), than by Japanese elders (11%): $t(182) = 3.04$, $p = .003$. Differences between the groups on use of respite care (Japanese 12%; Caucasian 5%) and use of hired caregivers (Japanese, 13%; Caucasian 26%) were not statistically significant.

Second, although there were no statistically significant differences in overall health problems between the Japanese and Caucasian caregivers, there was an exceptionally high rate of heart-related problems reported by both groups (Japanese 56%; Caucasian 45%). These incidents of heart problems are much higher than what is found in non-caregiving populations, for people of similar age to the mean age of caregivers in this study (57 years for the Japanese sample; 59 years for the Caucasian sample) (Aneshensel et al., 1995; Snyder & Keefe, 1985).

Reliability of Measures

Table 4 presents internal consistency reliability estimates for all multiple item measures. As shown in this table, the reliability estimates for all scales were relatively high for both Japanese and Caucasian samples (i.e., all estimates .80 or higher).

Regression Diagnostics

The data sets were analyzed to evaluate assumptions underlying multiple regression analysis. Preliminary data analysis included the evaluation of normality, linearity, homoscedasticity, and multicollinearity. Analyses also were conducted to identify outliers.

Normality, linearity, and homoscedasticity. Normality was assessed by examining normal probability plots of the regression standardized residuals and residual scatter plots. Examination of these plots for regressions with both criterion variables (depression and life satisfaction), indicated no major deviations from normality for both Japanese and Caucasian samples. Analysis of scatter plots for all regression analyses further suggested that there were no problems with normality. Results of the Kolmogorov-Smirnov statistic indicated all variables to be non-significant, again supporting normality. Examination of plots of studentized residuals revealed no problems with linearity or homoscedasticity.

Multicollinearity. Multicollinearity among predictor variables was assessed by examining both bivariate correlations among predictor variables and tolerance coefficients. According to Tabachnick and Fidell (1996), a bivariate correlation among independent variables of more than $r = .70$ indicates a strong likelihood of multicollinearity. All

Table 4.

Internal Consistency Reliability Estimates (Cronbach's alpha)

Variable	Caucasian (n = 86)	Japanese (n = 98)	Combined (n = 184)
Outcome variables			
Depression (BDI-ELAIS)	.87	.88	.88
Life Satisfaction (NIA-ELAIS)	.83	.88	.86
Predictor variables			
Functional Ability (ADCAP-ADL)	.92	.91	.91
Social Support-emotional (ISSB-ELAIS)	.93	.88	.91
Attitude (ATPLTC)	.80	.81	.81

correlations among independent variables in this study were below r = .50. Multicollinearity was also evaluated by an examination of tolerance coefficients ($1\text{-}R^2$), where R^2 refers to the amount of variance shared among variables. As tolerance coefficients approach zero, there is greater likelihood of multicollinearity (Tabachnick & Fidell, 1996). Tolerances in this data set were all above .70, with most above .90. Results of the above analyses indicated that multicollinearity was not a problem in this study. Table 5 presents correlations among all variables in the hypothesized model.

Outliers. An analysis of residuals was used to detect outliers for all predictor and criterion variables. Outliers were first checked to determine if scores fell within the range of possible scores. Outliers were then checked to ensure no errors were made during data entry. No out-of-range or data entering errors were identified. Following the

Table 5

Pearson Product-Moment Correlations Among all Variables in the Prediction Model

Variables	Depres	Life Satisf	Employ	Time	Serv Use	Funct Ability	Social Support	Health	Attitude
Depression	1.00	--	--	--	--	--	--	--	--
Life Satisfaction	-.58**	1.00	--	--	--	--	--	--	--
Employment	.08	-.01	1.00	--	--	--	--	--	--
Time Caregiving	.10	-.15*	-.38**	1.00	--	--	--	--	--
Service Use	-.08	-.03	-.02	.19**	1.00	--	--	--	--
Functional Ability	.03	.01	-.16*	.41**	.28**	1.00	--	--	--
Social Support	-.29**	.34**	-.03	-.09	.05	-.09	1.00	--	--
Health Problems	.26**	-.13	-.06	.07	.14	.22**	-.08	1.00	--
Attitude-Family Care	-.34**	.36**	-.02	.03	.10	.09	.28**	-.08	1.00

* $p < .05$ level (2-tailed)
** $p < .01$ level (2-tailed)

recommendations of Tabachnick and Fidell (1996) for reducing the influence of outliers, it was determined that the cases with outliers were representative of the target population. Although outliers were identified for four predictor variables (service use, social support, health problems, and attitude) and one criterion variable (life satisfaction), none were considered to be extreme. The means and 5% trimmed means of the non-extreme outliers were found to be quite similar, indicating that elimination of these outliers would produce little change in subsequent analyses (Pallant, 2001).

Outlier analysis was also conducted on the Japanese and Caucasian samples separately, and again some outliers were found, although none were extreme. Means and 5% trimmed means were similar to each other among all variables, again indicating that the outlier scores have little influence on the mean statistics. Therefore, there was not sufficient evidence to change or eliminate outlier cases in the Japanese and Caucasian data sets.

Prediction of Stress Among Caregivers

Multiple regression analyses were conducted to test the hypothesized relationships specified in the model presented in Chapter One. Seven variables were hypothesized to predict stress among caregivers of frail elders. Caregiver stress was operationalized by scales that measured depression and life satisfaction. Four regression analyses were conducted, two for the prediction of depression, and two for the prediction of life satisfaction. The models were tested with the Japanese and Caucasian samples separately, resulting in the four regression analyses. The following sections present the results of the

multiple regression analyses that tested the hypothesized prediction model for depression and life satisfaction respectively.

Prediction of depression. The first hypothesis predicted that increased time employed outside of the caregiving role, increased time spent caregiving, reduced use of formal services, decreased functional ability of the elder, decreased social support, more health problems of the caregiver, and stronger attitude toward family caregiving would be directly related to greater depression among caregivers. Simultaneous multiple regression analysis was used to test these hypothesized effects.

As shown in Table 6, results of the simultaneous multiple regression analysis model for the prediction of depression was statistically significant for both Japanese and Caucasian samples. For the Japanese sample, the model accounted for 27% of the variance in depression, $F(7, 90) = 4.78$, $p < .05$, and for the Caucasian sample, 30% of the variance was accounted for by the prediction model, $F(7, 78) = 4.84$, $p < .05$.

In the Japanese sample three variables significantly predicted depression: "social support," "health problems," and "attitude toward family care." Decreased social support, more health problems of the caregiver, and weaker attitude toward family care significantly predicted increased depression among the Japanese-American sample. In the Caucasian sample, four variables significantly predicted depression: "hours of employment," "service use," "health problems," and "attitude toward family care." Increased hours employed, reduced use of social services, more health problems, and weaker attitude toward family care significantly predicted increased depression among the Caucasian sample. Two predictor variables were significant across both groups: "health

Table 6.

Simultaneous Multiple Regression of Depression on Hypothesized Predictor Variables

	Japanese (n = 98)			Caucasian (n = 86)		
Variable	B	*SE* B	*β*	*B*	*SE* B	*β*
Employment Status	.05	.06	.08	.14	.07	.21*
Time Spent Caregiving	.30	.16	.21	.21	.16	.16
Service Use	.46	.96	.05	-3.28	1.27	-.27*
Functional Ability	-.30	.21	-.15	.22	.22	.11
Social Support	-.53	.19	-.27*	-.11	.16	-.07
Health of Caregiver	1.91	.73	.25*	1.40	.68	.20*
Attitude-Family Care	-.30	.14	-.21*	-.47	.17	-.29*
R^2		.27**			.30**	
Adjusted R^2		.21			.24	
F		4.78			4.84	
Df		(7, 90)			(7,78)	

** $p < .05$
* $p < .001$

problems" and "attitude toward family care." The relationship of the significant predictor variables with depression were in the hypothesized direction, with the exception of the variable "attitude toward family care."

Prediction of life satisfaction. The second hypothesis predicted that decreased time employed outside of the caregiving role, decreased time spent caregiving, increased use of formal services, increased functional ability of the elder, increased social support, fewer health problems of the caregiver, and weaker attitude toward family caregiving will be directly related to greater life satisfaction among caregivers. Again, simultaneous multiple regression analysis was used to identify predictors that were significantly related to life satisfaction.

As shown in Table 7, results of a simultaneous multiple regression analysis indicated that the hypothesized model for the prediction of life satisfaction was statistically significant for both the Japanese-American and Caucasian samples. For the Japanese sample, the model accounted for nearly 32% of the variance in life satisfaction, $F(7,90) = 6.12$, $p < .05$, and for the Caucasian sample, 18% of the variance was accounted for by the hypothesized model, $F(7,78) = 2.40$, $p < .05$.

The analysis indicated that for the Japanese sample, three of the seven predictor variables had a significant unique effect on life satisfaction. Specifically, "time spent caregiving," "social support," and "attitude toward family care" predicted life satisfaction. Decreased time spent caregiving, increased social support, and stronger attitude toward family care significantly predicted increased life satisfaction among the Japanese-American

Table 7.

Simultaneous Multiple Regression of Life Satisfaction on Hypothesized Predictor Variables

	Japanese (n = 98)			Caucasian (n = 86)		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Employment Status	-.01	.04	-.03	-.03	.04	-.08
Time Caregiving	-.24	.09	-.27*	-.09	.09	-.12
Service Use	-.43	.56	-.07	-.23	.75	-.04
Functional Ability	.15	.12	.13	.04	.13	.04
Social Support	.46	.11	.38*	.13	.10	.15
Health of Caregiver	-.29	.42	-.06	-.32	.40	-.09
Attitude-Family Care	.22	.08	.25*	.25	.10	.29*
R^2		.32**			.18**	
Adjusted R^2		.27			.10	
F		6.12			2.40	
Df		(7, 90)			(7, 78)	

** $p < .05$
* $p < .001$

caregivers in this sample. For the Caucasian sample, only one variable had a significant unique effect on life satisfaction, that of "attitude toward family care." Stronger attitudes toward family care significantly predicted greater life satisfaction among the Caucasian caregivers in this sample. The only predictor variable that was significant across both groups was "attitude toward family care," similar to the results from the regression analysis for the prediction of depression. The relationship of the significant predictor variables with life satisfaction were in the hypothesized direction, with the exception of the variable "attitude toward family care."

Results of Factor Analysis: ATPLTC Scale

A post-hoc factor analysis was conducted on the modified Attitude Toward the Provision of Long Term Care (ATPLTC) scale. This analysis was deemed important in assessing the possibility that this scale was measuring two discrete constructs (e.g., institutional care and family care), rather than a continuum of strong to weak attitudes toward family caregiving of frail elders. Fourteen items of the ATPLTC scale were subjected to principle components analysis using SPSS. The presence of four components with eigenvalues exceeding 1 was revealed, explaining 30.2%, 11.7%, 8.4%, and 7.2% of the variance respectively (see Appendix F). An inspection of the screeplot revealed a clear break after the second component (see Appendix G). Using Catell's (1966) scree test, it was decided to retain two components for further investigation. To aid in the interpretation of these two components, Varimax rotation was performed. The rotated solution, presented in Table 8, revealed that both components showed a number of

Table 8.

Varimax Rotation of Two Factor Solution for ATPLTC Items

Item	Component 1 Attitude: Family Care	Component 2 Attitude: Institutional Care
Attitude 2-filial care	.75	
Attitude 1-no institution	.72	
Attitude 5-responsibility (family)	.71	
Attitude 4-physical demands	.68	
Attitude 3-find way	.57	
Attitude 7-meaningful	.55	
Attitude 9-rearrange schedule	.44	
Attitude 13-specialize	.33	
Attitude 10 **(reversed)**-burden (child)		.77
Attitude 14 **(reversed)**-burden (spouse)		.76
Attitude 11 **(reversed)**-die		.71
Attitude 8 - family plan		.51
Attitude 6 **(reversed)**-better off		.46
Attitude 12 **(reversed)**-government responsibility		.42
% of variance explained	22.5%	19.3%

(Note: Only loadings above .3 are displayed)

relatively strong loadings. The two factor solution explained a total of 41.9% of the variance, with Component 1 contributing 22.5% and Component 2 contributing 19.3%.

Summary of Results

Results of simultaneous multiple regression analyses conducted to test the hypothesized relationships between the predictor variables and stress among caregivers of frail elders yielded the following significant findings. First, hypothesized predictors accounted for 27% of the variance in depression for the Japanese-American sample, and 30% for the Caucasian sample. Second, while statistically significant for both samples, the hypothesized prediction model for life satisfaction accounted for a larger proportion of variance in the Japanese sample, 32%, than for the Caucasian sample, 18%.

Third, "attitude toward family care of elders" was the only variable that consistently was a significant predictor of depression and life satisfaction for both Japanese and Caucasian samples. Further, this variable was one of the strongest contributors to the models for both criterion variables and both ethnic groups. These findings indicate that the stronger the caregiver's attitude toward caring for their elder at home, the lower the depression and the greater the life satisfaction. This finding is opposite of the hypothesized relationship between "attitude," depression, and life satisfaction. With the exception of the "attitude" variable, no other variables were significant across groups and with both criterion variables.

Fourth, one of the major differences between the findings for Japanese and Caucasian samples was the effect of emotional social support on both criterion variables (depression and life satisfaction). Social support was the strongest contributor to the

model for both depression and life satisfaction among the Japanese sample, while social support had virtually no effect on either criterion variable among the Caucasian sample.

Fifth, of particular interest were the differences in variables that made a statistically significant contribution to the prediction of depression and life satisfaction between the Japanese and Caucasian groups. In the prediction of depression, for example, "social support," "health of the caregiver," and "attitude toward family care" significantly contributed to the prediction of depression among the Japanese sample. In contrast, "employment status," "service use," "health of the caregiver," and "attitude toward family care" significantly contributed to the prediction of depression among the Caucasian sample. In the prediction of life satisfaction, "time spent caregiving," "social support," and "attitude toward family care" significantly contributed to the prediction of life satisfaction among the Japanese sample. The only variable that was a significant contributor to the prediction of life satisfaction among the Caucasian sample was "attitude toward family care."

CHAPTER 4

DISCUSSION

The primary purpose of this study was to identify variables related to stress among caregivers, and explore how these variables may differ between Caucasian and Japanese-American caregivers of frail elders. Two indicators of stress were used in this study, depression and life satisfaction. These indicators of stress have been identified in previous studies as being strongly related to stress (Aneshensel et al., 1995; Kane & Kane, 2000). In addition, seven predictor variables of stress among caregivers were identified from previous studies, and included in the model presented in this study. It was hypothesized that increased depression would be predicted by: (1) increased time employed; (2) increased time caregiving; (3) decreased service use; (4) decreased functional ability; (5) decreased social support; (6) increased health problems of the caregiver; and (7) stronger attitude toward family caregiving. Further, it was hypothesized that greater life satisfaction would be predicted by: (1) decreased time employed ; (2) decreased time caregiving; (3) increased service use; (4) increased functional ability; (5) increased social support; (6) decreased health problems of the caregiver; and (7) weaker attitude toward family caregiving.

The following sections discuss the implication of findings regarding the hypotheses tested in this study, with respect to the current body of research on stress among ethnically diverse caregivers of frail elders. Subsequent sections focus on limitations of the present study, implication of the findings for future research, implications for social work practice, and a final section on recommendations to enhance policies related to caregiving.

Stress Among Caregivers

Previous studies investigating stress among caregivers differed substantially in terms of how stress is operationalized, on factors that contribute to stress, and how useful these factors are in the prediction of stress among ethnically diverse caregivers (Dilworth, 2002). In this study the relationships among the seven predictor variables and stress were consistent with the most replicated and stable findings in previous studies on caregiving and stress (Dilworth, 2002). However, the findings of this study revealed that the variables in the prediction model are not consistent across the ethnic groups of Japanese-Americans and Caucasian-Americans.

As expected, the two indicators of stress, depression and life satisfaction, have a negative relationship. The higher the depression, the lower the level of life satisfaction reported by both groups. These indicators of stress were purposefully chosen to provide balance for the detection of inconsistencies in the findings. For example, if a caregiver is experiencing many symptoms of stress, including depression, they would be unlikely to report high levels of life satisfaction. The resulting negative relationship supports the use of depression and life satisfaction as indicators of stress, further validating their use in prior studies (Aneshensel et al., 1993; Kane & Kane, 2000; Pearlin et al., 1990; Zarit, 1990), and suggesting continued appropriateness of their use in future studies.

Mean differences between groups. When comparing the findings from the MANOVA and follow-up univariate *F*-tests used to detect statistically significant differences in mean scores between the Japanese and Caucasian samples, it is interesting to note that the depression and life satisfaction scores were quite similar for both groups.

Neither group could be considered more "stressed" than the other. Further, five of the seven predictor variables showed no significant differences between the groups: employment, service use, functional ability, social support, and caregiver's health. Significant differences were found with only two variables: "time spent caregiving" and "attitude toward family care." A discussion of the two significant variables follows.

For the variable "time spent caregiving," Caucasian caregivers reported spending more hours per day providing care. It is possible that Japanese caregivers also provide just as much care (or more), and that this finding is a result of underreporting by this group. The survey question pertaining to "hours spent caregiving per day" simply asks caregivers for an estimate. The accuracy involved in this estimation may well reflect cultural differences in recognition of tasks and time. A caregiver that ascribes to interdependent values may be less likely to recognize and/or report the full amount of time spent on caregiving duties. This supposition extends beyond the scope of this study, although it does present a possible direction for future caregiving studies pertaining to caregiving among culturally diverse caregivers.

It is not surprising to find that there were differences between the groups with the variable "attitude toward family care." This variable was included in the model for the purpose of detecting potential ethnic group differences based on cultural values, beliefs, or attitudes. Inclusion of an "attitude" variable is particularly important for a study pertaining to multi-ethnic elder care because ethnic and cultural groups tend to have strong ideas about the care of elders. A study comparing Eastern and Western cultures, such as this one, would be remiss not to include some way of detecting ethnic group

differences based on attitudes, beliefs, or values. Therefore, finding statistically significant differences in "attitude toward family care" supports the rationale for comparing Japanese and Caucasian caregivers based on a belief that these groups are, in fact, different. Interestingly, however, it was the Caucasian group that reported stronger attitudes toward elder care. Possible explanations for this unexpected finding are discussed in a later section.

Comparison with other studies. In order to elucidate further the findings of this study with regard to the outcome indicators of depression and life satisfaction, the findings are compared with the results of the ELAIS measures used with similar local populations from Hawai'i. The Dubanoski et al. (1996) study provided a psychometric evaluation of the ELAIS instrument that included several of the scales for used in this study. A comparison of findings on the following measures: the BDI-ELAIS that measured depression, and the NIA-ELAIS that measured life satisfaction, indicated that caregivers in this study appear more depressed than the Asian and Caucasian participants in the Dubanoski et al. (1996) study. Participants in the two studies were similar on most demographic variables (e.g., age, gender, and education level). The depression scores, however, appear to be quite different. The Dubanoski et al. (1996) study reported the following depression scores: Asian ($M = 35.69$, $SD = 9.94$); Caucasian ($M = 35.94$, $SD = 9.76$). The scores in this study were: Japanese ($M = 47.01$, $SD = 11.45$); Caucasian ($M = 48.36$; $SD = 11.93$).

While many of the demographic variables between the two groups appear comparable, the groups do differ in terms of ethnicity and function: (1) the Dubanoski et

al. (1996) study used Asian and Caucasian samples, whereas this study used Japanese and Caucasian samples; and (2) the groups in this study were caregivers, while the groups in the Dubanoski et al. (1996) study were not. Therefore, any observed differences in depression between the groups may be the result of those demographic differences. It is expected that caregivers are more depressed than non-caregivers (Knight et al., 2000; Yates et al., 1999), and a comparison of this study with the Dubanoski et al. (1996) study supports these findings.

For life satisfaction, Dubanoski et al. (1996) reported higher mean scores (Asians, $M = 38.49$; Caucasian $M = 38.06$), than those found in the present study (Japanese, $M = 33.31$; Caucasian, $M = 33.77$). Possible explanations for the lower life satisfaction scores among participants in the present study may reside in the demographic differences noted above and/or may be that this sample was more depressed than the sample used in the Dubanoski et al. (1996) study, resulting in lower life satisfaction scores. Depression and life satisfaction are negatively correlated, resulting in an expectation that when depression is high, life satisfaction will be low. A discussion of the results for each regression analysis, with particular emphasis on the differences and similarities of the predictive ability of the models across ethnic groups, follows.

Prediction of Depression

The following discussion proceeds in three sections. First, the overall significance of the model in the prediction of depression is presented, reporting the significant variables in relation to past studies. Second, the predictive ability of the model is discussed,

emphasizing differences in prediction between the ethnic groups. Third, a discussion of the non-hypothesized findings is presented.

Overall significance of the model (Depression). Based on the results of the regression analysis, the model of factors hypothesized to predict depression is significant for both the Caucasian and Japanese-American samples. This finding indicates that the combination of the predictor variables included in this study do contribute to the prediction of stress among caregivers, as hypothesized. This finding alone is important in understanding that there are some similarities in the prediction of depression across ethnic groups.

Five of the seven predictor variables were found to be significant predictors of depression among caregivers in this study. These findings are consistent with previous studies that support the inclusion of the hypothesized variables in the prediction model. The five predictor variables that were statistically significant in this study and in previous studies, are "employment status" (Martire et al., 1997; Haworth, 1997), "service use" (Hooyman & Gonyea, 1995; Knight et al., 1993; Tennstedt et al., 1989), "social support" (Burack-Weiss, 1995; Haley et al., 1987; Thompson et al., 1993), "health of the caregiver" (Aneshensel et al., 1995; Pearlin et al., 1990), and "attitude toward family care" (Levesque et al., 1995; Raveis et al., 1998). "Time caregiving" (McKinlay et al., 1995; Segal & Schall, 1996) and "functional status of the elder" (Bindoff et al., 1997; Neundorfer et al., 2001; Segal & Schall, 1996) were two variables that have been shown to predict depression in previous studies, but not in this study. Possible reasons why these

two variables were not significant in the prediction of depression in the present study are addressed in later sections.

Predictive ability of the model (Depression). The prediction model accounted for 27% of the variance in depression among Japanese-American caregivers, and 30% of the variance in depression for Caucasian caregivers in this study. Although a similar amount of variance is accounted for between the two ethnic groups, the model appears to predict slightly better for the Caucasian sample. This finding is not surprising, due to the western orientation and origination of the measures included in the survey. More surprising, perhaps, is that the prediction model accounted for nearly the same percentage for the Japanese and Caucasian samples. This finding offers support for the reliability and validity of the measures used in this study with multi-ethnic caregivers, indicating that continued use of these measures with non-Caucasian populations is warranted. Of further interest is the relatively low amount of variance in depression accounted for with either group. The challenge for future research, then, becomes one of identifying what other factors account for the remaining 70% of variance in depression.

Non-hypothesized findings (Depression). Correlations between the predictor and criterion variables revealed that all of the relationships reflected the direction of the hypothesis, with one exception. It was hypothesized that the "attitude toward family care" variable would be positively correlated with depression, that is, a stronger attitude toward family care would be directly related to greater depression. However, results indicated that the opposite was true with the sample used in the present study. For this sample a stronger attitude toward family care was related to lower depression. As mentioned

previously, attitudes and values pertaining to elder care have received limited attention in the caregiving literature. It was a premeditated decision to include a factor such as "attitude toward family care" as an exploratory variable in the present study. It is not surprising, then, that the relationship between depression and "attitude" reflects the non-hypothesized direction.

This relationship suggests that greater depression is experienced when a caregiver does not believe strongly in the value of elder care at home, by family members. Alternatively, if a caregiver believes strongly in family care of elders, he or she is less likely to experience depression. There could be a myriad of mediating factors that contribute to this relationship, including a stronger sense of family values, support, or nurturing that also have been shown to reduce depression (Yates et al., 1999). Other mediating factors may influence the direction of the relationship between attitudes and depression, including income (Badgett & Folbre, 1999), relationship between the elder and the caregiver (Johnson, 1996), or resiliency (McCubbin & McCubbin, 1987). However, what is known from this study is that stronger attitudes toward family (rather than institutional) care of elders is directly related to reduced depression among both ethnic groups in this study.

Prediction of Life Satisfaction

Similar to the section on the prediction of depression, the following discussion proceeds in three sections. First, the overall significance of the model in the prediction of life satisfaction is presented, reporting the significant variables in relation to past studies. Second, the predictive ability of the model is discussed, emphasizing differences in

prediction between the ethnic groups. Third, a discussion of the non-hypothesized findings is presented.

Overall significance of the model (Life Satisfaction). Based on the results of the regression analysis, the model of factors hypothesized to predict life satisfaction is significant for both the Caucasian and Japanese-American samples. Similar to the results in the prediction of depression, this finding indicates that the combination of predictor variables included in this study do contribute to the prediction of stress among caregivers, as hypothesized. This finding is also important in understanding that there are some similarities to the prediction of life satisfaction across ethnic groups.

Of the seven hypothesized predictors of life satisfaction, only three variables were found to be statistically significant: time spent caregiving; social support; and attitude toward family caregiving. The variables found to be significant predictors of life satisfaction in this study have strong support as predictors of life satisfaction in other studies: "time spent caregiving" (McKinlay et al., 1995; Segal & Schall, 1996; Zarit et al.,1998), and "social support" (Fink, 1995; Franks & Stephens, 1996; McKinlay et al., 1995). Interestingly, more than half of the hypothesized predictor variables were not statistically significant with either ethnic group in the prediction of life satisfaction.

Predictive ability of the model (Life Satisfaction). A major difference between the Japanese-American and Caucasian groups in this study has to do with the ability of the model to predict life satisfaction. The difference between 32% (Japanese-American) and 18% (Caucasian) of variance accounted for in the prediction of life satisfaction is an important finding. Initially the prediction model may have seemed more appropriate in the

prediction of life satisfaction with the Caucasian group, as the variables and their measures were based on studies conducted primarily by Western-educated researchers. Serious attention, however, was given to the selection of measures that had been modified for use with local ethnic groups in Hawai'i. It is possible that the modifications made the measures more reflective of life satisfaction among Japanese-Americans than Caucasian-Americans. Continued research with this model of predictor variables and their relationship with life satisfaction could help determine the usefulness of the measures and the model with other ethnic groups, along with Caucasians, further identifying why this model may predict better for non-Caucasians.

Non-hypothesized findings (Life Satisfaction). It was hypothesized that the "attitude toward family care" variable would be negatively correlated with life satisfaction, that is, a weaker "attitude toward family care" (i.e., more positive attitude toward institutional care) would be directly related to greater life satisfaction. However, results indicated that the opposite was true in the present study. For this sample a weaker attitude toward family care was related to lower life satisfaction. Based on the exploratory rationale for inclusion of the "attitude toward family care" variable, it is not surprising that the relationship between life satisfaction and "attitude" reflect the non-hypothesized direction.

This relationship suggests that greater life satisfaction is experienced when a caregiver more strongly adheres to the value of caring for elders at home, by family members. Alternatively, if a caregiver has a weak attitude toward family care of elders, (i.e., more positive attitude toward institutional care), he or she is less likely to experience

greater life satisfaction. Although there was evidence to predict a negative relationship between attitudes and life satisfaction (George & Gwyther, 1986; Segal & Schall, 1996; Tebb, 1995; Turner & Avison, 1992), it is not difficult to imagine how these variables could have a positive relationship, as found in this study. If a caregiver has a strong attitude toward family care, he or she may be more inclined to focus efforts on the well-being of family members, resulting in receipt of support, love, care, and nurturing from their family members in return. These qualities are likely to contribute to increased satisfaction with life. Therefore, the George and Bearon (1980) concepts associated with life satisfaction (e.g., taking pleasure from daily activities; attributing meaningfulness to life events and activities; a feeling that life goals are being obtained; and a positive self-image with optimistic attitudes and moods), could easily be the results of being a part of a close, loving, and caring family.

Ethnic Differences in the Prediction of Stress

The following sections present a discussion of ethnic differences in the prediction of stress. Six sections follow, differentiating the prediction of depression and life satisfaction among Japanese-American and Caucasian caregivers. The first three sections discuss depression: (1) among Japanese-Americans; (2) among Caucasians; and (3) a summary of the similarities and differences in the prediction of depression between the two groups. The next three sections parallel these sections, but focus on issues related to life satisfaction: (4) among Japanese-Americans; (5) among Caucasians; (6) a summary of similarities and differences in the prediction of life satisfaction between the two groups.

Depression among Japanese-American caregivers. Three variables were statistically significant predictors of depression among the Japanese-American sample, "social support," "health problems of the caregiver," and "attitude toward family care." The findings are consistent with the traditional Japanese values of collectivism, interdependence, and familism described in Chapter One (Elliott & Campbell, 1993; Harris et al., 1998; Triandis et al., 1990; Yamamoto & Wallhagen, 1998). The relationship of all significant variables are in the hypothesized direction, with the exception of "attitude toward family care." This variable was exploratory in this study, so a significant finding in the opposite direction is not surprising when considering traditional Japanese values. People who value interdependence are likely to value social support, and have strong attitudes toward family caregiving of frail elders, resulting in reduced depression. Caregivers are likely to experience depression associated with health problems, regardless of ethnicity.

Depression among Caucasian-American caregivers. Four variables were statistically significant predictors of depression among the Caucasian sample: "Employment," "service use," "health problems of the caregiver," and "attitude toward family care." The significant predictor variables mirror findings from previous caregiving studies (Martire et al., 1997) and coincide with the individualist value of independence common among Caucasian-Americans (Triandis et al., 1990). The relationship of all significant variables are in the hypothesized direction, with the exception of "attitude toward family care." Based on the exploratory nature of the inclusion of this variable in

the present study, along with the observance that the hypothesized direction of this variable with depression was also not substantiated, this finding is not surprising.

Similarities and differences in depression. Findings indicate that the relationship between depression and "attitudes toward family care" was statistically significant for both groups (Caucasian and Japanese-American caregivers). In addition, there was a statistically significant difference between the two groups when comparing means. There were significant differences between the groups on two variables: "time spent caregiving" and "attitude toward family care." Further differences, however, become more apparent when statistically significant predictors of stress are identified for each group. "Social support," "health problems of the caregiver," and "attitude toward family care" were significant predictors of depression among the Japanese-American caregivers, whereas "employment," "service use," "health problems of the caregiver," and "attitude toward family care" were significant predictors of depression among Caucasian-American caregivers.

Similar findings between both groups in the prediction of depression regarding the variable "health of the caregiver" makes sense. Regardless of ethnicity, more health problems often result in increased depression (Aneshensel et al., 1995). There may be a difference between the groups of caregivers, however, in their reaction to health problem. For example, among interdependent cultural groups discussion of personal health problems is discouraged, as the focus of concern is for other family members rather than the individual self (Aranda & Knight, 1997). Depression may still result; however, people from interdependent cultural groups may internalize feelings about their own declining

health, possibly contributing to symptoms of depression. Thus, increased health problems predict depression among both ethnic groups, regardless of how feelings and behaviors pertaining to declining health are expressed.

Similarity in the prediction of depression regarding "attitude toward family care" is also common to both ethnic groups. As previously mentioned, Caucasian caregivers were more likely to report stronger attitudes toward family care; however, they reported similar depression scores to those of the Japanese-American caregivers. The influence of "attitude toward family caregiving" in the prediction of depression may be very different between the two groups. For example, despite strong attitudes toward family care, depression may result due to feeling trapped by one's circumstance (i.e. unable to choose institutional care for their elder) (Levesque et al., 1995); while others may become depressed as a result of pressure from family members to remain in the caregiving role beyond the point of adequate coping (Raveis et al., 1998).

It may also be the case that Caucasians living in Hawai'i are more likely to adopt a respectful attitude toward elders due to the influence of living among a multitude of Asian ethnic groups that traditionally treat their elders with high regard (Youn et al., 1999; Harris et al., 1998; Mackenzie & Horoyd, 1996). Policies in the U.S. tend to reflect an element of ageism (i.e., discrimination based on age), along with a belief in independence that even pertains to frail elders (Triandis et al., 1990). Clearly not all Caucasians believe this way; and some may even be incensed by these attitudes. Many people who come to Hawai'i are open to new ideas, values, attitudes, and cultural beliefs, resulting in an atypical representation of Caucasians in the U.S. It is possible, then, that Caucasians

living in Hawai'i are more open to the idea of considering care for family elders as an obligation, resulting in strong attitudes toward family care. Follow-up studies designed to explore causal relationships between attitudes and depression would offer a significant contribution to the caregiving literature.

Although the variable "time spent caregiving" was not a statistically significant predictor of depression with either group, there was a statistically significant difference between groups when comparing means. Caucasian caregivers reported spending more hours per day involved in caregiving activities (M=12.8 hrs/day), while Japanese caregivers reported less caregiving hours (M=9.2 hrs/day). In light of these findings, it is not surprising that Japanese caregivers report more hours per week employed (M=16 hrs), while Caucasian caregivers report less hours employed (M = 12.8 hrs). These findings coincide with (and may be influenced by) the findings that Japanese elders are more likely to use Adult Day Care services than Caucasian elders (Japanese 38%; Caucasian 23%). Perhaps Japanese elders are more accepting of Adult Day Care, reflecting an element of interdependence (i.e., reducing conflict among family members), allowing Japanese family members to work more, and provide direct caregiving less.

The interrelationship among significant predictor variables for each ethnic group may well be connected by independent and interdependent values, expressed through an elder's willingness to accept services and support such as Adult Day Care. A greater use of Adult Day Care services by Japanese elders may explain the findings that reduced social support and decreased service use are significant predictors of depression among the Japanese and Caucasian groups respectively. It is possible that Adult Day Care serves as a

form of social support for the caregivers and elders among the Japanese sample. The two Adult Day Care centers used by participants in this study are located within the community where the elders live. It is possible that family caregivers know the staff members at the Adult Day Care centers, and perceive them as part of their social support systems. Further, a decreased use of services resulting in increased depression among the Caucasian group may reflect an unwillingness by Caucasian elders to participate in Adult Day Care or other forms of respite care, reflecting independent values.

Life satisfaction among Japanese-American caregivers. Three of the seven variables were statistically significant predictors of life satisfaction among the Japanese-American sample: "time spent caregiving," "social support," and " attitude toward family care." The relationship of all variables with life satisfaction is in the hypothesized direction, with the exception of "attitude toward family care."

Life satisfaction among Caucasian-American caregivers. Only one of the seven predictor variables was found to be a statistically significant predictor of life satisfaction, that of "attitude toward family care." As with the Japanese sample, this variable is positively correlated with life satisfaction. This finding suggests that if attitudes are strong with regard to family care of elders, caregivers will be more likely to experience greater life satisfaction, possibly due to knowing that they are contributing to the well-being of a family member.

Similarities and differences in life satisfaction. The only variable that was common among both ethnic groups in the prediction of life satisfaction was that of "attitude toward family care." A positive relationship was found with both groups,

indicating that the stronger the attitude toward family care, the greater the life satisfaction. Although it may be logical to assume that one could obtain greater life satisfaction if engaged more often in pleasurable activities, resulting in a decision to place their frail elder in an institution, findings from this study do not support this hypothesized perspective for Japanese or Caucasian caregivers.

This finding may reflect that all participants in this study live in a multicultural, multiethnic community, where cultural values become influenced by other ethnic groups, and often shared as well. With regard to "attitude toward family care," Caucasian caregivers in Hawai'i may be influenced to place a higher value on elder care, similar to the values of traditional Japanese-Americans, than Caucasians living in homogeneous communities on the mainland. In either case, the result would be consistent with the findings of this study in that stronger attitudes toward family caregiving are predictive of increased life satisfaction.

Two variables that were significant predictors of life satisfaction among the Japanese sample, but had no effect with the Caucasian sample, were "time spent caregiving" and "social support." Significant findings on these variables are consistent with other studies that the more time spent caregiving (McKinlay et al., 1995; Segal & Schall, 1996; Zarit et al., 1998), and reduced use of social supports (Burack-Weiss, 1995; Fink, 1995; Haley et al., 1987), result in lower life satisfaction. It is more surprising, then, that these variables were not significant predictors of life satisfaction among the Caucasian caregivers in this study.

Although Caucasians tend to adhere to independent values, it would seem that the presence or absence of social support would still affect life satisfaction. If a caregiver feels "helped" with a difficult task such as caregiving, it is logical to assume greater life satisfaction would result. Therefore, it is possible that mediating factors such as a strained relationship between the elder and the caregiver, may affect this variable's lack of significance in predicting life satisfaction among the Caucasian caregivers. For example, Caucasians in this sample were much more likely to be the spouse of the elder for whom they were providing care, perhaps reflecting marital conflict throughout the life course. Unresolved conflict between spouses may lead to isolative tendencies by either party, further limiting the acceptance of social support (Badgett & Folbre, 1999; Barusch, 1988). Although it would be logical to assume that isolation alone could lead to reduced life satisfaction, spouses may have found other ways to enjoy life over the years. Perhaps engaging in hobbies or other independent activities could buffer the effects of isolation, resulting in little or no connection between social support and life satisfaction. For caregivers adhering to independent values, it is not difficult to see how the above dynamics could develop. Clearly this is not the case for all Caucasian caregivers; however, a substantial contribution to the caregiving literature would be studies that further explore the relationship between social support, quality of the relationship between caregiver and receiver, and life satisfaction.

Another possibility exists for the lack significance with social support in the prediction of life satisfaction among the Caucasian caregivers. It is possible that the ISSB measure was not appropriate in assessing the quality of social support among the

Caucasian caregivers in this study. This may be the case as well for the lack of predictive ability for the variable "time spent caregiving." Perhaps other measures may have resulted in findings that were more similar to the findings from other studies where both "time spent caregiving" (McKinlay et al., 1995; Segal & Schall, 1996; Zarit et al., 1998), and "social support" (Burack-Weiss, 1995; Fink, 1995; Haley et al., 1987) were significant predictors of life satisfaction among Caucasian samples.

Implication of Findings for Each Model Variable

For the most part, measures used in this study and previous caregiving studies were developed by Western-educated researchers, and used with primarily Caucasian samples. Recent caregiving studies emphasize the need to ensure that measures are either modified or competently used and interpreted when study samples are ethnically diverse (Dilworth-Anderson, Williams, & Gibson, 2002). Dilworth-Anderson et al. (2002) emphasize the importance of ensuring the cultural adequacy of measures, particularly when the studies are designed to compare ethnic or cultural groups. Although many of the measures used in this study were previously tested among ethnically diverse elders in Hawai'i (e.g., the ELAIS measures of depression, life satisfaction, social support, and caregiver's health, tested by Dubanoski et al., (1996) and Wong et al., (1999)), and the ISSB for social support (Mendelson, 2000), other measures used in the current study were not (e.g. formal service use, the ADCAP for functional ability, and the ATPLTC for attitude).

Interestingly, the ELAIS measures that were previously tested among Asian-Americans and Caucasian-Americans in Hawai'i were found to be the more reliable

measures in this study, in accordance with the findings from the Dubanoski et al. (1996) psychometric validation study. Further comparison of this study's findings with those of the ELAIS psychometric study (Dubanoski et al., 1996) indicate that the objective health and emotional social support scores are similar between the two studies, offering further support for the validity of the ELAIS measures with ethnically diverse populations in Hawai'i. For the objective health measure, the mean scores reported in the Dubanoski et al. (1996) study (Asians, $M = 1.75$; Caucasians, $M = 2.50$) were similar to the mean scores found in the present study (Japanese, $M = 1.97$; Caucasians, $M = 2.28$). For emotional social support, the means scores reported in the Dubanoski et al. (1996) study (Asians, $M = 28.52$; Caucasians, $M = 31.04$) were again similar to the mean scores found in the present study (Japanese, $M = 29.57$; Caucasians, $M = 28.90$).

Each independent variable is presented in the following sections to further explore concerns with the measures and results obtained pertaining to each variable in the prediction of stress among caregivers.

Employment status. "Employment" was a significant predictor of depression in the Caucasian sample in this study. Consistent with the caregiving literature, caregivers who work report higher levels of stress and depression (Orodenker, 1991, Scharlach & Boyd, 1989). In accordance with individualist values that emphasize independence, self-reliance is an accepted social norm (Triandis et al., 1990). Although one's motivation to remain employed while providing elder care may vary among caregivers, the value of self-reliance may be a motivating factor for many traditionally independent caregivers. The more one can do for him- or herself, without financial or tangible assistance from

family or friends, the greater the feelings of well-being (Haworth, 1997). Caregivers may stay employed, or increase their hours of employment, as a means of remaining independent. There may be a point, however, where the number of hours employed begins to detract from the caregiver's well-being. In this study, increased stress is predicted by more hours employed, evidenced by greater the depression and lower the life satisfaction scores. Future research is needed to explore the relationship between employment and stress among caregivers, and to determine whether the relationship is consistent over time and representative of diverse ethnic groups.

Time spent caregiving. The variable "time spent caregiving" was significant in the prediction of life satisfaction among Japanese-American caregivers in this study. Perhaps caregivers who provide less care are able to engage in more personally pleasurable activities, resulting in greater life satisfaction. Alternatively, it is possible that less time providing care may be reflective of having greater social support or more use of respite services, and it is these elements that contribute to greater life satisfaction. In either case, future studies that explore the relationship among time spent caregiving, life satisfaction, and the possible buffering effects of social support and service use could substantially contribute to the caregiving literature.

Formal service use. The variable "service use" was a significant predictor of depression among the Caucasian sample only; it was not associated with life satisfaction with either group in this study. Because service use is so highly correlated with depression in previous caregiving studies, it is possible that the measures used in this study were either poor indicators of service use, or not accurate measures for the population of

Japanese-American caregivers in Hawai'i. For example, caregivers may be receiving services but do not recognize the name of the service. The service "Meals on Wheels" is often referred to as "home delivered meals." It is possible that caregivers may not have recognized the formal name of the service as it was written on the survey. Therefore, a lower report of service use may reflect a misunderstanding of program titles, rather than an actual accounting for the number of services used.

Use of formal services by caregivers of frail elders has been well-established in the caregiving literature as being more prevalent among Caucasians than among U.S. minority populations (Cox & Monk, 1990). Further, non-white ethnic groups in the U.S. tend to rely more on informal supports than formal services to provide caregiving assistance (Delgado & Tennstedt, 1997). Therefore, it is not surprising to find that a significant negative relationship exists between decreased use of services and increased depression among Caucasian caregivers. Further, an important aspect of individualist values is independence - not asking or relying on family or friends to help with personal care (Hofstede, 1980), resulting in a greater inclination to use formal services. It is often the case, however, that formal services are not used due to unavailability or ineligibility based on financial criteria. When formal services are not accessible, caregivers may resort to reliance on informal sources of support. Among Caucasian-Americans, a reliance on family and friends as opposed to formal services could result in increased depression because these caregivers would be acting against traditional values of independence.

Functional ability. As for the measurement of functional status of the elder, there were many ADL scales to choose from. Limited use of such scales with the ethnically

diverse cultural groups found in Hawai'i made the choice difficult. Therefore, the ADCAP-ADL and IADL scales may not have been the best selection for use the local Japanese-American and Caucasian-American caregivers in Hawai'i, resulting in a lack of predictive ability. Although the six Japanese and Caucasian pilot sample caregivers did not identify any problems, a larger pilot sample may have identified comprehension or other problems with this scale.

Social support. The operationalization of social support used as a predictor variable for this study measured "emotional social support." It is not surprising, then, that reduced social support would be a significant predictor of depression among caregivers from a culture that adheres to collectivist values, as is common among traditional Japanese communities. If a caregiver from a culture that values cooperation and interdependence experiences limited (or no) social support, resulting depression may be even stronger due to a greater expectation of social support than caregivers from cultures that place a higher priority on individualism.

The importance of social support in predicting life satisfaction among Japanese-Americans may reflect interdependent cultural values. The results of this study indicate that a positive relationship exists between social support and life satisfaction. Although causation cannot be determined by this study, a possible context for understanding this relationship among Japanese-American caregivers may reflect the interdependent values identified in previous sections. Traditional Japanese-Americans tend to highly value informal social support (Aranda & Knight, 1997). Therefore, Japanese-American caregivers that strongly adhere to the collectivist value of

interdependence would likely experience some positive level of life satisfaction if they perceived adequate social support. The fact that emotional social support was measured in this study (as opposed to other types of social support), and found to be a significant predictor of life satisfaction among Japanese-Americans, further reflects the importance of this variable among cultural groups that adhere to traditional values of collectivism, interdependence, and familism.

Health problems of the caregiver. There was an unusually high incidence of heart-related problems reported by both ethnic groups in this study (Japanese, 56.1%; Caucasian, 45.3%). Although health problems are significant in the prediction of depression among both ethnic groups in this study, this finding is particularly consistent with Japanese values. Traditional Japanese values reflect the belief that individuals should "suffer in silence"- express very little about their own health problems, particularly when caring for an elder. The elder's needs come before the caregiver's needs (Aranda & Knight, 1997; Triandis et al., 1990). Therefore, traditional Japanese caregivers may not be inclined to seek medical care for themselves at early signs of illness or injury, resulting in a higher incidence of chronic health problems as they provide care and as they age.

The relationship between health problems and depression may result from feelings of hopelessness - a belief that one is trapped by their caregiving role, and therefore cannot seek the medical treatment they may need (Aneshensel et al., 1995). Alternatively, a consistent finding in the literature that a positive relationship exists between physical illness and depression among non-caregiving adults (Aneshensel et al., 1995; Moritz et al., 1992), may explain the relationship between health and depression found in this study as

well. It is possible that the combination of being a caregiver, having health problems, and resulting depression are not linked by caregiving, but rather, by the relationship between health problems and depression found in non-caregiving populations.

Interestingly, caregiver's health had no relationship with life satisfaction for either group. It is possible to experience severely compromised health, yet still report an adequate levels of life satisfaction (Chuang, Devins, Hunsley, & Gill, 1989; Rabkin, Remien, Katoff, & Williams, 1993). It is somewhat puzzeling to consider, however, how people can report adequate satisfaction with life despite the debilitating effects of health problems, along with the complexities of providing care to an elder. Clearly, there is an element of resiliency that is an important aspect of these individuals' personal attributes. Future studies examining the relationship between caregivers' health problems and stress may benefit from including a measure of resiliency.

Attitude toward family care. This study found that the stronger the attitude toward the provision of in-home family care of elders, the less depression and greater life satisfaction was reported by both ethnic groups. However, the meaning of the relationship between attitudes and stress has been difficult to interpret in previous studies that have explored this relationship. Dilworth-Anderson et al. (2002) offer a myriad of explanations for the difficulty with interpretation of the relationship between depression and attitudes in some caregiving studies. For example, the ATPLTC scale was designed to measure "attitudes toward the provision of long-term care." If great care was not taken to ensure accurate interpretation, a "high" score on this scale could be interpreted to reflect positive attitudes toward institutional care of elders, rather than positive attitudes toward family

care of elders. It may be the case, then, that the relationship between depression and attitude toward family caregiving has been inaccurately reported in past studies. It is for this reason that the ATPLTC scale was selected to measure attitudes in this study. The ATPLTC scale asks for responses to very direct statements regarding care of family elders. The statements were designed to instigate strong reactions for the purpose of drawing out responses that may reflect the attitudes of the respondent's cultural group.

Findings in this study regarding the attitude variable and stress were not in the hypothesized directions. Results of this study indicate that strong attitudes toward elder care result in decreased depression and increased life satisfaction. Therefore, an interesting question arises: If a caregiver is providing care to an elder in accordance with their attitudes and beliefs, why would increased stress be the result? The ATPLTC attitude scale is designed to detect attitudes reflective of institutional care as well as family care. If caregivers strongly believe that they are responsible for the care of their elders, they are less likely to believe that institutional care is an option. They may continue to provide care, while overlooking their own physical and emotional needs. Therefore, strong attitudes toward family care may buffer the effects of feelings of hopelessness often associated with long-term family caregiving. Feelings of hopelessness are symptoms of depression.

As with the Japanese sample, a stronger attitude toward family care was correlated with lower depression among Caucasian caregivers. It is possible that Japanse-American and Caucasian caregivers have equally strong beliefs about caring for their elders at home (e.g. non-institutionalized). Further, it is possible that some values inherent to collectivism

and individualism are shared among residents who live in a multicultural community such as Hawai'i. For example, a result of providing elder care because you believe it is your obligation to do so could buffer the effects of depression equally for Caucasian and Japanese caregivers. A mainland sample of Caucasian caregivers compared with a sample of Japanese national caregivers could offer a more informed appraisal of the effects of traditional values on stress among caregivers.

Previous caregiving studies have reported conflicting findings as to the direction of the relationship between attitudes and life satisfaction (Aneshensel et al., 1993; Aranda & Knight, 1997; Levesque et al., 1995; Raveis et al., 1998). Aneshensel and colleagues (1993) and Aranda and Knight (1997) found that more positive attitudes toward family caregiving of elders resulted in increased feelings of life satisfaction, perhaps due to family caregivers believing that they are fulfilling their obligatory role in accordance with familial expectations. Results of studies conducted by Levesque et al. (1995) and Raveis et al. (1998), however, indicated that more positive attitudes toward family caregiving resulted in less positive feelings of life satisfaction, similar to the hypotheses (but not the findings) of the present study.

With regard to nursing home care, it is possible that if family members believe that institutional care is a viable option, and whether or not they act on it may not matter. The psychological relief in knowing that there are alternatives to providing care may be all that is needed to report higher levels of life satisfaction and lower levels of depression. Caregivers who believe institutional care is never going to be an option may resort to feelings of hopelessness. Perhaps an anticipation of relief from the burden of caregiving is

enough to influence the levels of life satisfaction and depression among caregivers. If family members believe they have no options other than to provide care for their elder until they die, they may experience compromised psychological health, such as increased levels of anxiety, stress, and depression, resulting in lower levels of life satisfaction.

Limitations of the Present Study

The results of this study must be viewed in the context of possible limitations to the generalizability and validity of these findings. The following issues are discussed with regard to generalizability, validity, and predictive ability of the model.

Sample size. Although small sample size was not a major problem impacting the results, this study could have benefited from a larger sample size. With the use of a formula for calculating sample size requirements suggested by Tabachnick and Fidell (1996), the sample size was marginally adequate. According to Tabachnick and Fidell (1996), there should have been 106 participants per group ($n > 50 + 8 \times 7$ IV's = 106 participants). In the present study there were 98 Japanese-American and 86 Caucasian caregivers. Although the combined sample size for this study was more than adequate (n = 184), the regression analyses were conducted with data from each ethnic group separately, resulting in sample sizes that were slightly smaller than what is recommended.

If the sample size for both groups of caregivers had been larger, an increase in the power of the statistical tests used in this study would result, as would increased generalizability. Further, the possibility of obtaining a larger sample size of caregivers on Oahu would have allowed for the consideration of including additional predictor variables,

and that may have increased the variance accounted for in the models. Larger sample sizes were not obtained due to limited access to caregivers on Oahu.

Determination of causal inferences. One of the greatest limitations of this study is that causal inferences about the effects of the predictors of stress among caregivers could not be established. Although several important associations among variables were identified, a correlational design does not permit a clear determination of causal inferences. A true experimental design would have allowed for causal inferences; however, the use of caregivers as study participants is more conducive to convenience sampling.

Convenience sample . One limitation of this study was the unavoidable use of a convenience sample. Caregivers who volunteered to participate in the study may be quite different from caregivers who declined participation. Perhaps the caregivers most severely affected by stress felt they did not have time to fill out the survey. Consequently, the results cannot be generalized to all Japanese-American and Caucasian caregivers of frail elders in the U.S., and may not even be generalizable to other groups of caregivers of the same ethnicities in Hawai'i.

Ethnic group sampling concerns. Obtaining exclusive ethnic groups for comparison studies is difficult, particularly in Hawai'i, due to the tremendous mix of ethnic groups. In this study the Japanese-American sample of caregivers was relatively exclusive, with responses reflective of what is known as a "local Japanese" population in Hawai'i. This group is still likely to respond much differently than Japanese-Americans living in California, for example.

An even greater challenge to generlizability lies within the Caucasian-American group of caregivers used in this study. Many of the participant-caregivers in the Caucasian group were children of the frail elders for whom they were providing care. Although the elder may be exclusively Caucasian, he or she may have a non-Caucasian spouse, resulting in children who identify as Caucasian, but are really of mixed ethnicity. In fact, inclusion in the Caucasian sample for this study included those who identified as Caucasian or part-Caucasian (as long as they did not identify as having a Japanese ethnic background). Inclusion of part-Caucasian could easily produce a confound within this study, that would clearly affect the generalizability of the findings. The findings from the cannot be generalized beyond local Caucasians living in Hawai'i, possibly of mixed ethnic background. In addition, the fact that part-Caucasians were included in this sample may have affected the lack of difference in mean scores on the predictor and criterion variables based on ethnicity. In other words, the groups may be more ethnically and culturally similar than dissimilar.

Acculturation measure. An acculturation measure was not used in this study. When comparing findings concerning different ethnic groups, an acculturation measure would be useful to more precisely understand how the relationships among the predictor and criterion variables differ between ethnic groups. For example, the attitudes about elder care are likely to be very different for Issei (first generation) than for Sansei (third generation) Japanese-Americans. Sansei caregivers may be more acculturated to Western influences, including a greater propensity to accept institutional care for their elders (an option that may not even be considered viable by the Issei generation). Further, a measure

of how many years participant-caregivers had resided in Hawai'i would have been useful to determine more specifically the potential generalizability of this study's findings.

Shortened and modified ATPLTC scale. Because the ATPLTC scale was shortened and modified to reflect only the care of frail elders, psychometric properties were compromised. Further, there were wording changes made, reflecting language thought to be more understandable among the ethnic groups participating in this study. Although the reliability estimates for the modified ATPLTC scale were adequate, the validity of this measure has yet to be established. Although great care was taken in the reduction and revision of this scale, the measure had never been used in its current form or used with ethnically mixed caregivers in Hawai'i prior to this study.

Operationalization of stress. The operationalization of stress has been notoriously problematic among caregiving studies during the past twenty years. Although there is validation among other studies for the use of depression and life satisfaction as indicators of stress (Aneshensel et al., 1995; Dubanoski et al., 1996; Kane & Kane, 2000; Knight et al., 2000), other indicators could have been used as well, perhaps resulting in a more accurate prediction of stress among caregivers. In support of other indicators of stress, some might argue that measures other than depression and life satisfaction are more useful indicators of stress. Yet, poor psychometric evaluations of caregiver stress scales resulted in the decision to use depression and life satisfaction as indicators of stress in the present study (Chiriboga, 1995; Kane & Kane, 2000). Although the operationalization of stress is included as a limitation in this study, there did not appear to be any better indicators of stress among caregivers than depression and life satisfaction when reviewing previous

studies. The fact that these measures were previously validated among Asian-Americans and Caucasians in Hawai'i helped make the selection of indicators a logical choice.

Selection of predictor variables. There is some evidence that a different mix of variables may better predict stress with multi-ethnic samples used in this study. First, there are low correlations among the predictor and criterion variables in this study, many below .10. Second, the amount of variation in depression and life satisfaction explained by the predictor variables, ranging from 18% to 32%, is of concern, resulting in questions about the adequacy of the predictor variables. The relatively low amounts of variation explained by the hypothesized predictor variables may be due to failure to use measures of some important predictor variables or mediating effects that were not investigated in this study.

Potential mediating variables, such as psychological resources (Aneshensel et al., 1995), coping strategies and social integration (Biegel et al., 1991), appraisal (Haley et al., 1987), role strain, quality of the relationship between caregiver and elder, perceived stress, and personality factors (Biegel et al., 1991) were not investigated because the purpose of this study was to explore the usefulness of previously tested predictors of stress with ethnically diverse groups of caregivers. The purpose of this study was not to validate a complete conceptual model that might include the mediating variables listed above. However, there are models of stress and caregiving that emphasize the importance of mediating factors in predicting and explaining stress (Aranda & Knight, 1997; Dilworth et al., 2002; Montgomery & Kosloski, 2000; Pearlin et al., 1990; Yates et al., 1999). Although the findings of this study have contributed to the caregiving literature through

further validation of consistent predictors of stress, and how they differ among Japanese-American and Caucasian caregivers, future studies could test a models of stress and caregiving that incorporate mediating effects to determine the effectiveness of the model among ethnically diverse caregivers.

Despite the limitations discussed, this study offers useful information regarding the prediction of stress among Japanese-American and Caucasian caregivers in Hawai'i. The extent to which findings from this study can be generalized to Japanese-Americans and Caucasians in other parts of Hawai'i or on the U.S. mainland is unknown. Future studies that use similar measures to the ones used in this study would be useful in extending generalizability to other ethnic groups in Hawai'i, and to populations beyond Hawai'i as well.

Implications for Future Research

Dilworth-Anderson and colleagues (2002) reviewed the caregivng literature from 1980 through 2000, with specific emphasis on studies that explored ethnic and cultural differences among caregivers of frail elders. Many of the studies reviewed suggested the importance of including attitudes, beliefs, and values in future studies on stress among ethnically diverse caregivers. Interestingly, the most consistent predictor of depression and life satisfaction among Japanese-American and Caucasian caregivers in the present study was that of "attitude toward family care." The following implications for future research are based on findings of this study.

Incorporation of ethnicity and culture. It is important that future studies incorporate the effects of ethnicity and culture, due to the increasing numbers of ethnic

minorities in the U.S. that will reach old age in the coming years. Testing models of stress and coping among ethnically diverse caregivers requires that clear conceptualizations of the potential effects of ethnicity and culture are made a priority, expanding the ethnically diverse caregiving literature. Continuing to answer empirically-based questions about elder care of ethnic minorities will become paramount in the coming years. Many previous studies on caregiving did not incorporate any conceptualization of ethnicity or culture (Dilworth-Anderson et al., 2002).

Neglecting to include the effects of ethnicity or culture in caregiving studies may have resulted in findings that are not reflective of the experiences of ethnic minorities. For example, an historically consistent predictor of the more deleterious effects of caregiving has been the use of social supports. Formal supports have been used to a higher degree by Caucasian caregivers, and informal supports have been relied on more heavily among ethnic minority caregivers in the U.S. (Aranda & Knight, 1997). Despite the widely held view that minority caregivers receive more social support from family members and friends than do Caucasian caregivers, the articles reviewed by Dilworth-Anderson and colleagues (2002) do not support this view. There is some evidence suggesting that a mediating factor such as culturally-based attitudes toward the provision of long-term care is responsible, at least in part, for the differences in social support among caregivers (Delgado & Tennstedt, 1997; Haley et al., 1995).

Incorporation of values, beliefs, and attitudes. To understand the unique social support circumstances of different ethnic groups of caregivers, researchers need to more critically examine the attitudes and beliefs held by elders who ascribe to traditional cultural

values. For example, future research with a Japanese-American caregiving sample similar to the one used in the present study, could benefit from exploring culturally-based attitudes of both traditional elders, their primary caregivers, and multiple helpers in their support networks. By expanding the sources of where caregiving assistance comes from, along with an exploration of the motivation of ethnically diverse caregivers for providing care, a more complete assessment of the needs of these caregivers may be discovered.

Continued use of the ATPLTC with subcales. Results from the factor analysis on the ATPLTC scale in this study demonstrated that two distinct factors are being measured with this scale. The results of this analysis support the use of the attitudes toward "family care" and "institutional care" items as separate scales. As shown in Table 8 (page 72), all of the "reversed" items load on Component 2, with the exception of item 8. The reversed items reflect more positive attitudes toward institutional care of frail elders, with emphasis on responsibility of institutions and government to provide this care. Caregiver participants may have had difficulty interpreting item 8, as an element of ambiguity is evidenced when examining this item. Item 8 states that "Families should plan for the possibility of providing care for a frail elderly family member." This could be interpreted to mean that family members should save money, for example, so that their elders could be cared for in an institution. Therefore, evidence for two subscales is supported by this analysis.

One of the contributions of this study is the modification of the original ATPLTC scale, and the discovery of the two factors. Although the scale measures "attitude toward family care," it also appears to measure "attitude toward institutional care." Further

exploration of the utility of this scale, in its modified version, with the subscales of family and institutional care, would be a useful addition to the caregiving literature. Future research should examine attitudes toward caregiving using the two subscales, rather than the scale as a whole. A particular use for these subscales would be with studies designed to explore the differences and similarities among Asian and non-Asian caregivers in the U.S. due to cultural differences based on the values of independence and interdependence referenced in this study.

Caregiver stress scale development. Particular problems with the measurement of stress among caregivers was referenced in earlier sections. Problems with present scales designed to measure stress include: (1) they are not designed to measure elder stress; (2) they are not designed to measure stress among caregivers of frail elders; (3) they exhibit unclear operational definitions of stress; and (4) poor psychometric properties of the scales that have been developed (Chiriboga, 1995). In addition, most current caregiver stress scales have not been tested with multi-ethnic populations. A scale specifically designed to detect stress among ethnically diverse caregivers would be a tremendous addition to future caregiving studies and the resulting literature.

Use of health indicators. An interesting finding from the present study indicated that caregivers in this sample (both Japanese-American and Caucasian) reported a high incidence of heart problems, including high blood pressure, heart attack, stroke, and high cholesterol. Over 45% of caregivers in both samples reported heart problems. Caregivers are notoriously neglectful of their own health, and do not always recognize how the stresses of caregiving are affecting them emotionally or physically. For example, it may be

the case that Japanese-American caregivers, who place a high value on interdependence and familism, neglect their own health. Future caregiving studies modeled on Knight and McCallum's (1998) study could explore the relationship between physical ailments (such as heart problems) and stress. Knight and McCallum (1998) measured the relationship between depression and heart rate among ethnically diverse caregivers, and found significant differences in the times at which heart rate increased while caregiving among the two groups. Future studies that use physiological measures of stress could improve the relevance of significant outcomes among caregiving studies.

Inclusion of qualitative inquiry. Although unsolicited, many respondents in this study expressed additional information about their role as caregivers that they felt were not being understood by professionals. Some of the qualitative information was communicated through notes written into the margins on the survey, on the back of the survey, or via separate note, letter, or phone call. Much of what was being expressed could be categorized as follows: (1) grief & loss; (2) feelings of hopelessness and despair; and (3) confusion & guilt. An interview format used to gather the richness of feelings not often expressed by caregivers in a survey format would add tremendously to a greater understanding of stress among caregivers. In addition, obtaining information from ethnically diverse caregivers may be facilitated by open-ended questioning, as written surveys may pose challenges for caregivers who do not speak English as their first language, or are more inclined to verbally share feelings.

More rigorous designs. Incorporation of more rigorous experimental research designs, longitudinal studies, and use of clear conceptual frameworks that are relevant to

ethnic minorities would significantly contribute to an understanding of multiethnic caregiving. Experimental designs with random sampling and control groups are needed to substantiate the findings of past studies on stress among caregivers. More culturally relevant and theory-driven research would provide a guide for how to examine the findings across multi-ethnic caregiving studies. Because attitudes, beliefs, psychosocial factors, and perceptions of stress change over time, use of longitudinal designs for caregiving studies would provide a more complete picture of how the ever-changing effects of caregiving impact ethnically diverse caregivers.

Additional recommendations for future studies. Although not addressed in this study, previous caregiving studies have explored stress and caregiving by distinguishing the unique effects produced by: (1) the differences between spouses as caregivers and adult children as caregivers; (2) the differences based on the relationship between the elder and the caregiver, and how a combination of stress and this relationship may result in neglect and abuse; and (3) the effects of other "person variables," such as self-reinforcement and perceived control. Self-reinforcement and perceived control were explored by Wong et al. (1999), and found to be significant predictors of depression among multi-ethnic elders in Hawai'i. Further exploration of these variables, along with variables found to be significant predictors of stress in the present study, may offer additional knowledge about stress among caregivers.

Implications for Social Work Practice

The present study tested a hypothesized model that was found to significantly predict depression and life satisfaction among ethnically diverse caregivers. Findings of

the present study suggest a number of social work practice issues relevant to assessment, provision of service, and psychosocial interventions with caregivers and the elders for whom they provide care. The following discussion emphasizes the importance of enhancing cultural competence and working within the framework of the life course perspective of aging as means for improving social work practice with elders and their family caregivers.

Of primary relevance to social work practice, results of this study suggest that social workers need to be aware of ethnic group differences in the prediction of stress among Japanese-Americans and Caucasians, particularly those living in Hawai'i. For example, this study has shown that lack of social support is directly related to increased stress among Japanese-Americans, but not among Caucasians. This finding does not imply that social workers should ignore the support systems of Caucasians; however, social workers may need to focus more on assessment of social support, and interventions geared toward increasing social support networks with Japanese-Americans.

Interestingly, findings from this study indicate that Japanese-American elders tend to use adult day care to a higher degree than Caucasians. Adult day care centers increase social supports for both the elder and their family caregivers. Therefore, social workers should consider the use of adult day care as a primary intervention among Japanese-Americans; whereas this intervention may be a secondary intervention for Caucasian elders and their families. For Caucasian caregivers, interventions may focus first on increasing use of services such as Handi-van, case management, or Meals-on-Wheels, or a reduction in the amount of time the caregivers are employed

outside the home. Both of these changes in the caregiving situation would reduce stress among Caucasian caregivers, based on the results of this study.

Second, social workers need to be aware of ethnic group differences in how stress, depression, and life satisfaction are expressed. An increased understanding of how the emotional states of caregivers are expressed differently among ethnically diverse caregivers is paramount for accurate assessments and appropriate interventions. From this study it is evident that, although stress was similar between the two groups, the predictors of stress were quite different.

Use of traditional assessment instruments may result in inaccurate assessments when utilized with non-Caucasian caregivers. Although the results of this study indicate the revised BDI used to measure depression resulted in nearly identical rates of depression among both the Japanese-American and Caucasian samples, assessment of depression among ethnically diverse caregivers may not always be similar. For example, traditional Japanese-American caregivers may reveal little personal information about their own physical or emotional needs, due to the cultural expectation to put the needs of the elder care-recipient ahead of their own needs. Further, based on the finding that a Japanese-American caregiver's compromised health, along with reduced social support, result in increased stress, a counseling intervention that recognizes the necessity of caregivers to place the needs of the elder care-recipient above their own, could prove to be quite successful at stress reduction. Once an understanding of the caregiver's frame of reference is acknowledged, counseling could proceed in the direction of encouraging medical appointments for the caregiver, and increasing social supports.

Recommendations to Enhance Policies that Affect Caregivers

Although not directly the result of findings from this study, the following recommendations are presented. These recommendations may help to reduce stress among family caregivers of frail elders. First, policies that acknowledge the important role of informal caregivers, predominantly women, are needed. An example of a policy that could substantially reduce stress among caregivers is an extension of the Family Leave Act. This Act ensures that employers allow time off to accommodate the needs of family caregivers. An improvement on this Act would involve provision of compensation while on leave, as many caregivers cannot take advantage of this policy because they would be left without income. Second, increased government funding is needed to assist with respite care needs, as respite care has been shown to be one of the largest contributors to reduction of stress among family caregivers (Knight et al., 1993; Montgomery & Borgatta, 1989).

Third, more affordable programs for home-based services are needed, particularly for the middle income group of seniors. The cost of private duty nursing care is prohibitively high for most seniors on a fixed income. Medicaid-eligible programs such as Nursing Home Without Walls, offers home-based serves to the lower income population of seniors. It is the middle income group of seniors that are not provided for in the community. An understanding of how financial eligibility requirements for services designed to help with elder care affect ethnically diverse caregivers that traditionally fall in high or low income categories will greatly improve a social worker's ability to help elderly clients and their caregivers. For example, the demographic findings of this study indicate

that Japanese-American care-recipient elders are more likely to receive Medicaid benefits (21.40% for Japanese elders) than Caucasian elders (17.40%). These findings represent a statistically significant difference in Medicaid eligibility between the two groups of caregivers. Because access to programs designed to assist frail elders and their caregivers, such as Nursing Home Without Walls and Chore Service, are determined by Medicaid eligibility, members of some ethnic groups may be more likely to be prevented from obtaining these services. There may be a confound between income and ethnicity with this issue, and further examination of these factors independently should be considered, without assuming exclusion from Medicaid-eligible programs based on ethnicity.

Conclusion

With respect to caregiving research with ethnically diverse caregivers, this study builds on the strengths of existing studies, and offers further support for the inclusion of conceptual frameworks that are culturally relevant. Culturally relevant frameworks that apply to ethnic minorities in the U.S. should include the life course perspective. The life course perspective takes into account the effects of cultural and ethnicity, along with values, beliefs, identities, and meanings assigned to experiences, experienced across the life span (Hooyman & Kiyak, 2002). It is hoped that future research on ethnically diverse caregivers incorporates indicators of the unique predictors of stress, coping, and well-being, particularly as American society continues to change demographically and culturally.

Although this study is one of many that seek to understand the relationship between stress and caregiving, this study represents one of the few attempts to explore the

usefulness of a prediction model of factors that contribute to stress among two ethnic groups: Japanese-American and Caucasian-American caregivers of frail elders. The potential usefulness of the findings for social work practice include an identification of factors that predict depression and life satisfaction among Japanese-American and Caucasian caregivers. This information can be used to more accurately identify and address problems that affect family caregivers of frail elders. Perhaps of greatest interest for social work practitioners, gerontologists, and other health care professionals is an increased appreciation of ethnic group differences in attitude toward the provision of long-term care for frail elders.

APPENDIX A: Invitation to Participate Letter and Sign-up Form

Attention Caregivers!

We are looking for very special people known as caregivers. If you are a caregiver, or know someone who is, please read on. We need caregivers who are currently providing care to a frail elderly family member, to participate in a caregiving survey.

I am a social worker with Castle Home Care, and a researcher at the University of Hawai'i. We are conducting a study about the experiences of caregiving, so that more useful services can be provided for caregivers like yourself. There is only one way to make this happen, and that is to ask you to share your thoughts, feelings, and experiences related to caregiving.

We are asking you to fill out a survey, that you will find very interesting. Please keep in mind that your responses will be anonymous and confidential. As a "mahalo" for filling out the survey, you will receive a $10.00 gift certificate from Long's Drugs.

We really need your help. If you are willing to help us by participating in this study, simply fill out the attached sheet and return it to me in the envelope provided. I will then mail you a survey to fill out, along with the gift certificate. Your ideas are important in helping us understand the problems caregivers face in Hawai'i. Your willingness to share these experiences is greatly appreciated.

Sincerely,
Linda A. McLaughlin, M.S.W.
University of Hawaii - Manoa
(808) 956-6136

NAME: _____

PHONE: _____

ADDRESS: _____

_____

DATE: _____

* Mail this form to:

Linda A. McLaughlin, M.S.W.
Ph.D. Candidate - School of Social Work
615-A Kanaha St.
Kailua, HI 96734

APPENDIX B: Survey Instrument

Elder Caregiving Survey

First, we'd like to find out a little about you, the caregiver. Please indicate your answers by **circling the response** that best fits you, or by writing your answer in the space provided.

1) **What is your gender?** Male Female

2) **How old are you?** _____

3) **Which of the following ethnic groups do you belong to? (circle all that apply)**

Caucasian Hispanic Vietnamese Thai Japanese

Chinese Korean Filipino Hawaiian

African-American Pacific Islander

Other - Please list any others:

_____

_____

4) **What is your relationship to the person for whom you provide care? I am his/her:**

Spouse Daughter Son Grandchild Hanai Friend

Other Relationship
(Please write what it is here:_____)

5) **Are you employed outside the home?** Yes No

6) **If you do work, how many hours per week do you work?**

_____

7) **If you do work, do you work due to economic necessity?**
Yes No

8) **If you do work, do you feel that your employment outside the home hinders or helps your caregiving?**
(please circle one)

Hinders Helps Neither

9) **What was your total gross household income in 2001? (check one)**

___ Less than $10,000
___ $10,000 to $19,999
___ $20,000 to $29,999
___ $30,000 to $39,999
___ $40,000 to $49,999
___ $50,000 to $75,000
___ more than $75,000

10) **Approximately how many hours per day do you spend caring for your elder?** _____

11) **How long have you been providing care to this elder?**
(respond in weeks, months, or years)

_____

12) **What is the highest education level you've completed?**
(circle your answer based on number of years in school)

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

0 = no formal education; 12 = High School;
16 = Bachelor's degree; 18 = Master's degree; 19 = Ph.D.

Now we'd like to ask you some questions about **your elder, the person for whom you provide care**. Again, please **circle the best response**, or write your answer in the space provided.

1) **What is the gender of the person you care for?**
Male Female

2) **How old is the person you provide care for?** _____(yrs)

3) **Which of the following ethnic groups does the elder you care for belong? (circle all that apply)**

Caucasian Hispanic Vietnamese Thai Japanese

Chinese Korean Filipino Hawaiian

African-American Pacific Islander

Other - Please list any others:

_____

_____

_____

4) **Please circle the types of health insurance that the care recipient has. (circle all that apply)**

Private Health Insurance Medicare

Medicaid Long-term Care Insurance

Don't Know Other (specify):

_____

5) **What was your elder's total gross income in 2001? (check one)**

___ Less than $10,000
___ $10,000 to $19,999
___ $20,000 to $29,999
___ $30,000 to $39,999
___ $40,000 to $49,999
___ $50,000 to $75,000
___ more than $75,000

6) **Do you use any services to help you care for your family member?** Yes No

7) **If you are using services, which services are you currently using? (circle all that apply)**

Meals on Wheels Respite Service Adult Day Care
Home Health Care Handi-Van
Hired Caregiver
Others (Please write them here): _____

Now we'd like to ask you some questions about how much help your elder needs with the following activities. **Please indicate your answer by circling 1, 2, or 3.**

Activities	Without Help	With Some Help	Unable to do
(1) Take care of own appearance	1	2	3
(2) Eat meals (feed self)	1	2	3
(3) Dress and Undress	1	2	3
(4) Walk	1	2	3
(5) Get in and out of bed	1	2	3
(6) Take a bath or shower	1	2	3
(7) Get to the bathroom on time	1	2	3
(8) Make needs understood	1	2	3
(9) Handle their own money	1	2	3
(10) Use the telephone	1	2	3
(11) Go Shopping	1	2	3

The following questions have to do with how much support you get from family and friends.
Please indicate your answer by circling 1, 2, 3, 4, or 5.

1 = I **STRONGLY AGREE** with this statement
2 = I **AGREE** with this statement
3 = I have no response one way or the other
4 = I **DISAGREE** with this statement
5 = I **STRONGLY DISAGREE** with this statement

1 2 3 4 5 (1) During the past year, people have given or loaned me money for special occasions or when I have needed it.

1 2 3 4 5 (2) During the past year, others have taken me places that I need to go when I have been unable to get there myself.

1 2 3 4 5 (3) During the past year, people have given or loaned me things when I needed them.

1 2 3 4 5 (4) During the past year, people were generally available to help me with jobs like household chores or yard work when I needed them.

1 2 3 4 5 (5) During the past year, people have generally been available to help me with my shopping if I've needed them.

1 2 3 4 5 (6) During the past year, I have been satisfied with the help I have received from others.

Please continue to indicate your answer by circling 1, 2, 3, 4, or 5.

1 = I **STRONGLY AGREE** with this statement
2 = I **AGREE** with this statement
3 = I have no response one way or the other
4 = I **DISAGREE** with this statement
5 = I **STRONGLY DISAGREE** with this statement

1 2 3 4 5 (7) During the past year, others have been available to me when I needed support in stressful situations.

1 2 3 4 5 (8) During the past year, others have often let me know that I am okay just the way I am.

1 2 3 4 5 (9) During the past year, when I was in need of support, others have comforted me by showing that they really cared about me.

1 2 3 4 5 (10) During the past year, someone has listened to me talk about my private feelings when I needed them to.

1 2 3 4 5 (11) During the past year, others have frequently told me that they feel close to me.

1 2 3 4 5 (12) I have felt that people have been interested in and concerned about me over the past year.

1 2 3 4 5 (13) During the past year, others have helped me to get my mind off my problems.

1 2 3 4 5 (14) I am satisfied with the amount of emotional support I have received from others over the past year.

Now we'd like to ask you some questions about your health. Remember, these questions are about **YOU** - not your family member. Please **write the number** in the space provided.

Number	Question
_______	(1) In the past **year**, how many times have **you** gone to see a doctor for anything other than routine checkups?
_______	(2) In the past **year,** about how many days have **you** stayed in bed because of an illness or injury?
_______	(3) In the past **year**, how many days have **you** been hospitalized?
_______	(4) In the past **year**, how many days have **you** had to miss work or cut down on your usual activities because of an illness?
_______	(5) In the past **month**, how many times have **you** gone to see a doctor for anything other than routine checkups?
_______	(6) In the past **month**, about how many days have **you** stayed in bed because of an illness or injury?
_______	(7) In the past **month**, how many days have **you** been hospitalized?
_______	(8) In the past **month**, now many days have **you** had to miss work or cut down on your usual activities because of an illness?

- -

In this section there is a list of health problems. Please make a check-mark by the health problems **you** have. Remember, **this is about you** - not the elder for whom you provide care.

Please make a check-mark in the space provided if you have been diagnosed by a physician with any of the following health problems.

_____ Vision problems (other than simply needing glasses)
_____ Hearing problems
_____ Problems with other senses (specify:_____)
_____ Asthma
_____ Chronic bronchitis
_____ Heart/Blood vessel problems (i.e., high blood pressure, heart disease, stroke, high cholesterol)
_____ Alzheimer's disease
_____ Other memory problems (not Alzheimer's)
_____ Arthritis (i.e., rheumatoid, osteoarthritis, gout)
_____ Diabetes
_____ Cancer (specify type: _____)
_____ Menopausal problems (i.e., hot flashes, dizziness, muscular weakness, sweating, irritability, mood swings)
_____ Headaches (frequent or severe)

_____ Are there any other problems which you have been diagnosed as having that are not mentioned above?

Specify : _____

- -

(1) **How many prescription medications are you currently taking?** (Please circle one)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

(2) **Do you have any nurses or aides visit you in your home on a regular basis to take care of you?** (Please circle one)

Yes No

(3) **How would you rate your health at the present time?** On a scale of 1-5, please circle the number that best fits for you:

1 = Excellent health

2 = Good health

3 = Fair health

4 = Poor health

5 = Extremely Poor health

Please respond to the following statements that reflect your views, thoughts, attitudes, and feelings about providing care to an elder person. **Please respond to each statement by circling the number that best reflects your ideas about caregiving.**

1 = I **STRONGLY AGREE** with this statement
2 = I **AGREE** with this statement
3 = I have no response one way or the other
4 = I **DISAGREE** with this statement
5 = I **STRONGLY DISAGREE** with this statement

1 2 3 4 5 (1) Families should not place severely impaired elders in institutions.

1 2 3 4 5 (2) Adult children should look after their parents, even when they become severely frail.

1 2 3 4 5 (3) Families that really want to provide care for a frail elder will find a way to do so.

1 2 3 4 5 (4) The physical demands of providing care to a frail elderly family member are manageable.

1 2 3 4 5 (5) It is the responsibility of families to care for their frail elders.

1 2 3 4 5 (6) Frail elderly members who cannot bathe or dress themselves are better off in nursing homes or care homes.

1 2 3 4 5 (7) Providing ongoing care for a frail elder would be one of the most meaningful things a person could do.

Please continue to indicate your answer by circling 1, 2, 3, 4, or 5.

1 = I **STRONGLY AGREE** with this statement
2 = I **AGREE** with this statement
3 = I have no response one way or the other
4 = I **DISAGREE** with this statement
5 = I **STRONGLY DISAGREE** with this statement

1 2 3 4 5 (8) Families should plan for the possibility of providing care for a frail elderly family member.

1 2 3 4 5 (9) Families should rearrange their schedules in order to provide care to a frail elderly family member.

1 2 3 4 5 (10) Frail elders who cannot bathe or dress themselves are an unfair burden to their children.

1 2 3 4 5 (11) When people can no longer care for themselves, it would be better for them to die than to be dependent on family members to provide care..

1 2 3 4 5 (12) It should be the responsibility of government programs rather than families to provide care for frail elders.

1 2 3 4 5 (13) Families are just as good at providing care to frail elders as organizations that specialize in providing those services.

1 2 3 4 5 (14) Frail elders who cannot bathe or dress themselves are an unfair burden to their spouse.

- -

Please circle the number that most accurately reflects your moods and emotions.

1 = I **STRONGLY AGREE** with this statement
2 = I **AGREE** with this statement
3 = I have no response one way or the other
4 = I **DISAGREE** with this statement
5 = I **STRONGLY DISAGREE** with this

1 2 3 4 5 (1) I have been feeling sad during the past two weeks.

1 2 3 4 5 (2) I have been feeling discouraged about the future.

1 2 3 4 5 (3) I did not feel like a failure in the past two weeks.

1 2 3 4 5 (4) I have been getting as much satisfaction out of things as usual.

1 2 3 4 5 (5) I have been feeling quite guilty most of the time.

1 2 3 4 5 (6) I have been feeling like I am being punished.

1 2 3 4 5 (7) I have been feeling disappointed in myself.

1 2 3 4 5 (8) I have felt as though I am worse than anybody else.

1 2 3 4 5 (9) I have had thoughts of harming myself.

1 2 3 4 5 (10) I have been crying more than usual.

1 2 3 4 5 (11) I have been feeling irritated all the time.

1 2 3 4 5 (12) I have been interested in being with other people.

Please continue to circle the number that most accurately reflects your moods and emotions.

1 = I **STRONGLY AGREE** with this statement
2 = I **AGREE** with this statement
3 = I have no response one way or the other
4 = I **DISAGREE** with this statement
5 = I **STRONGLY DISAGREE** with this

1 2 3 4 5 (13) I have had greater difficulty making decisions during the past two weeks.

1 2 3 4 5 (14) I feel that I am not as attractive as I was when I was younger.

1 2 3 4 5 (15) I have been able to work as well as usual.

1 2 3 4 5 (16) I have been sleeping as well as usual.

1 2 3 4 5 (17) I have been feeling more tired than usual.

1 2 3 4 5 (18) My appetite has been normal.

1 2 3 4 5 (19) Lately I have been more worried about my health than usual.

1 2 3 4 5 (20) I have lost weight without trying to.

This final group of statements has to do with the way people feel about their lives. **Please circle the number before each statement, based on the following scale.**

1 = I **STRONGLY AGREE** with this statement 2 = I **AGREE** with this statement 3 = I have no response one way or the other 4 = I **DISAGREE** with this statement 5 = I **STRONGLY DISAGREE** with this

1 2 3 4 5 (1) As I grow older things seem better than I expected.

1 2 3 4 5 (2) I am just as happy as when I was younger.

1 2 3 4 5 (3) These are the best years of my life.

1 2 3 4 5 (4) I get bored with most of the things that I do.

1 2 3 4 5 (5) As I look back on my life, I am fairly well satisfied.

1 2 3 4 5 (6) I have gotten most of the important things I've wanted out of my life.

1 2 3 4 5 (7) I am satisfied with what I have accomplished in my lifetime so far.

1 2 3 4 5 (8) I have gotten pretty much what I expected out of life.

1 2 3 4 5 (9) I expect good things to happen to me in the future.

1 2 3 4 5 (10) I am satisfied with my daily routine.

APPENDIX C: Modifications to the ATPLTC Scale

Original Instrument:

The following statements refer to personally providing care on an ongoing basis to a frail elderly family member. Please respond to each statement by indicating which response (1= strongly agree; 5 = strongly disagree) best expresses your attitude on the line provided.

1 = Strongly Agree
2 = Moderately Agree
3 = Neither agree nor Disagree
4 = Moderately Disagree
5 = Strongly Disagree

_____ 1. It is not fair that adult children should have to give up so much to care for frail elderly parents.
_____ 2. Families should not place severely retarded children in institutions.
_____ 3. A parent should look after his /her child, even if that child is severely disabled.
_____ 4. Families that really want to provide care for a disabled relative will find a way to do so.
_____ 5. Nursing homes or institutions can provide better care for disabled relatives than families.
_____ 6. The physical demands of providing care to a disabled family member are manageable.
_____ 7. It is the responsibility of families to care for their disabled members.
_____ 8. This society will collapse if family members do not provide care for their disabled members.
_____ 9. Frail elderly members who cannot bathe or dress themselves are better off in nursing homes or institutions.
_____ 10. Providing care for a disabled family member is one of the basic responsibilities of a family.
_____ 11. It is not fair that young parents should have to give up so much to care for retarded children.
_____ 12. Any right-thinking person would have second thoughts about providing care to a disabled family member.
_____ 13. People should be willing to quit their jobs in order to provide care to impaired family members.
_____ 14. Providing ongoing care for a disabled relative would be one of the most meaningful things a person could do.

_____ 15. Providing care to a disabled family members is a basic human responsibility.

_____ 16. Families should plan for the possibility of providing care for an elderly disabled family member.

_____ 17. Families should rearrange their schedules in order to provide care to disabled family members.

_____ 18. Providing care for disabled family members at home is useless since most of them will end up in institutions or nursing homes anyway.

_____ 19. Although medical advances have increased the need for extended care, family members should continue to provide this care to dependent family members.

_____ 20. Disabled children over the age of six years who cannot bathe or dress themselves are an unfair burden to their parents.

_____ 21. When people can no longer care for themselves, it would be better for them to die than to be dependent on family members to provide care.

_____ 22. Providing care to a disabled family member is mentally exhausting.

_____ 23. It should be the responsibility of government programs rather than families to provide care for disabled people.

_____ 24. Families are just as good at providing care to dependent family members as organizations that specialize in providing those kind of services.

_____ 25. Older family members who cannot bathe or dress themselves are an unfair burden to their children.

_____ 26. Humankind is benefited by families that care for their disabled members.

Changes to Original Measure *(original in bold and italic)*

_____ 1. It is not fair that adult children should have to give up so much to care for frail elderly parents. (no changes)

_____ ***1. It is not fair that adult children should have to give up so much to care for frail elderly parents.***

_____ 2. Families should not place severely impaired elders in institutions.

_____ ***2. Families should not place severely retarded children in institutions.***

_____ 3. Adult children should look after their parents, even when they become severely frail.

_____ ***3. A parent should look after his /her child, even if that child is severely disabled.***

_____ 4. Families that really want to provide care for a frail elder will find a way to do so.

_____ ***4. Families that really want to provide care for a disabled relative will find a way to do so.***

_____ 5. Nursing homes or care homes can provide better care for frail elders than family members.

_____ ***5. Nursing homes or institutions can provide better care for disabled relatives than families.***

_____ 6. The physical demands of providing care to a frail elderly family member are manageable.

_____ ***6. The physical demands of providing care to a disabled family member are manageable.***

_____ 7. It is the responsibility of families to care for their frail elders.

_____ ***7. It is the responsibility of families to care for their disabled members.***

_____ 8. This society will collapse if family members do not provide care for their frail elders.

_____ ***8. This society will collapse if family members do not provide care for their disabled members.***

_____ 9. Frail elderly members who cannot bathe or dress themselves are better off in nursing homes or care homes.

_____ ***9. Frail elderly members who cannot bathe or dress themselves are better off in nursing homes or institutions.***

_____ 10. Providing care for a frail elder is one of the basic responsibilities of a family.

_____ ***10. Providing care for a disabled family member is one of the basic responsibilities of a family.***

_____ 11. It is not fair that a spouse should have to give up so much to care for their mate when they become frail.

_____ ***11. It is not fair that young parents should have to give up so much to care for retarded children.***

_____ 12. Any right-thinking person would have second thoughts about providing care to a frail elderly family member.

_____ ***12. Any right-thinking person would have second thoughts about providing care to a disabled family member.***

_____ 13. People should be willing to quit their jobs in order to provide care to a frail elderly family member.

_____ ***13. People should be willing to quit their jobs in order to provide care to impaired family members.***

_____ 14. Providing ongoing care for a frail elder would be one of the most meaningful things a person could do.

_____ ***14. Providing ongoing care for a disabled relative would be one of the most meaningful things a person could do.***

_____ 15. Providing care to a frail elder is a basic human responsibility.

_____ ***15. Providing care to a disabled family members is a basic human responsibility.***

_____ 16. Families should plan for the possibility of providing care for a frail elderly family member.

_____ ***16. Families should plan for the possibility of providing care for an elderly disabled family member.***

_____ 17. Families should rearrange their schedules in order to provide care to a frail elderly family member.

_____ ***17. Families should rearrange their schedules in order to provide care to disabled family members.***

_____ 18. Providing care for a frail elder at home is useless since most of them will end up in nursing homes anyway.

_____ ***18. Providing care for disabled family members at home is useless since most of them will end up in institutions or nursing homes anyway.***

_____ 19. Although medical advances have increased the need for extended care, family members should continue to provide this care to frail elders at home.

_____ ***19. Although medical advances have increased the need for extended care, family members should continue to provide this care to dependent family members.***

_____ 20. Frail elders who cannot bathe or dress themselves are an unfair burden to their children.

_____ ***20. Disabled children over the age of six years who cannot bathe or dress themselves are an unfair burden to their parents.***

_____ 21. When people can no longer care for themselves, it would be better for them to die than to be dependent on family members to provide care.

_____ ***21. When people can no longer care for themselves, it would be better for them to die than to be dependent on family members to provide care.***

_____ 22. Providing care to a frail elder is mentally exhausting.

_____ ***22. Providing care to a disabled family member is mentally exhausting.***

_____ 23. It should be the responsibility of government programs rather than families to provide care for frail elders.

_____ ***23. It should be the responsibility of government programs rather than families to provide care for disabled people.***

_____ 24. Families are just as good at providing care to frail elders as organizations that specialize in providing those kind of services.

_____ ***24. Families are just as good at providing care to dependent family members as organizations that specialize in providing those kind of services.***

_____ 25. Frail elders who cannot bathe or dress themselves are an unfair burden to their spouse.

_____ ***25. Older family members who cannot bathe or dress themselves are an unfair burden to their children.***

_____ 26. Humankind is benefited by families that care for their frail elderly family members.

_____ ***26. Humankind is benefited by families that care for their disabled members.***

Revised version with "frail elderly" changes

_____ 1. It is not fair that adult children should have to give up so much to care for frail elderly parents.
_____ 2. Families should not place severely impaired elders in institutions.

_____ 3. Adult children should look after their parents, even when they become severely frail.
_____ 4. Families that really want to provide care for a frail elder will find a way to do so.

_____ 5. Nursing homes or care homes can provide better care for frail elders than family members.
_____ 6. The physical demands of providing care to a frail elderly family member are manageable.
_____ 7. It is the responsibility of families to care for their frail elders.

_____ 8. This society will collapse if family members do not provide care for their frail elders.
_____ 9. Frail elderly members who cannot bathe or dress themselves are better off in nursing homes or care homes.
_____ 10. Providing care for a frail elder is one of the basic responsibilities of a family.

_____ 11. It is not fair that a spouse should have to give up so much to care for their mate when they become frail.
_____ 12. Any right-thinking person would have second thoughts about providing care to a frail elderly family member.
_____ 13. People should be willing to quit their jobs in order to provide care to a frail elderly family member.
_____ 14. Providing ongoing care for a frail elder would be one of the most meaningful things a person could do.
_____ 15. Providing care to a frail elder is a basic human responsibility.

_____ 16. Families should plan for the possibility of providing care for a frail elderly family member.
_____ 17. Families should rearrange their schedules in order to provide care to a frail elderly family member.
_____ 18. Providing care for a frail elder at home is useless since most of them will end up in nursing homes anyway.
_____ 19. Although medical advances have increased the need for extended care, family members should continue to provide this care to frail elders at home.
_____ 20. Frail elders who cannot bathe or dress themselves are an unfair burden to their children.
_____ 21. When people can no longer care for themselves, it would be better for them to die than to be dependent on family members to provide care.

_____ 22. Providing care to a frail elder is mentally exhausting.

_____ 23. It should be the responsibility of government programs rather than families to provide care for frail elders.

_____ 24. Families are just as good at providing care to frail elders as organizations that specialize in providing those kind of services.

_____ 25. Frail elders who cannot bathe or dress themselves are an unfair burden to their spouse.

_____ 26. Humankind is benefited by families that care for their frail elderly family members.

Version with Rationale for Deleted Items:

____ 1. It is not fair that adult children should have to give up so much to care for frail elderly parents.

**** item (1) deleted - redundant with item (20)***

_____ 2. Families should not place severely impaired elders in institutions.

_____ 3. Adult children should look after their parents, even when they become severely frail.

_____ 4. Families that really want to provide care for a frail elder will find a way to do so.

_____ 5. Nursing homes or care homes can provide better care for frail elders than family members.

****item (5) deleted - redundant with item (9)***

_____ 6. The physical demands of providing care to a frail elderly family member are manageable.

_____ 7. It is the responsibility of families to care for their frail elders.

_____ 8. This society will collapse if family members do not provide care for their frail elders.

****item (8) deleted - awkward wording "society will collapse"***

_____ 9. Frail elderly members who cannot bathe or dress themselves are better off in nursing homes or care homes.

_____ 10. Providing care for a frail elder is one of the basic responsibilities of a family.

****item (10) deleted - redundant with item (7)***

_____ 11. It is not fair that a spouse should have to give up so much to care for their mate when they become frail.

****item (11) deleted - redundant with item (25)***

_____ 12. Any right-thinking person would have second thoughts about providing care to a frail elderly family member.

**** item (12) deleted - this item would be difficult to understand for ethnically diverse caregivers***

(e.g. "Right-thinking" - difficult to understand or explain)

_____ 13. People should be willing to quit their jobs in order to provide care to a frail elderly family member.

item (13) deleted - redundant with item (17)

_____ 14. Providing ongoing care for a frail elder would be one of the most meaningful things a person could do.

_____ 15. Providing care to a frail elder is a basic human responsibility.

item (15) deleted - redundant with item (7)

_____ 16. Families should plan for the possibility of providing care for a frail elderly family member.

_____ 17. Families should rearrange their schedules in order to provide care to a frail elderly family member.

_____ 18. Providing care for a frail elder at home is useless since most of them will end up in nursing homes anyway.

item (18) deleted - awkward ("useless" has little to do with providing care??)

_____ 19. Although medical advances have increased the need for extended care, family members should continue to provide this care to frail elders at home.

item (19) deleted - difficult wording to understand

_____ 20. Frail elders who cannot bathe or dress themselves are an unfair burden to their children.

_____ 21. When people can no longer care for themselves, it would be better for them to die than to be dependent on family members to provide care.

_____ 22. Providing care to a frail elder is mentally exhausting.

item (22) deleted - more like a stress question, not attitude about providing care??

_____ 23. It should be the responsibility of government programs rather than families to provide care for frail elders.

_____ 24. Families are just as good at providing care to frail elders as organizations that specialize in providing those kind of services.

_____ 25. Frail elders who cannot bathe or dress themselves are an unfair burden to their spouse.

_____ 26. Humankind is benefited by families that care for their frail elderly family members.

item (26) deleted - difficult to comprehend with current wording (e.g. "humankind is benefited")

Shortened and revised Version (used in the present study)

_____ 1. Families should not place severely impaired elders in institutions.

_____ 2. Adult children should look after their parents, even when they become severely frail.

_____ 3. Families that really want to provide care for a frail elder will find a way to do so.

_____ 4. The physical demands of providing care to a frail elderly family member are manageable.

_____ 5. It is the responsibility of families to care for their frail elders.

_____ 6. Frail elderly members who cannot bathe or dress themselves are better off in nursing homes or care homes.

_____ 7. Providing ongoing care for a frail elder would be one of the most meaningful things a person could do.

_____ 8. Families should plan for the possibility of providing care for a frail elderly family member.

_____ 9. Families should rearrange their schedules in order to provide care to a frail elderly family member.

_____ 10. Frail elders who cannot bathe or dress themselves are an unfair burden to their children.

_____ 11. When people can no longer care for themselves, it would be better for them to die than to be dependent on family members to provide care.

_____ 12. It should be the responsibility of government programs rather than families to provide care for frail elders.

_____ 13. Families are just as good at providing care to frail elders as organizations that specialize in providing those kind of services.

_____ 14. Frail elders who cannot bathe or dress themselves are an unfair burden to their spouse.

APPENDIX D: Letter of Instruction for Completing the Survey

Aloha Caregiver,

Thank you for your willingness to participate in this study on elder caregiving. Your insights are very important for helping us understand the experiences and service needs of caregivers in Hawai'i.

Included in this envelope are:

* **two consent forms** (copy for you & one to return)
* **the caregiving survey**, for you to fill out
* **a stamped envelope** for you to return the survey
* **a $10.00 gift certificate** for Long's Drugs.

The gift certificate is just a small way of thanking you for your time, and for your willingness to help us understand the experiences of caregivers. **Please return this survey within the next two weeks.**

Please understand that there are no "right" or "wrong" answers. Please don't feel as though you have to answer the questions in a particular way. Your true thoughts and feelings about caregiving is what will help us understand your unique situations.

So, sit down, relax, make a cup of tea, and enjoy the survey! Again, thank you so much for participating in this study. **We really need your answers and look forward to receiving them soon, within the next two weeks.** If you have any questions, please call me at 956-6136.

Best wishes to you and your family,
Linda A. McLaughlin, M.S.W.

APPENDIX E: Consent Forms

CONSENT FORM
(Return Copy)

AGREEMENT TO PARTICIPATE

Linda A. McLaughlin

School of Social Work University of Hawaii
1800 East West Road
103 Henke Hall
Honolulu, Hawaii 96822 Phone: (808) 956-6136

The purpose of this research study is to learn more about the experiences of caregiving for frail elderly family members.

As part of this study you will be asked to answer questions about your experiences as a family caregiver for a frail elder. The questions involve feelings and attitudes about caregiving, as well as questions about what you do to care for your family member. The approximate number of caregivers needed for this study is 200. The interview will take approximately one hour to complete. You will receive a $10.00 gift certificate for participating in this study.

All information from the questionnaire/interview will be kept confidential and will be used for research purposes only. All information will be filed separately under a code number and will not be associated with your name or address. Your participation is completely voluntary. You are free to withdraw from the study at any time. There is no penalty if you choose not to complete the interview or any part of it.

It is possible that answering some of the questions in the interview will make you feel uncomfortable because some of the questions are personal. If you find that completing the interview is upsetting to you and you want to share your concerns with me, please let me know immediately or call me at 956-6136.

Although you may not experience direct benefits for participation in this study, the potential benefits for caregivers in general is significant. Your experience as a caregiver is important in helping health care workers better provide helpful and useful services for you and your elderly family member.

I certify that I have read and that I understand the conditions of participation in this study. I also certify that I have been given satisfactory answers to my inquiries concerning the study procedures and other matters and the I have been advised that I am free to withdraw my consent and discontinue participation I the project or activity at any time without prejudice.

I herewith give my consent to participate in this study with the understanding that such consent does not waive any of my legal rights, nor does it release the principal investigator or the institution of any employee or agent thereof from liability for negligence.

_____

Name

_____

Signature Date

(If you cannot obtain satisfactory answers to your questions or have comments or complaints about your treatment in this study, contact: Committee on Human Studies, University of Hawaii, 2540 Maile Way, Honolulu, Hawaii 96822. Phone: (808) 956-5007

Thank you for participating in this study.

Code #: _____
(for office use only)

cc: Signed copy to study participant

CONSENT FORM
(Participant Copy)

AGREEMENT TO PARTICIPATE

Linda A. McLaughlin

School of Social Work University of Hawaii
1800 East West Road
103 Henke Hall
Honolulu, Hawaii 96822 Phone: (808) 956-6136

The purpose of this research study is to learn more about the experiences of caregiving for frail elderly family members.

As part of this study you will be asked to answer questions about your experiences as a family caregiver for a frail elder. The questions involve feelings and attitudes about caregiving, as well as questions about what you do to care for your family member. The approximate number of caregivers needed for this study is 200. The interview will take approximately one hour to complete. You will receive a $10.00 gift certificate for participating in this study.

All information from the questionnaire/interview will be kept confidential and will be used for research purposes only. All information will be filed separately under a code number and will not be associated with your name or address. Your participation is completely voluntary. You are free to withdraw from the study at any time. There is no penalty if you choose not to complete the interview or any part of it.

It is possible that answering some of the questions in the interview will make you feel uncomfortable because some of the questions are personal. If you find that completing the interview is upsetting to you and you want to share your concerns with me, please let me know immediately or call me at 956-6136.

Although you may not experience direct benefits for participation in this study, the potential benefits for caregivers in general is significant. Your

experience as a caregiver is important in helping health care workers better provide helpful and useful services for you and your elderly family member.

I certify that I have read and that I understand the conditions of participation in this study. I also certify that I have been given satisfactory answers to my inquiries concerning the study procedures and other matters and the I have been advised that I am free to withdraw my consent and discontinue participation I the project or activity at any time without prejudice.

I herewith give my consent to participate in this study with the understanding that such consent does not waive any of my legal rights, nor does it release the principal investigator or the institution of any employee or agent thereof from liability for negligence.

_____

Name

_____

Signature Date

(If you cannot obtain satisfactory answers to your questions or have comments or complaints about your treatment in this study, contact: Committee on Human Studies, University of Hawaii, 2540 Maile Way, Honolulu, Hawaii 96822. Phone: (808) 956-5007

Thank you for participating in this study.

Code #: _____
(for office use only)

cc: Signed copy to study participant

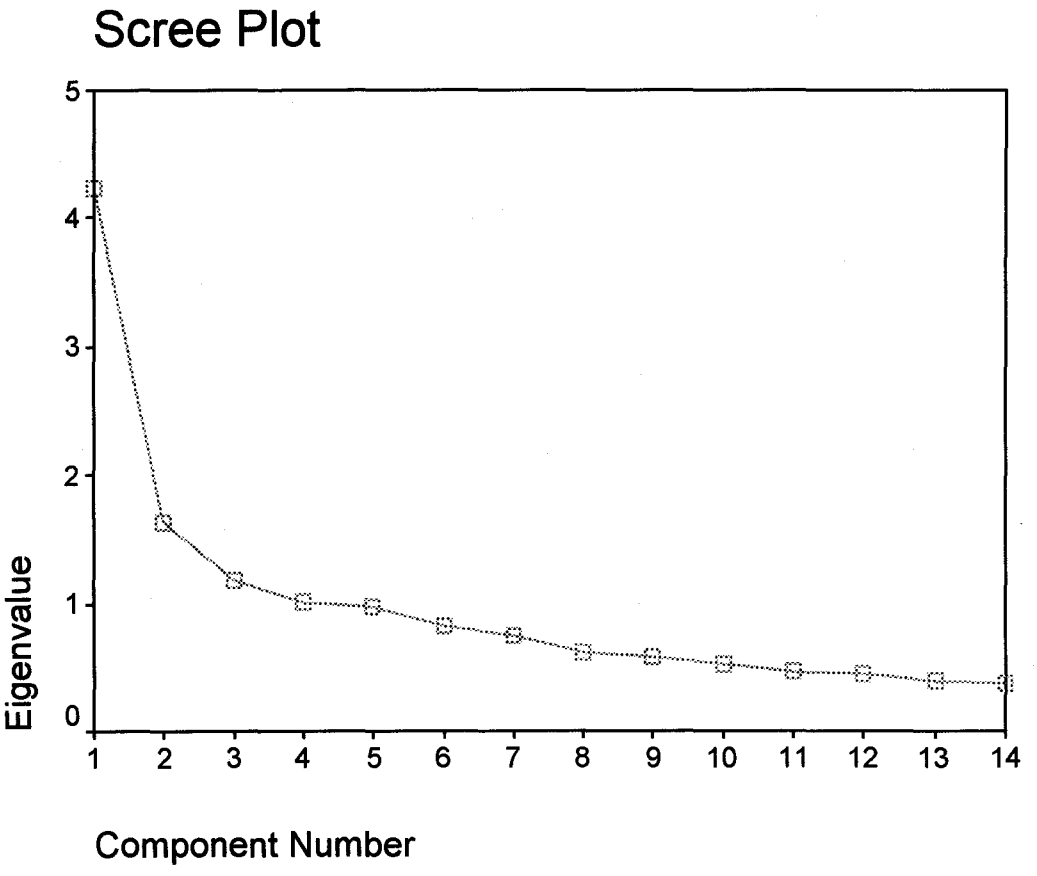
APPENDIX F: Factor Analysis (ATPLTC) Unrotated Loadings

ATPLTC Factor Analysis - Component Matrix
(unrotated loadings)

	Component			
	1	2	3	4
Attitude 5	.68			-.33
Attitude 10 (reversed)	.63	.48		
Attitude 3	.62			-.32
Attitude 4	.62	-.32		
Attitude 7	.60			
Attitude 14 (reversed)	.60	.48		
Attitude 2	.59	-.47		
Attitude 11 (reversed)	.56	.46		-.33
Attitude 9	.55		.52	.30
Attitude 12 (reversed)	.32			
Attitude 1	.49	-.54		
Attitude 8	.38	.34	.69	
Attitude 6 (reversed)	.52		-.53	
Attitude 13	.39			.68

Extraction Method: Principal Components Analysis

APPENDIX G: Factor Analysis (ATPLTC) Scree Plot



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