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presented by

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# THE INFLUENCE OF ACQUIRING THE FAMILY ELDERCARE ROLE ON FEMALE EMPLOYMENT ADAPTATION

By

Susan Tesch Franklin

A DISSERTATION

Submitted to
Michigan State University
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ABSTRACT

THE INFLUENCE OF ACQUIRING THE FAMILY ELDERCARE ROLE ON FEMALE EMPLOYMENT ADAPTATION

By

Susan Tesch Franklin

Demographic and social trends precipitate concern about work and family interactions, but eldercare's influence on employment is relatively unknown. Extending previous cross-sectional research about family care's effect on employment, this study examined the influence of acquiring the eldercare role for a physically disabled relative on the employment adaptation of women at role inception and three months later. The impact of caregiver/care recipient characteristics, family support, and caregiver involvement on three employment adaptation types, Type I (maintain, but alter work), Type II (leave of absence), and Type III (quit/retire) was investigated. Analyses included correlations, oneway ANOVA, paired and independent t-tests, contingency tables, McNemar procedures, multiple and logistic regressions, and discriminant analysis.

Varied adaptations occurred at both time periods. A major finding is the immediate influence of acquiring the eldercare role on the employment adaptation of women. Women reporting full-time or part-time employment prior to the caregiver role recounted substantial changes in that status at Time 1; they did not wait until Time 2. Caregivers reported using less employment adaptive behaviors at Time 2 than at Time 1.

Diverse variables influenced adaptation at Time 1. Caregiver/care recipient characteristics were more influential with Type I and Type II adaptations while family support and caregiver involvement variables were better predictors of Type III adaptation. At Time 2, no variables anticipated Type I or Type II adaptations, but household income and hours of supervision offered good explanatory power for Time 2, Type III adaptation. The use of Time 1, Type I adaptation did not influence the probability of Time 2, Type II or Type III adaptations.

Findings indicate the need to: (a) recognize the immediate influence of assuming the caregiver role, (b) increase workplace awareness of potential work/family conflicts, (c) include work/family care content in the educational preparation of family professionals, (d) provide socio-emotional services for families, (e) help policy makers alter the traditional family image, (f) champion national policies supportive of work/family issues, and (g) consider ethnicity and relationship quality in future family/work research.

Dedicated

in loving memory of my father

Carl E. Tesch

March 27, 1917 August 27, 1992

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Thanks to Dr. Barbara Ames, my advisor and committee chairperson, for the guidance and support she has provided throughout my graduate program. Her availability, encouragement (through good times and bad), and insightful comments about my dissertation made a difficult task easier.

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Thanks to Dr. Charles Given and to Dr. Barbara Given for granting access to the data set I used. The Givens also provided my first exposure to research during the time I worked with them as a graduate research assistant.

Special thanks to my dear husband, Greg. He not only gave me strong encouragement and support, but also kept my computer going, installed the needed software, learned to be a great cook, and ignored the dust! His quiet confidence in me made the stressful years of graduate school manageable.

Special thanks also go to my daughter, Stephanie. Most mothers returning to school do not have a college senior willing to share an apartment, provide campus orientation, study together, and think the whole process is fun! My campus year with Stephanie will always be a special memory.

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Thanks to my mother, Evelyn Tesch, and my mother-in-law, Emalee Franklin; they (and my father) never doubted my ability to accomplish this goal. Also, the support of my brother, sisters, and their families bolstered me when I needed it most.

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## TABLE OF CONTENTS

## LIST OF TABLES

## LIST OF FIGURES

# CHAPTER I

## Introduction

The expanded pool of employees with eldercare obligations solicits increasing concern in corporate America (Scharlach, Lowe, & Schneider, 1991). The relationship between caregiving responsibility and work quality and productivity generates the most employer interest. The escalating numbers of employed caregivers of elderly family members prompt predictions that eldercare will be the benefit issue of the 1990's (Denton, Love, & Slate, 1990; Friedman, 1986; Kola & Dunkle, 1988).

The eldercare phenomenon parallels the emergence of childcare as a benefit issue thirty years ago. Warshaw, Barr, Rayman, Schachter, and Lucas (1986) state that in the sixties, companies were forced to consider employer-supported childcare due to the influx of women into the work force. They further maintain that the workplace has paid little attention to the issue of employees with the responsibility for incapacitated or disabled family members. Today, childcare remains a problem; however, the eldercare concern may rival or surpass the childcare phenomenon. What makes the issue of eldercare and the workplace so significant today?

An examination of converging demographic and social trends provides insight into the situation. The trends underscore the importance of investigating the influence of acquiring the family eldercare role on female employment adaptation. Demographic changes, the shifting role of women, and the phenomenon of family caregiving merge

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**Scope of the Problem**

Changing population demographics activate this issue. The eldest cohort is increasing rapidly while the youngest cohort is decreasing. The percentage of elderly persons in the United States will swell from approximately 12% in 1990 to 21% by 2030. The population 19 years or less, now 29% of the total, will decline to 23.5% by 2030 (Waldo, Sonnefeld, McKusick, & Arnett III, 1989). Haber (1989) illustrates the aging of America at a slightly slower pace by projecting the percentage of persons over 65 to be 17.3% in 2020 and 21.7% in 2050. Within that group, persons over 85 are the fastest growing segment and are frequently dependent on long-term care, usually provided by their families.

In the past century, many changes contributed to the population shift toward longevity, increased numbers of elderly persons, and declining numbers of younger people. Hooyman and Ryan (1987) refer to changes in mortality and fertility rates and altered migration patterns as possible reasons for the dramatic increase in the absolute number and proportion of older people. Improved preventive medical care and the actual care and technology connected with acute illness episodes are other explanations for longer life expectancies. This, however, is not without cost; those improvements in preventive and acute medical care increase the possibility of chronic disease. The incidence of chronic illness increases with age and the presence of chronic diseases escalate the likelihood of dependency on others. The National Council on Aging

estimates 6.6 million people over 65 need some physical assistance. They predict that number will increase to nine million by 2000 and 19 million by 2040 (BNA, #21, 1989). Thus, more elderly persons and the increased incidence of chronic disease create challenges for families.

Brody and Brody (1989) maintain that thirty years of research disprove the widespread myth that families do not provide eldercare. In fact, they contend that families always have been and continue to be the "main provider of long-term health and social support to the aged" (p. 259). Female family members usually meet the caregiving challenge. In the Travelers survey, 63% of primary care providers were female (The Travelers Companies, 1988). Stone, Cafferata, and Sangl (1987) report that 72% of the caregivers identified through the *1982 National Long-Term Care Survey and Informal Caregivers Survey* were female. A progress report for Caregiver II (core study for this research) indicates that 76.3% of the caregivers were women (Pohl, Given, & Given, 1991). Other research also documents that women provide the most eldercare (Brody, Kleban, Johnsen, Hoffman, & Schoonover, 1987; Brody & Schoonover, 1986; Horowitz, 1985).

Women working outside the home in record numbers complicate this issue. In 1950, about 33% of women, 16-64 years of age and from the civilian, non-institutionalized population, were in the labor force, compared to 64% in 1985 (U.S. Bureau of the Census, 1986). The Bureau (1986) notes a decline (91% to 85%) for men during the same period and predicts that women will comprise 46% of the labor force in 1995. The annual growth rate for employed women between the years 1975-1990 was 2.8%;

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Winfield (1988) maintains that women have been the dominant factor in an expanding labor force. Brody (1990) concurs and reports that the proportion of employed women rose from 24% in 1930 to 70% in 1985. She claims the most rapid rate of increase is with middle-aged women. In 1990, 71% of women from age 45 to 54 worked outside the home, representing an increase from 54.6% in 1975 (Fullerton, 1991). Fullerton predicts that the percentage of employed women in that age group will continue to climb, increasing to 81.5% by 2005. Creedon (1988) estimates that 75% of women between 45 and 60 will be in the work force by the year 2000.

Presumably, the number of women coping with the dual roles of work and caregiving will continue an upward climb. Scharlach (1989), using 1986 United States Department of Labor information, asserts that the number of employed caregivers will increase substantially due to the increased number of women workers, an aging work force, and increased numbers of elders needing assistance. He also notes general characteristics of the employed caregiver. They are: (a) usually older than other employees, (b) generally in their 40's or 50's, (c) equally represented in job categories, and (d) on the job longer.

A national survey of caregivers, conducted for the American Association of Retired Persons and the Travelers Companies Foundation, found that 75% of caregivers were women, with an average age of 45 years (The Travelers Companies, 1988). Over half of the women were employed, with about forty-two percent reporting full-time work and 13% claiming part-time employment. The remaining women were either not

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employed or homemakers (27%) or retired (16%). Sixty-three percent of the women considered themselves to be primary caregivers of a disabled family member at least 50 years old.

Wisensale and Allison (1988) add to this finding when they report that women in the 45-64 age group are most likely to provide care to a disabled parent or husband. Of that group, 65% of women aged 45-54 work; however, that number decreases to 42% for women aged 55-64. Caregiving is a life cycle event for many women, beginning with childcare and ending with eldercare.

Horowitz (1985) notes a gender related division of labor for providing family care. She reports that the caregiving daughter usually holds primary responsibility for homemaking, child-rearing, emotional support for family members, and often works full-time. Several years later, the findings remain consistent. Finley (1989), too, describes significant gender differences in caregiving. She also notes that, in spite of more role conflict for women than for men, women are more likely to provide eldercare. Society seldom places the same multiple demands on men that it does on women.

When both men and women provide care, the hours involved by gender varies. Anastas, Gibeau, and Larson (1990) report the mean hours of care for female caregivers is 10.9 per week while the average for their male counterparts drops to 5.8 hours per week. Results of the Travelers survey indicate even more disparity; 16.1 hours for women versus 5.3 hours for men (The Travelers Companies, 1988). High care hours have the potential to negatively influence the ability to maintain employment responsibilities.

Brody (1985) refers to the "woman in the middle," a woman surrounded by multiple pressures. This woman has principal responsibility for the care of a dependent parent (usually the mother), experiences competing demands on time and energy, suffers strains as a result of parent care, possibly has the "empty nest" refilled, and often works full or part-time. Sidel (1986, p. 167) echoes the dilemma of women in the middle and notes "younger women are increasingly torn among their responsibilities toward their own families, their responsibilities toward the older persons, and these days a job as well." A study by Young and Kahana (1989) illustrates employment as a significant predictor of adverse reaction during the caregiving period.

The Older Women's League publication, *Failing America's Caregivers: A Status Report on Women Who Care* (1989) states that 1.8 million women are simultaneously caring for children and elderly relatives. Half of these women are in the work force; 20 percent of the women have a parent living in their home. Obviously, substantial numbers of women provide care to an elderly family member while also attempting to maintain employment and manage additional family responsibilities. The number of eldercare hours provided varies with the characteristics of the care recipient, the involvement of other family members and friends, and the utilization of formal services. Scharlach (1989) reports that 20-28% of employees provide care at any one time and give 6-10 hours per week of aid to impaired elders. Results of the Travelers survey, where 20% of employees over age 30 provided an average of 10.2 care hours per week, support that statistic (The Travelers Companies, 1988). Gibeau (1988) notes the primary caregiver provides 12.1 hours of care per week; a slightly higher mean than the preceding references.

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While reports of means are useful, they also obscure the intense involvement some caregivers contribute. For example, in the Travelers survey, eight percent of all caregivers spent more than 35 hours per week providing care; almost a second full-time job! In another example of high care hours, Wisensale and Allison (1986) refer to a Connecticut survey where most caregivers were females between 40-59 years of age who spent an average of 82 hours monthly (20.5 hours/week) providing care.

Brody, Kleban, Johnsen, Hoffman, and Schoonover (1987) provide complementary insight into the impact of caregiving hours per week on the employed caregiver. First, they refer to the persevering worker as one who provides 12.7 hours per week of aid and does not consider quitting her job to do so. The second employee example, a conflicted worker, provides 23.3 care hours per week and is considering either decreasing work hours or stopping employment. Of interest, the number of caregiving hours for the conflicted worker is just under the 24.1 care hours per week that the traditional non-working caregiver provides! Finally, the third employee category refers to those who quit work to provide care; these caregivers give about 38 hours of help per week. Clearly, much care hour variation exists from the mean of 10-12 hours per week reported in some studies.

This variance partially relates to the dependencies of the elder. Scharlach (1989) discovered that employees who cared for cognitively impaired elders spent approximately one and a half times as many hours in caregiving as did other employee caregivers. Although ethnicity appears to create diversity, there is limited literature reporting ethnic differences in caregiving. Most inferences arise from case experience and indirect sources of data (Sakauye, 1988). White-Means and Thornton (1990) examined data from

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the *1982 National Long-Term Care Survey and National Survey of Informal Caregivers* to study Americans with different ethnic backgrounds in relation to caregiving. They found that the mean hours of care per day ranged from 2.45 for caregivers of German descent to 4.20 for those of African origin (17.15 to 29.40 hours per week). Caregivers of English extraction provided 2.85 hours while those of Irish lineage gave 2.94 hours of care per day (19.95 to 20.58 hours per week) to their ailing elders.

The hours of care provided create costs for caregivers, regardless of employment or ethnic status. Horowitz (1985) and Buglass (1989) report that emotional strain, restrictions on time and freedom, and economic hardships generate the burdens experienced by some caregivers. Hooyman and Ryan (1987) reinforce this finding and report that many women are physically and emotionally exhausted by multiple role demands.

However, choosing to leave the work force in order to provide care does not necessarily decrease burden. Barnes, Given, and Given (1991) report that adult daughters who ended employment in order to give care evidenced the greatest need for caregiver support and were at increased risk for depression. Clearly, multiple issues surround the caregiving experience.

**Statement of the Problem**

The growing population of employed female family caregivers and the possible negative interactions between caregiving and employment responsibilities stimulate increasing concern. The long-held notion that work and family denote two separate worlds has been under intense bombardment and is weakening under the pressures of a

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two-gender work force (Winfield, 1988). The increased flexibility of former rigid role and life patterns heightens anxiety about the interaction of work and family (Frone & Rice, 1987). Managers are beginning to see the close connection between work and family, but its influence is unknown. The present study addressed this family and work interaction.

**Purpose of the Study**

The purpose of the study was to investigate the influence of acquiring the role of caregiver for a physically disabled elderly relative on the employment adaptation of women. Three types of adaptation were considered in the study. Type I adaptation involves maintaining, but altering one's work role and includes: (a) arriving late/leaving early, (b) missing work without pay, (c) taking sick/personal days, (d) changing work hours, (e) refusing jobs or promotions, (f) not looking for jobs or better jobs, and (g) other ways that caregiving may affect work. Type II adaptation is taking a leave of absence and Type III adaptation is quitting or retiring from employment in order to provide care. Unless specified otherwise, the study objectives encompassed each type of adaptation.

The study included examination of (a) the immediate and delayed (after three months) employment adaptation for the female employee; (b) the influence of selected caregiver and care recipient characteristics (caregiver age, relationship to care recipient, marital status, education, occupation, household income, employment status, co-residence status, and care recipient age and gender) on employment adaptation at Time 1 and Time 2; (c) the influence of family support (number in network, amount of help, and frequency

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of family assistance with eldercare) on caregiver employment adaptation at Time 1 and Time 2; and (d) the influence of caregiver involvement (total assistance with activities of daily living (ADL), instrumental activities of daily living (IADL), and health care activities (HCA) and the hours of both physical care and supervision) on employment adaptation at Time 1 and Time 2; and (e) the probability of the caregiver displaying Type II or Type III adaptation at Time 2 given the level of Type I adaptation at Time 1.

**Relationship of this Study to Grant #2 RO1 AG06584**

This study utilized data from the core research effort, "Caregiver Responses to Managing Elderly Patients at Home" (Caregiver II). Caregiver II, conducted by researchers at Michigan State University, is an extension of "Caregiver Responses to Managing Elderly Patients at Home" (Caregiver I). The original study began in 1986; the extension (Caregiver II) continues through 1992 and is funded by Health and Human Services National Institute on Aging.

The core research that forms the basis for the present study focused on two goals. The first was to identify an inception cohort of family members who were new to caregiving, to follow them for 18 months, and to compare those who continued to provide care with those who ceased their caregiving role and chose other alternatives to meet their elderly relative's needs. The second goal was to describe, over 18 months, the types of care provided to all patients whose caregivers either ceased or persisted in family caregiving (Pohl, Given, and Given, 1991).

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**Significance and Generalizability**

As noted, the number of employed female family caregivers will continue to increase due to current and projected demographic and social trends. The employees' job performance, time lost from work, and the ability to remain employed influence the financial bottom line for employers (Scharlach, 1989). Consequently, the desire to motivate employees, decrease absenteeism and tardiness, and attract productive workers will persist in generating employer concern. Increased productivity and financial viability are employers' desired outcomes.

Warshaw, Barr, Rayman, Schachter, and Lucas (1986) maintain that the "extent to which the competing demands of work and family care may actually inhibit labor force participation or affect either the quality of family care or job performance has not been adequately explored" (p. 2). Also, Brody, Kleban, Johnsen, Hoffman, and Schoonover (1987) claim that little research exists regarding patterns of women and work in relation to eldercare. Most previous research uses the context of childcare (Friedman, 1988). Kola and Dunkle (1988) also note the lack of adequate research focusing on the interaction between family and work roles. They, too, maintain that most existing research about family and work relates to childcare. The present study adds to that body of knowledge by examining the influence of acquiring the family caregiver role on female employment adaptation, both at the inception of the eldercare function and three months later.

Much previous research involving family caregivers studied caregiver burden (Archbold, 1983; Barusch & Spaid, 1989; Brody, 1985; Fitting, Rabins, Lucas, & Eastham, 1986; George & Gwyther, 1986; Gilhooly, 1984; Given, King, Collins, &

Given, 1988; Given, Stommel, Collins, King, & Given, 1990; Horowitz, 1985; Montgomery, 1989; Stommel, Given, & Given, 1990). A gradual shift in research emphasis from caregiver burden to the influence of eldercare on employment began about six years ago. While that body of literature continues to grow and provide valuable insight into the complicated interaction of work and caregiving, much is still unknown. Some people choose to stop work in order to provide care; others elect to halt informal caregiving and institutionalize the elderly relative in order to continue employment. In between those extreme adaptations, a range of alternative behaviors, such as decreased work hours, choosing a less demanding job, or arranging to share the care with formal and informal caregivers, exists. It is important to identify key events that influence those decisions.

In contrast to the present study, most previous researchers investigating the consequences of caregiving studied well-established caregivers and used a cross-sectional design. However, some longitudinal studies exist and they present a complex picture of change over time (Given, Stommel, & Lin, 1991; Robinson & Thurnher, 1979; Stoller & Pugliesi, 1989b; Zarit, Todd, & Zarit, 1986). Neal, Chapman, Ingersoll-Dayton, Emlen, and Boise (1990) urge that future research on employees and caregiving responsibilities considers variation within and across groups of caregivers as well as how caregiving demands (and influence on employment adaptation) change over time. Stone and Short (1990) reference a growing number of federal, state, and private initiatives that target benefits to employed caregivers. They, too, recommend the empiric investigation of the interrelationship with caregiving and employment.

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## Conceptual Framework

### Human Ecology Theory

The conceptual framework and theoretical base for the study flow from two general theories; namely, the human ecological and choice and exchange theories. The use of these theories allows the examination of family caregiving and employment in a relational context. Caregiving represents a dynamic, not static process of interaction and adaptation of family members with their environment, a basic tenet of the ecological perspective. The individual (caregiver) or unit (family) in interaction with the environment constitutes an ecosystem. The family ecosystem environment includes the analytically separated, but interrelated human-built, social-culture, and natural physical-biological environments (Bubolz & Sontag, in press).

In the context of their environments, individuals and families adapt to meet changing needs. Adaptation allows individuals and families to respond to the disequilibrium that may occur when the family system is disturbed by the need to provide eldercare. The primary caregiver endeavors to maintain a balance between home and employment obligations. The family as a whole responds to the altered situation.

The adaptation (modification of behavior, feelings, ideas, and the environment), that families make to meet changed member demands is a key ecological concept (Bristor, 1990). A primary need of one person (in the present study, eldercare) triggers responses from other relatives. The employment adaptation that caregivers may make in order to satisfy eldercare commitments is the dependent variable for the study.

Other ecological concepts important to this study include the family and resources. The family can be a resource to the employed caregiver. Matthews and Rosner (1988)

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report that sister dyads used routine involvement and back-up support in order to meet their parent care obligations. The responses of the family, either the direct involvement of the primary caregiver or the family assistance other members provide, denote resources for the elderly relative needing help. Caregiver and care recipient characteristics also may be resources that influence the caregiving and employment interaction. In the present study, selected caregiver/care recipient characteristics include the caregiver's age, relationship to the care recipient, marital status, education, occupation, household income, and employment status; the care recipient's age and gender; and the dyad feature of co-residence. Family support, caregiver involvement, and caregiver/care recipient characteristics are the independent variables in the study.

Throughout the process of eldercare and the probable employment adaptation by the primary caregiver, other meaningful ecological concepts (time, space, and energy) are involved. In the present study, the period between the inception of the caregiver role and three months later represents an actual example of the calendar time spent providing care. Temporal orientations, such as past experiences, present needs, and future desires of the caregiver and family system influenced the decisions (made in the context of the family ecosystem environment) that led to the acquisition of the eldercare role.

Concurrently, space, such as the residence the caregiver dyad may share or the geographic distance between members in the family network, impacts eldercare and family relations. Also, conceptual space, as with family members "distancing" themselves from direct care involvement or the bounded, but interrelated systems of work and family influence the care situation. Likewise, energy, or the ebb and flow of individual and family internal and external resources, enables the adaptation and response

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Choice and Exchange Theory

The interaction and adaptation families make as they struggle to manage the competing demands of work and eldercare involve many decisions or choices. When discussing the choice and exchange theory, Nye (1979) maintains that one makes infinite numbers of choices in order to decrease costs and maximize rewards for the most profit (or least loss). He views choice as the most significant aspect of the theory. Some choices regarding caregiving and work are obvious and individual, such as choosing to decrease work hours in order to provide care. Caregivers also make less obvious or direct choices, for example, using vacation time to meet eldercare obligations. Additional elements of preference for the family caregiver may include the amount of caregiving load assumed and the time allotted for competing work and family roles.

Finally, other family members choose to provide either physical or emotional assistance to the caregiver or the care recipient or to distance themselves from the care situation. Thus, decisions regarding eldercare that the family makes may influence the primary caregiver's adaptation to employment.

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## Assumptions

### *Assumptions of the Ecological Perspective*

The following assumptions are from Bubolz and Sontag (in press).

1. The family and its interaction with the environment is considered an ecosystem.*
2. The family manages the bio-physical, psycho-social, economic, and nurturance needs and functions of its members.*
3. All humans are interdependent with one another and with environmental resources.*
4. The properties, structure, and processes involved with the family and its environment must be considered as interdependent and analyzed as a system.
5. Families are interdependent with other forms of life and the non-living environment.
6. Adaptation to their environments is a continuous process in families.
7. All parts of the environment (natural biological-physical, social-cultural, and human built) are interrelated and influence each other.
8. Families are part of and interact with many environments.
9. Families are energy transformation systems that use energy for survival, interaction, and adaptation.
10. Family interactions are guided by physical and biological laws of nature and human derived rules.
11. Environments provide limitations and opportunities for families.
12. Families have varied amounts of control related to environmental interactions.

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13. Decision-making is the central control process that families use to attain individual and family goals.

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*Assumptions of Choice and Exchange Theory*

The following assumptions are from Nye (1979).

1. Human behavior is rational in spite of the occasional use of insufficient information and incorrect forecasting of the future.
2. Humans at any level (from individual to nations) act to decrease their costs and increase their rewards.
3. Humans are able to expect increased rewards and decreased costs from responsive governmental or private institutions.
4. Humans are able to presume general reciprocity between themselves and society.
5. Humans recognize their choices influence the rewards and costs of others in the groups to which they belong.

*Assumptions of this Study*

1. The ability of an elderly individual to adapt to increased functional health problems relates to the amount and kind of family resources available.
2. Families make choices to aid their elderly relative based on a consideration of alternatives, costs, and benefits.
3. Families prefer to help their elderly member live independently and avoid institutionalization.

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4. The degree of caregiver involvement in eldercare influences employment adaptation.
5. The size and quality of the caregiver's family network influence the care situation and employment adaptation.
6. The assistance families provide to the primary caregiver influences the care situation and employment adaptation.

**Limitations**

The core study purpose is to identify an inception cohort of caregivers and follow them to determine differences between those who cease caregiving and those who persist. It also seeks to describe the type of care provided to all patients regardless of whether the original caregiver stopped or continued to provide care. Because the core study focus is not the employment adaptation of female caregivers, it is impossible for the present research to provide an exhaustive investigation of the caregiving/work interaction.

The use of secondary data limits the variables available for analysis to those from the original research. In some instances, the same variable is not measured on each wave of data, thus making comparisons of two time frames difficult or impossible. While the employment variables for this study are valuable, additional components would enhance the usefulness of the results. For example, the general work environment and the employment policies and practices affecting eldercare for caregivers in this study are unknown. Perhaps some caregivers in the sample are employed by companies sympathetic to their employees' family care needs while others are not. Objective

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measures of the actual employment adaptations used (employment records, rather than self-report information) would increase the value of the present research.

Also, the analysis did not include comparison groups of employed non-caregivers; thus, the magnitude of the influence of caregiving on employment adaptation could not be measured. Systematic research on the differences between employed and nonemployed caregivers needs to be done (Neal, Chapman, Ingersoll-Dayton, Emlen, & Boise, 1990).

As with employment adaptation data, the caregiver self-report responses for family support or eldercare involvement offered subjective, rather than objective measures. Individuals vary in their perceptions of reality; thus, their judgments of the amount and frequency of family help may reflect those biases. Similarly, how they rate their own eldercare involvement may be influenced by their perception of the quality of the relationship with the care recipient or by their definition of the role.

Finally, little research on eldercare and employment considers variables related to ethnicity. Thus, the analysis of caregiving determinants and labor market decisions usually does not use an ethnic approach (White-Means & Thornton, 1990). Although race is considered in the core study, preliminary information indicates the vast majority of caregiver dyads in the study are white. Ethnicity and its relationship to eldercare and workplace adaptation should be considered in the future.

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# CHAPTER II

## Review of Literature

Research and related literature are organized in five categories. Reviews include the influence of eldercare on employees and families, on employers, and on society, followed by an examination of the human ecological approach and the choice and exchange theory.

### Influence on Employees and Families

Family caregiving's effect on employees has stimulated increased attention from researchers. While studies generally support the notion that caregivers adapt employment to manage caregiving obligations, the reported amount of influence varies. Anastas, Gibeau, and Larson's (1990) survey of employed caregivers was the first of its kind to look at working families and eldercare with a national rather than a regional perspective. Although not a large sample (N=409), results did support similar local or regional surveys. The respondents were rather evenly divided between male and female workers.

In response to questions about work adaptation because of caregiving, the caregivers in the study reported that they: (a) used vacation time—64%, (b) changed schedules—33%, (c) used personal leaves—32%, (d) missed work meetings—18%, (e) missed outside conferences—14%, (f) missed overtime—13%, (g) called in sick—8%,

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(h) refused more responsible jobs—7%, (i) were unable to seek new jobs—6%, (j) left their jobs—5%, (k) refused job offers-4%, and (l) took leaves of absence—3%.

Another study of caregivers (N=754) conducted by the Association for Retired Persons and The Travelers Companies Foundation (1988) found that 53% of caregivers were employed and that 38% of that group either lost time from work or came in late due to caregiving responsibilities. Twenty percent of the employed caregivers lost benefits as a result of the employment adaptation that they made.

Other studies support the competing demands of work and caregiving. Scharlach and Boyd (1989) compared employed caregivers (N=341) with non-caregiving employees (N=1557). They found that 73.1% of caregivers reported interference with their jobs, but only 49.1% of the other employees described conflicts with work and family responsibilities. The researchers also learned that 37% of the caregivers versus 23.2% of the other employees missed work due to family responsibilities. In addition, the average number of missed work days was one and one half times higher for caregivers than for those without care responsibility.

Fernandez (1990) reports that eight percent of the people surveyed in his 1988 employee survey (N=26,000) recounted eldercare responsibilities while slightly over two percent (2.4%) claimed both elder and childcare obligations. Results about the relationship between caregiving responsibility and lost productive time show gender differences for caregivers of elderly persons, children, or both, and for those without caregiving responsibilities. In three of four categories, women had a higher percentage of missed work time. For example, for those with eldercare responsibilities, 45% of women versus 28% of men missed work; 33% of the women and 25% of men arrived

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late; and 54% of the women versus 46% of men left early. However, nearly equal percentages of men and women reported dealing with family problems at work (women = 81%; men = 82%).

The biggest gender differences came when caregivers claimed both child and eldercare obligations. Again, women reported greater disruption, especially with missed work (women = 55%; men = 28%), arrived late (women = 41%; men = 27%), and left early (women = 63%; men = 47%). Like with eldercare, there was little difference between the genders in dealing with care issues at work (women = 87%; men = 83%). Not surprisingly, those without care responsibility had little gender disparity in each work adjustment category, although women reported more disruption than men in each grouping.

Scharlach's (1989) study of TransAmerica Life employees who were caregivers for either cognitively or physically impaired elderly persons (N=332) also suggests that important work-related adaptation occurs. Caregivers of a cognitively impaired person missed an average of 3.4 hours of work in the previous month compared to 2.4 hours missed by caretakers of the physically impaired. Also, the percentage of those reporting work changes in the previous two months was substantially more for the caregiver of the cognitively impaired. For example, 41.8% of caregivers for the cognitively impaired reported "left early" versus 28.8% of other caregivers; "extended a break" was 23.5% versus 11%; "took a day off (with pay)" was 45.5% versus 28.2%; "used vacation time" was 53.1% versus 36.8%; "too tired to work" was 42.4% versus 26.3%; and "considered quitting" was 14.7% versus 5.8%.

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Another report involving TransAmerica employees (N=341) indicates that employment adaptation was greatest when the care recipient was more impaired and when the caregiver felt that support for the role was inadequate (Scharlach, Sobel, & Roberts, 1991). That study emphasizes the importance of family roles and characteristics of the caregiver and the care recipient in predicting employment outcomes.

Employment outcomes do make a difference! TransAmerica Life found that one in three TransAmerica employees providing eldercare missed work. Survey results suggest that Transamerica employees lose more than 1600 work days annually, translating into a yearly loss of $250,000 in salaries and benefits ("1,600 Days Go," 1988).

In another study (N=491), Stone and Short (1990) found an increased probability for female employees to adapt work schedules to meet caregiving responsibilities. Female caregivers were 11.8% more likely to adjust their work schedules than their male counterparts. Also, white caregivers were 15.1% more likely to adjust schedules than non-white caretakers. Caregiver health complicated the work/family conflict. Caregivers in poor health were more likely to adjust their work schedules than those who reported good health.

Stone and Short (1990) also found that the higher the need of the elder, the more likely were caregivers to adjust their work schedules. For example, in their study, caregivers helping elders with behavioral problems were 18% more likely to alter their work schedules. Surprisingly, the severity of the care recipient's activity of daily living dependencies did not influence caregiver work accommodation. However, 22-28% of caregivers worked with some employment adaptation. That percentage contrasts sharply

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with the American Association of Retired Persons (1987) *Caregivers in the Workplace Survey* (N=322) where only five percent of caregivers reported their caregiving responsibilities regularly interfered with work duties.

In a study (N=7801) of absenteeism and stress among employed caregivers, Neal, Chapman, Ingersoll-Dayton, Emlen, and Boise (1990) conclude that interruptions during work provide the only measure of time loss obviously associated with caregiving responsibilities. However, in that study, interruption rates were two to three times higher for the caregiver employee than for workers without dependent responsibility. Again, women reported the most difficulty with work interruptions and, as expected, full-time employees had more problems than did the part-time group. The study also suggests that the personal and home-related aspects of the caregiver's life suffered more than work-related components. Orodenker (1990) supports the notion of caregiving and work conflict and the resulting influence on employment adaptations. She reports that employed caregivers experienced more stress after they altered their work schedules because of their inability to balance competing role demands.

The stress resulting from employment and caregiving conflicts may lead to the decision to quit work, especially for women. Data from the Family Survival Project suggest that caregiving is a stronger deterrent to adult daughters employment than to any other caregiver group (Enright & Friss, 1987). A later account notes that 22% of unemployed caregiving daughters in the study of brain-impaired adults quit their position in order to provide care (Enright, 1991).

Anastas, Gibeau, and Larson (1990) also recount that women are more likely than men to describe high degrees of work and family conflict and to consider ending

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employment. In their study (N=436), 75% of those who pondered quitting in order to provide care were women. Personal characteristics of the caregiver and the amount of care given are important factors in the decision equation. Relinquishing a job is more likely to be the choice of a woman over 50 who is also providing a large number of care hours per week (Brody, Kleban, Johnsen, Hoffman, & Schoonover, 1987). In their study of adult caregiving daughters (N=150), 45% of the women who quit work provided 40 hours of care per week for their dependent mothers. These also were women with the lowest education, income, and occupational status and who were more likely to have a "job" versus a "career." Ferree (1987) supports that finding and maintains that "working-class women are not committed to careers in the middle-class sense, and they are likely to change jobs, refuse promotions, and restrict hours in order to carry out their domestic responsibilities" (p. 292).

Finally, preliminary results from the analysis of data from the present study sample showed that caregivers made some employment adaptation in order to provide care (Franklin, 1991). At Time 1, their involvement with family eldercare was significantly correlated with missing work days without pay, decreasing total work hours, taking a leave of absence, or quitting work. However, there were no significant correlations with adaptation in employment hours (arriving late/leaving early).

**Influence on the Employer**

Employee caregiving responsibilities influence the workplace in differing ways for employers. Key costs to employers include productivity losses due to increased numbers of personal phone calls made or received by employees and more time off due

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to illness. The elevated employer health benefit expenses stemming from a decline in the employee's health that began with caregiving responsibilities increase the cost of eldercare ("Eldercare Benefits," 1988). Fernandez (1990) adds the ultimate loss of a valued employee to the employer's costs.

Companies with a large, middle-aged, female work force and that also experience intense competition for certain job skills often become acutely aware of eldercare implications. Without accommodation to family needs, some companies lose their ability to attract and retain workers (Friedman & Gray, 1989). Employers who see the influence of family caregiving on productivity and quality tend to support eldercare benefits (Neal, Chapman, Ingersoll-Dayton, Emlen, & Boise; 1990). Organizations that have recognized and responded to eldercare's significance for their company include Travelers Insurance Companies, Bank of America, IBM, and Phillip Morris (Scharlach, Lowe, & Schneider, 1991); Southwestern Bell and Remington Products (Kola & Dunkle, 1988); Aetna Life and Casualty, Marriott (Buglass, 1989); and Chase Manhattan (Fernandez, 1990).

The desire for increased productivity and cost savings provides a strong impetus to these and other companies concerned about eldercare. Scharlach, Lowe, and Schneider (1991) estimate that a company without formal eldercare programs loses $2500 per year for each employee with eldercare responsibilities. Merck and Company estimate that for each dollar spent on family care, it gets three returned (Fernandez, 1990).

Costs to the employer may be directly related to the employed caregiver and missed or poor quality work or indirectly associated by the low morale that may ultimately permeate employees who must fill the gap left by another worker's absence

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or poor performance. While an element of common sense exists regarding the relationship of predictable attendance and productivity, clear outcomes of stress and morale on productivity are more obscure (Friedman, 1988). A co-worker may be annoyed at having to work harder to cover a caregiver's absence, even though the absenteeism is explained. Employee peer resentment and unhappiness may result and generate less total productivity. Also, caregiver absences that begin as temporary may end as permanent, thus creating additional employer costs. It is estimated that 100 billion dollars are lost annually when trained and experienced workers are absent from work due to their own or family illness (Bureau of National Affairs, #21, 1989). Replacement of workers, whether for a temporary need or a permanent change, creates some of those costs. Orientation and training expenses profoundly affect an employer's budget.

In spite of costs stemming from employees with eldercare responsibilities, some employers do not see a problem. A survey of 96 New York companies indicated that over 50% of the companies did not see employee caregivers as presenting work-related problems (Warshaw, Barr, Rayman, Schachter, & Lucas, 1986). However, the researchers ultimately concluded those issues may be hidden and, instead, more acceptable problems brought to the workplace.

A similar exploratory study by Kola and Dunkle (1988) found that more than half of the surveyed organizations indicated that caregivers' needs seldom came to the workplace. However, the remaining respondents indicated that many of their employees needed time off for eldercare that was manifested in lateness, absenteeism, and emergency hours and unscheduled time off. The same employment issues also were

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important for the companies in the New York study who did see eldercare as a problem in the workplace (Warshaw, Barr, Rayman, Schlachter, & Lucas, 1986).

Even businesses that recognize eldercare's importance have done little to take action. A survey of 101 companies initiated by *Personnel Journal* indicated that 67% of human resource executives felt that eldercare should be considered, but that only about 10% actively studied the problem (Magnus, 1988). More significant, the vast majority (89%) of the executives said they have no plans to address the issue. Only three of the 101 companies have a benefit that supports eldercare.

**Influence on Society**

Jacobs (1987, p. 18) defines social cost as the "...measure of the total resource commitment made by all members of the society in the undertaking of any activity." Caregiver employment adaptation influences personal resources available, as well as family, co-worker, employer, and societal reactions. Graaff (1990) advises clarification of the scope of society when discussing social cost. For example, in this study, society is the United States, not the world community, although as ecological theory suggests, the effects of the interactions of family caregiving and employment cannot be confined to this country. Diverse repercussions affect multiple levels, from the micro (individual) to the macro (world) and the reverse.

The costs of employed caregivers on society are often hidden. Some burdens of working caregivers, such as the influence of caregiving on health, schedules, and esteem, can affect attendance and productivity. If employment adaptation necessary to provide family care leads to lost wages, a decrease in buying power and tax contribution results.

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Also, a possible increase in public assistance (more caregiver unemployment) and higher health care costs (increased caregiver morbidity) may occur (Horowitz, 1985). Costs stemming from the morbidity of the caregiver may escalate, particularly if the caregiver also suffers from chronic ill health that worsens with the strain of caregiving. Stone and Short (1990) support Horowitz' findings. They regard societal costs as a decrease in the gross national product, foregone income tax revenue, and increased expenditures to support caregivers with decreased incomes, fringe benefits, and future retirement benefits. These costs ultimately result in a higher price of goods and services for the consumer.

Of course, the decreased expense of informal care provided by families versus the price of formal care available in institutions somewhat offsets this cost. A study by Hu, Huang, and Cartwright (1986) indicates average annual nursing home charges to be $22,458, while the yearly homecare cost mean was $11,735. Feldstein (1988) estimates the average annual nursing home expenditure to be $27,000. Either institutional cost figure suggests that it is cheaper to provide care at home. Limited private coverage for nursing home care adds to the cost for society. Government, usually in the form of Medicaid, covers the expense when families become impoverished. When government pays, society pays in the form of higher taxes.

## Conceptual Framework

### Human Ecological Approach

Human ecology theory assumes that phenomena must be examined in the wholeness of interaction and interdependence rather than with simple cause-and-effect

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relationships (Andrews, Bubolz, & Paolucci, 1980). This allows analysis and interventions at several levels, depending on the researcher's area of interest. In this study, the interaction of work and family roles provides the focus. This interaction may be fairly simple, with minimal repercussions, or more complex, with effects that permeate through multiple levels and environments.

Bronfenbrenner (1979) proposed a nested arrangement of concentric environmental structures; the microsystem, the mesosystem, the exosystem, and the macrosystem. This idea clarifies the importance of work and family interactions. While the employed caregiver functions at the micro level within either the home or work environments, the interrelationship between work and family comprises the mesosystem. This interrelationship extends to affect events in the work setting that, in turn, influence the reactions of co-workers. This indirect result, involving co-workers (peers or supervisors) illustrates the exosystem. Finally, the macro or largest system includes society as a whole. Thus, what occurs at the micro level ultimately extends to involve the macrosystem. The reverse of this process also is true. For example, public policy related to the support of either the family caregiver or the frail elderly person changes the care situation and its ramifications.

The environments of a family ecosystem (the natural biological-physical, the human-built, and the social-cultural) as described by Bubolz and Sontag (in press) also provide the context for the varied interactions that families experience. These environments are analytically separate, but interrelated and impact each other throughout family caregiver and employment interaction and adaptation. Examples of the natural biological-physical environment include the climate, atmosphere, soil, trees, or what is

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commonly called "nature," while the human-built environment involves modifications made to the natural setting to enable survival (food or shelter) or to meet other human goals or needs (family involvement, employment). These human alterations might be houses (with adjusted living quarters to meet eldercare needs), factories, businesses, or hospitals (to meet employment needs), or material objects (household goods, belongings, or equipment). The third environmental component, social-cultural, includes the presence of humans and their interactions (families, friends, co-workers), cultural ramifications (societal norms, family values and support), social and economic institutions (regulatory systems and employment policies), and provides the basis for communication, order, and moral rules. Bubolz and Sontag (in press) assert that quality in all environments is necessary to maintain life.

Employed female family caregivers make many decisions to maintain their lives and that of their elderly family member. These decisions, involving employment and eldercare responsibilities plus other personal and family obligations, are made in the context of the family ecosystem environment. According to Bristor (1990), the decision-making process used by humans begins with inputs (resources and information), continues through transactions (information processing), and ends with outputs (decisions, judgments, and actions). Characteristics of the interrelated family ecosystem environments affect those choices or outcomes about employment and family.

Kantor and Lehr's (1975) dimensions of family process also contribute to the understanding of eldercare decisions. They (p. 36) describe dimensions as being "physical and conceptual fields of interactional activity" and refer to access dimensions of time, space, and energy, and target dimensions of affect, power, and meaning. These

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dimensions provide a context for decision-making through which family members' needs for specific goals are accomplished. The access and target dimensions have many interfaces and thus have a multitude of combinations that expand their range and power. These interfaces contribute to both the well-being and the stress of the family.

As with Kantor and Lehr's access and target dimensions, family eldercare includes both quantitative and qualitative components. Examples are the amount and type of eldercare actually provided (quantitative) and the meaning that caring for one's own has for the individual members involved with that care (qualitative). The power that individuals exert in decision-making involving eldercare offers another qualitative example. While the present study cannot address qualitative aspects of eldercare to any great degree, the quantitative or physical aspects of caring offer much opportunity for analyses related to caregiving's influence on employment adaptation.

The influence of eldercare on employment adaptation is likely to vary due to the changing needs of the elderly person and altered family circumstances. Thus, the primary caregiver and the family make many decisions to address those issues. As in other events or developmental changes that occur during the family life cycle, the family system experiences periods of equilibrium and disequilibrium with eldercare. In time, most caregivers and their families adjust personal and work roles, but the eventual symmetry or equilibrium shifts with the care recipient's next period of change. The adaptation process provides needed stabilization for the family and the caregiver with multiple employment and family obligations.

Clearly, the norm of family care in society (an output of the decision-making process) involves many changing decisions, circumstances, and interactions over the life

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course. Bubolz and Sontag (in press) state that "a family carries out physical-biological sustenance, economic maintenance, and psychosocial and nurturance functions for its members." In order to manage family eldercare responsibilities, decisions about choices and exchanges permeate family relationships and interactions and influence the primary caregiver's employment adaptation.

Employment adaptation, stemming from caregiver decisions that attempt to balance work and family obligations, varies with the corporate work site culture. A culture sympathetic to caregiving concerns provides a very different work environment from one where family problems must be "kept at home" and not allowed to interfere with employment responsibilities. However, regardless of the workplace environment, the interactive work and caregiving situations cannot be separated. Ripple effects of those interactions permeate all levels: individual employees and their family members, employers and co-workers, and society.

The employee's adaptation to competing family and work roles may influence not only the quality of care provided to the elderly relative and relationships within the family as a whole, but also work quality, productivity, and the ability to remain employed. Likewise, the involvement of the caregiver and family assistance in meeting eldercare obligations may influence how the caregiver ultimately adapts employment to meet care demands.

As ecological theory suggests, the consequences or outcomes of caregiver decisions involve multiple levels. In addition to individual, family, and employer influences, society ultimately suffers from an extreme employment adaptation, the employee decision to quit work. The repercussions and ramifications, although not

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immediately apparent, may be declines in the gross national product (decreased purchasing power), foregone income tax revenue (decreased income), and increased use of public assistance programs (inadequate income to meet needs). As the number of employed family caregivers increases because of projected demographic changes, these possible outcomes gain significance for society.

Bubolz and Sontag (in press) maintain that the ecoperspective allows examination of multi-level functions and systems in relation to each other and over time. The present study acknowledges the dynamic nature of caregiving and seeks to determine the influence that eldercare responsibility has on employment adaptation from inception of the role through a three-month period. The ecoperspective permits the interactive nature of family processes and relationships to be captured and studied. Also, the ecological framework provides a more comprehensive approach to analyzing human behavior than the social systems model (Bubolz, Eicher, & Sontag, 1979). The social systems model frequently minimizes interrelationships between natural and social systems. This researcher recognizes the strong interaction between work and family.

## Choice and Exchange Theory

The choice and exchange theory is versatile in that its concepts can be applied to a wide variety of situations ranging from one-to-one encounters to group interactions (Nye, 1979; Rook, 1987). In this study, the caregiver and employment adaptation represented individual choices and exchanges, while the caregiver assistance from the family denoted group interaction and involvement related to eldercare. The exchanges may be specific, as when limited to a few individuals, or very diverse, as those that

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involve individuals and society (Nye, 1979). Rook (1987) suggests that the theory provides the potential to analyze not only quantitative, but qualitative aspects of relationships. The present study offers a quantitative approach, but also includes qualitative potential by the examination of open-ended responses about other effects on work that may occur due to eldercare responsibility.

Exchanges with parents and children vary over the life course. From a preponderance of parental "giving" to very young children, the pendulum shifts over time. At the end of the parental life cycle, the primary giving may switch to the adult child as the eldercare role evolves. These "giving" behaviors and activities are usually performed for positive reasons; however, a negative perspective (or least cost) may also influence the interaction. For example, adult children may provide parent care in order to meet societal norms and avoid censure from others.

Eldercare by an employed caregiver involves decisions that influence not only the care situation, but also the workplace. When the employee chooses to arrive late, leave early, or be absent for extended periods, the decision impacts other employees left to do the job. Co-workers who pick up the slack may resent that necessity, even when they are aware of the reason. When employees elect to reduce hours or quit work, they gain more time to provide care, but sacrifice employment benefits, the opportunity for advancement, and the socialization and satisfaction employment can provide.

Employment and other roles (unless carried to an extreme) may enhance caregiver well-being by buffering the stresses stemming from the care situation, linking external resources, and increasing caregiver feelings of self-confidence and worth (Stoller & Pugliesi, 1989a). Quitting work may increase the caregiver's problems. Further, when

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caregivers reduce work hours, take extended leaves, or quit employment in order to provide care, management faces recruitment and training costs for new workers hired to fill the void.

## Summary

During the past six years, studies began to address the competing demands of family eldercare and employment. Researchers, through cross-sectional investigations, have garnered impressive data about the employment adaptation many caregivers make in order to meet their family obligations. While some employers are oblivious to the eldercare impact on their employees and the resulting influence that it may have on the company's bottom line, that trend is changing. Companies that take a proactive approach have assessed their work force and altered policies and procedures to address the changing needs of employees with eldercare responsibilities. While the impact of the eldercare phenomenon is less clear for society than for the workplace, its ramifications may be projected. The use of the human ecological and the choice and exchange theories provides a versatile framework to study eldercare and the workplace and related decisions, interactions, and adaptation over time.

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# CHAPTER III

## Methods

The study explored the influence of acquiring the family eldercare role on the employment adaptation of women. The data utilized were from a longitudinal caregiver study at Michigan State University, "Caregiver Responses to Managing Elderly Patients at Home" (NIA #2 RO1 AGO6584), referred to in this paper as the core study. This chapter includes discussion of the conceptual model, the research design, objectives, questions, hypotheses, and variables for the study. The instrumentation, sampling procedure (core study and this research), data collection techniques, and the methods of data analysis used conclude this section.

Figure 1 displays a preliminary conceptual model for family eldercare and its influence on employment adaptation over a three-month time period. In this model, selected caregiver and care recipient characteristics, family support, and caregiver involvement influence the employment adaptations that female family caregivers make. These employment adaptations, in turn, influence family support and caregiver involvement. While family caregiving and decisions made related to eldercare influence society (and the reverse), that effect is not included in this model.

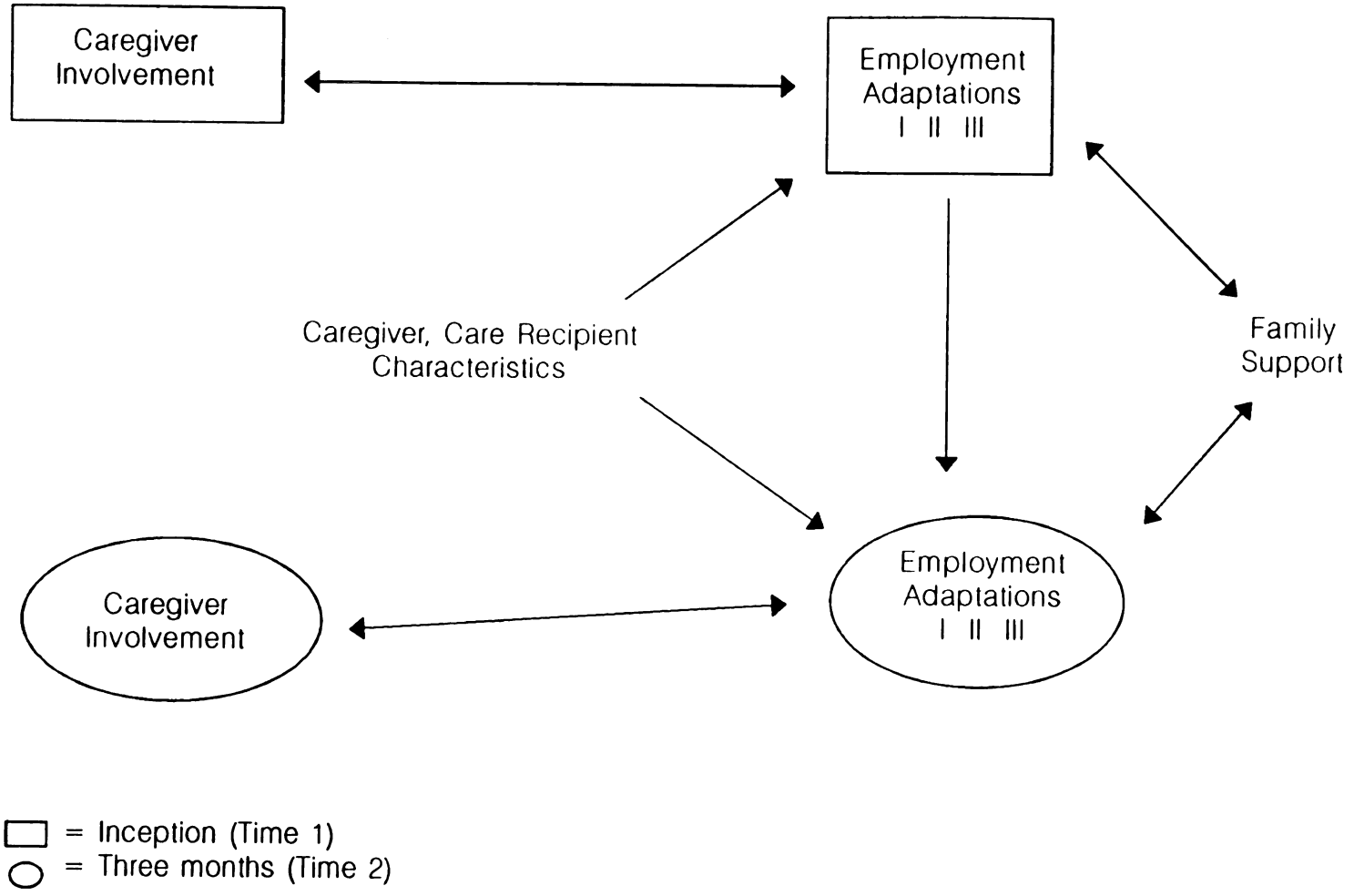


**Figure 1. Preliminary Conceptual Model for Family Eldercare and Employment Adaptations**

The study involved three blocks of independent variables. The first, caregiver and care recipient characteristics, included caregiver age, relationship to the care recipient, marital status, education, occupation, household income, employment status (current full-time or part-time) co-residence status (now and before caregiving), and the care recipient gender and age. The second, family support, encompassed the size of the family network and the amount and frequency of family assistance provided to either the caregiver or the care recipient. Caregiver involvement, the third block, included the total help provided with activities of daily living (ADL), instrumental activities of daily living (IADL), and health care activities (HCA), and also the time demands (in hours) of physical care and supervision of the elderly relative.

Three types of employment adaptation comprised the dependent variables. Type I employment adaptation was defined as maintaining, but altering one's work role. Possible modifications included: (a) arriving late/leaving early, (b) missing work without pay, (c) taking sick/personal days, (d) changing work hours, (e) refusing jobs or promotions, (f) not looking for jobs or better jobs, and (g) other ways that caregiving was affecting work. Type II adaptation was interpreted as taking a leave of absence, and Type III adaptation meant quitting or retiring from employment in order to provide care. Figure 2 displays the independent and dependent variables for the study.

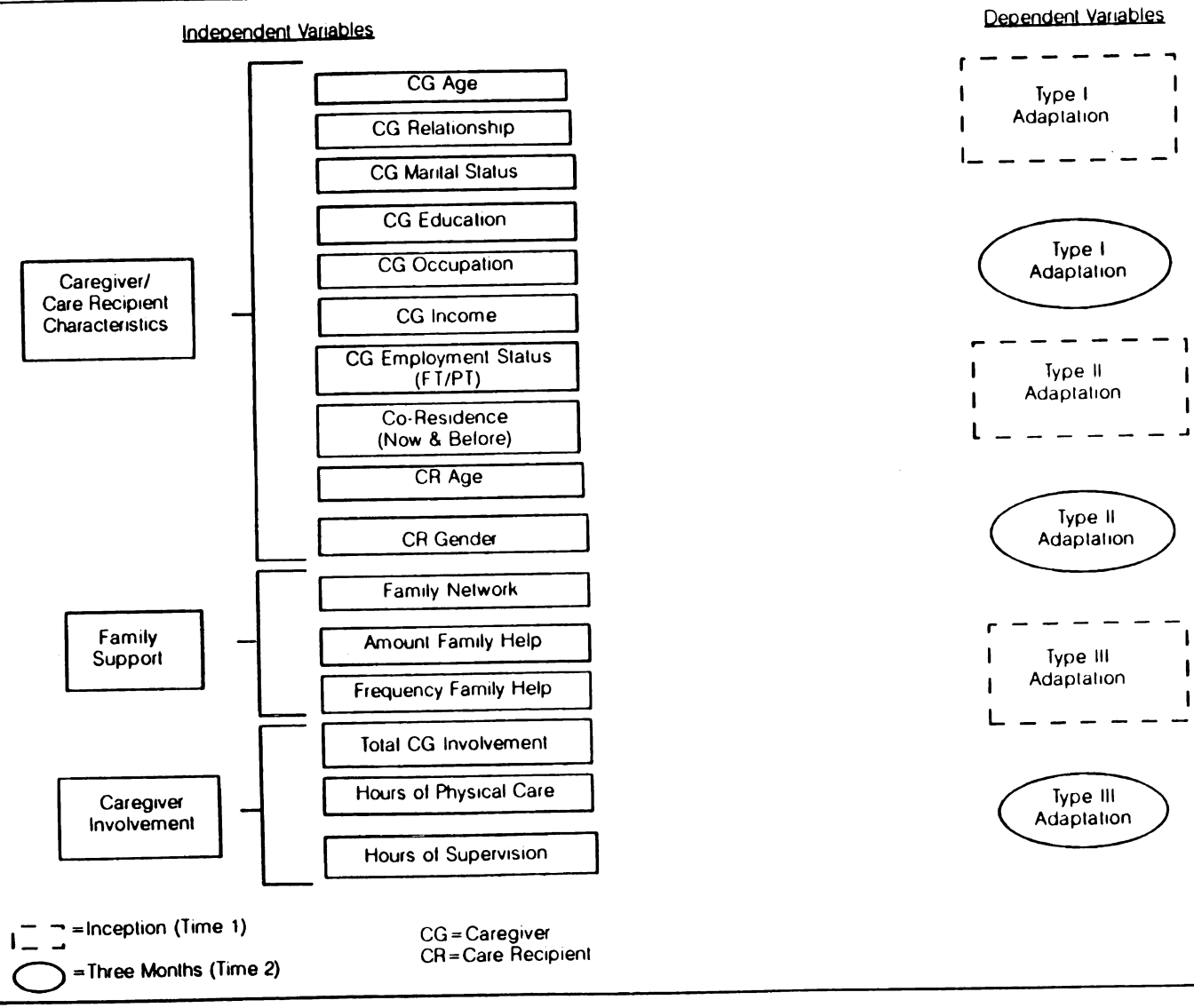


**Figure 2. Independent and Dependent Variables**

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## Research Objectives

The overall purpose of the study was to investigate the influence of acquiring the role of caregiver for a physically disabled elderly relative on the employment adaptation of women. Unless specified otherwise, the following specific objectives encompassed each type of adaptation.

1. To determine the immediate and delayed (after three months) employment adaptation for the female employee.
2. To determine the influence of selected caregiver and care recipient characteristics (caregiver age, relationship to care recipient, marital status, education, occupation, household income, employment status, co-residence status, care recipient age and gender) on caregiver employment adaptation at Time 1 and Time 2.
3. To determine the influence of family support (number in network, amount of help, and frequency of family assistance with eldercare) on caregiver employment adaptation at Time 1 and Time 2.
4. To determine the influence of caregiver involvement (assistance with ADL, IADL, and HCA and the hours of both physical care and supervision) on employment adaptation at Time 1 and Time 2.
5. To assess the probability that the caregiver displays Type II or Type III adaptation at Time 2 given the level of Type 1 adaptation at Time 1.

## Research Design

This research, using a longitudinal design (panel study), examined how selected caregiver and care recipient characteristics, family support, and caregiver involvement

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influenced employment adaptation. Currently, cross-sectional designs predominate in the study of caregiving's influence on employment. This makes it impossible to represent the varied decisions that caregivers make over time in response to changing care recipient needs. Longitudinal studies provide a mechanism to determine critical periods when a caregiver adapts employment in order to provide care. Of course, the reverse, to stop caregiving in order to maintain employment, also may result. The longitudinal approach of the present study enhanced the understanding of the dynamics and interaction of work and family care.

Care recipient, caregiver, and family needs change and result in adaptation by the caregiver in order to meet the new care requirements. Employment responsibilities also may shift, thus creating the environment for additional adaptation by the employed family caregiver. The choice of a longitudinal design considered the ecological concept of adaptation and acknowledged that caregiving is a dynamic, not a static process. The study encompassed two waves of data collection; inception of the eldercare role (Time 1) and at three months (Time 2).

Human ecology theory mandates that humans and their environments be viewed holistically. While it is impossible for any research to examine all possible variables related to a situation, a study can deal with multiple issues. In the present study, these include selected caregiver and care recipient characteristics, family support, caregiver involvement, and possible employment adaptations. The study was non-experimental and conducted in the natural setting. Female employed family caregivers (N=236), living in Michigan, comprised the units studied.

**Research Questions and Hypotheses**

All research questions and hypotheses referred to the employed female who had primary family caregiving responsibility for a physically disabled elderly relative.

1. **Does employment adaptation occur, and if so, does the adaptation type differ between Time 1 (inception) and Time 2 (three months)?**

   a. What Type 1 adaptation (maintain, but alter work) occurs?
      arrive late/leave early
      miss work without pay
      take sick/personal days
      change work hours
      refuse job/promotion
      kept from job hunt/better job
      other work effects
   b. What Type II adaptation (leave of absence) occurs?
   c. What Type III adaptation (quit/retire) occurs?

   H1a: A variety of Type I employment adaptations occur at both Time 1 and Time 2.

   H1b: There are fewer Type I adaptive behaviors at Time 1 than at Time 2.

   H1c: There is less Type II adaptation at Time 1 than at Time 2.

   H1d: There is no difference between Type III adaptation at Time 1 and Type III adaptation at Time 2.

2. **What is the probability that Time 1, Type I employment adaptation (maintain, but alter work) influences Time 2, Type II (leave of absence) and Type III (quit/retire) employment adaptations?**

H2a: The use of Time 1, Type I adaptation influences the use of Time 2, Type II and Type III adaptations.

3. **What is the relationship of selected caregiver and care recipient characteristics to each type of employment adaptation at Time 1 and Time 2?**

a. caregiver age
b. relationship to the care recipient
c. caregiver marital status
d. caregiver education
e. caregiver occupation
f. caregiver household income
g. employment status (current part-time or full-time)
h. co-residence status (now and before)
i. care recipient age
j. care recipient gender

H3a: Caregiver age relates to each type of employment adaptation.

H3b: Employment adaptation differs for spouse and daughter/daughter-in-law caregivers.

H3c: Employment adaptation differs by relationship to care recipient.

H3d: Caregiver education relates to employment adaptation.

H3e: Employment adaptation differs with caregiver occupation.

H3f: Caregiver household income relates to employment adaptation.

H3g: Employment adaptation differs with full-time and part-time employment status.

H3h: Employment adaptation differs if caregiver and care recipient reside together.

H3i: Care recipient age relates to employment adaptation.

H3j: Care recipient gender makes no difference in employment adaptation.

**4. How much variation in each type of employment adaptation at Time 1 and Time 2 do selected significant caregiver and care recipient characteristics explain?**

a. caregiver age
b. relationship to the care recipient
c. caregiver education
d. caregiver household income
e. co-residence status (now)
f. care recipient gender

H4a: Caregiver age explains more variation in employment adaptation at Time 1 and Time 2 than do other caregiver/care recipient characteristics.

H4b: Care recipient age and care recipient gender explain little variation in employment adaptation at Time 1 and Time 2.

**5. Was there a reported change in the amount of help from family members between Time 1 and Time 2?**

H5a: The majority of caregivers will report that the level of family help remained "about the same" at Time 2.

**6. What is the relationship of family support to each type of employment adaptation at Time 1 and Time 2?**

a. number in network
b. amount of help provided
c. frequency of assistance given

H6a: The number in the family network has no relationship to employment adaptation at Time 1 and Time 2.

H6b: The amount of help provided by the family relates to employment adaptation at both Time 1 and Time 2.

H6c: The frequency of family help relates to employment adaptation at both Time 1 and Time 2.

**7. How much variation in each type of employment adaptation at Time 1 and Time 2 does family support explain?**

a. number in network
b. amount of help provided
c. frequency of assistance given

H7a: The amount of help and frequency of assistance provided explains more variation in employment adaptation at both Time 1 and Time 2 than does the number in the network.

**8. Do caregiving responsibilities disrupt normal work and daily activities at both time periods?**

H8a Caregiving responsibilities disrupt normal work and daily activities at both time periods.

**9. Does the level of reported caregiver involvement change from Time 1 to Time 2?**

H9a: The majority of caregivers will report that they provide "about the same" amount of care compared to three months ago.

**10. What is the relationship of caregiver involvement (activities and time) to each type of employment adaptation at Time 1 and Time 2?**

a. total involvement (ADL, IADL, and HCA)
b. hours of physical care
c. hours of supervision

H10a: Total involvement (ADL, IADL, and HCA) relates to employment adaptation.

H10b: Hours of physical care relate to employment adaptation.

H10c: Hours of supervision relate to employment adaptation.

**11. How much variation in each type of employment adaptation at Time 1 and Time 2 is explained by caregiver involvement (activities and time)?**

a. total involvement (ADL, IADL, and HCA)
b. hours of physical care
c. hours of supervision

H11a: Hours of physical care explain more variation in employment adaptation than total involvement or hours of supervision at both Time 1 and Time 2.

12. **Which identified key variables from questions 4, 7, and 11 are the best predictors of each type of employment adaptation at Time 1 and Time 2?** (Type I = caregiver age, relationship to care recipient, caregiver gender, amount of family help, hours of physical care; Type II = caregiver education, co-residence now, amount of family help, hours of physical care; Type III = caregiver household income, family network, frequency of family help, total caregiver involvement, hours of physical care)

H12a: The hours of physical care are the best predictors of each type of employment adaptation at Time 1 and Time 2.

H12b: The amount of family help at both Time 1 and Time 2 is less effective in predicting employment adaptation than are the other variables in the equation.

H12c: Caregiver and care recipient characteristics explain more variation in employment adaptation than does caregiver involvement.

**Research Variables**

This section contains the conceptual and operational definitions of the dependent and independent variables. Unless otherwise stated, the definitions applied to both Time 1 and Time 2. Questions for Time 1 alluded to the previous month, while Time 2 questions referred to the prior three months. The portions of the instrument used for both the study and the operational definitions are in Appendix A. In addition to specific work adaptations noted at both Time 1 and Time 2, caregivers were asked at Time 2 if their employment status had changed in the past three months and if so, how it had

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Dependent Variables

*Type I Employment Adaptation (maintain, but alter work)*

Arrive Late/Leave Early

Conceptual definition: Whether the caregiver worked the entire shift or worked hours as assigned.

Operational definition: The caregiver indicated if caregiving caused her to be late or leave early (yes or no response; 1 = yes, 2 = no).

Miss Work without Pay

Conceptual definition: Whether the caregiver took time off without pay in order to provide care.

Operational definition: The caregiver indicated if caregiving caused her to miss work without pay (yes or no response; 1 = yes, 2 = no).

Take Sick/Personal Days

Conceptual definition: Whether the caregiver used either paid sick time or personal days off in order to provide care.

Operational definition: The caregiver indicated if caregiving caused her to use sick days or take personal days in order to provide care (yes or no response; 1 = yes; 2 = no). At both Time 1 and Time 2, caregivers indicated the specific number of work days

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lost (within the past three months) because of caregiving responsibilities. From these numbers, the mean and standard deviation for each time period was determined.

### Change Work Hours

Conceptual definition: Whether the caregiver changed her work schedule so she could manage her caregiving tasks.

Operational definition: The caregiver indicated whether caregiving caused her to change her work hours (yes or no response; 1 = yes, 2 = no).

### Refuse Job or Promotion

Conceptual definition: Whether or not the caregiver refused a job offer or a promotion so that she could manage her caregiving tasks.

Operational definition: The caregiver indicated whether caregiving caused her to turn down a job or promotion (yes or no response; 1 = yes, 2 = no).

### Kept from Job Hunt/Better Job

Conceptual definition: Whether the caregiver was unable to look for a job or a better job because of caregiving responsibility.

Operational definition: The caregiver indicated whether caregiving kept her from looking for a job or a better job (yes or no response; 1 = yes, 2 = no).

Other Work Effects

Conceptual definition: Whether the caregiver experienced any additional, "other" effects related to work not specifically defined as Type I adaptations.

Operational definition: The caregiver indicated whether caregiving affected her work in ways not mentioned (yes or no response; 1 = yes, 2 = no). If the response was yes, the caregiver described how caregiving affected her work. The results of this item and the preceding work alteration items were summed to create an index of Type I employment adaptation (range from 0-7). The index of Type I employment adaptation was then used to obtain a mean score for the sample. This provided a summary measure of the Type I employment adaptation that caregivers experienced. A high score indicated more caregiver Type I adaptation to employment than did a low score.

The open-ended responses generated with "other work effects" were grouped according to patterns of similarity and provided a qualitative supplement to the quantitative information about employment adaptation. Groupings from Time 1 data included: 2 = no, 3 = emotional stress, 4 = cannot do other things, 5 = cannot concentrate, 6 = schedule, and 7 = other. Response patterns for Time 2 varied slightly and comprised: 2 = no, 3 = more tired, 4 = more stressed, 5 = worry causes lack of concentration, 6 = quality of work suffers, 7 = turned down better job, 8 = loss of benefits, and 9 = other ("1 =" was not used for either Time 1 or Time 2). The percentage of caregivers who responded yes to "other work effects" was subdivided into these descriptive categories.

At both Time 1 and Time 2, caregivers were asked to indicate how disruptive caregiving was to their work and daily activities. The response choices included:

1 = not at all, 2 = a little, and 3 = somewhat, and 4 = a great deal. The percentage of caregivers who responded to each choice was determined.

*Type II Employment Adaptation (leave of absence)*

Conceptual definition: Whether or not the caregiver took extended time off from work to provide care.

Operational definition: The caregiver indicated whether caregiving caused her to take a leave of absence from her job (yes or no response; 1 = yes, 2 = no). The percentage of caregivers who answered yes was obtained from the responses.

*Type III Employment Adaptation (quit/retire)*

Conceptual definition: Whether the caregiver quit or retired from her job so that she could provide care.

Operational definition: The caregiver indicated whether caregiving had caused her to quit or retire from her job (yes or no response; 1 = yes, 2 = no). The percentage of caregivers who answered yes was obtained from the responses.

Independent Variables

*Caregiver Relationship to Care Recipient*

Conceptual definition: How the caregiver was related to the care recipient.

Operational definition: The caregiver indicated her relationship to the recipient. Choices in the original questionnaire included: 1 = spouse, 2 = parent, 3 = daughter, 4 = son, 5 = daughter-in-law, 6 = son-in-law, 7 = sister, 8 = brother,

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9 = sister-in-law, 10 = brother-in-law, 11 = granddaughter, 12 = grandson, 13 = niece, 14 = nephew, 15 = aunt, 16 = uncle, 17 = other relative, 18 = friend/companion, or 19 = other non-relative to the care recipient. These were recoded for the present study so that 1 = spouse, 2 = daughter/daughter-in-law, and 3 = other.

*Caregiver Age*

Conceptual definition: The number of years the caregiver had been alive.

Operational definition: The caregiver indicated the date of her birth.

*Caregiver Marital Status*

Conceptual definition: The caregiver's current marital status.

Operational definition: The caregiver indicated whether she was: 1 = single, 2 = married, 3 = divorced, 4 = widowed, or 5 = separated. These were recoded for the present study so that 1 = married and 2 = unmarried.

*Caregiver Education*

Conceptual definition: The number of years that the caregiver attended school.

Operational definition: The caregiver indicated the level of education attained. Choices in the original questionnaire included: 1 = grade school or less, 2 = some high school, 3 = completed high school, 4 = some college, 5 = completed college, 6 = some graduate school, or 7 = completed graduate school. These were recoded for the present study so that 1 = some high school or less, 2 = high school, 3 = some college,

and 4 = college or more for descriptive purposes. Education was also recoded as a continuous variable (6 = completed grade school or less, 9 = completed some high school, 12 = completed high school, 14 = completed some college/technical school, 16 = completed college, 18 = completed some graduate school, 20 = completed graduate/professional degree) for analytical reasons (correlations and multivariate analyses).

*Caregiver Occupation*

Conceptual definition: The caregiver's type of employment.

Conceptual definition: For the original questionnaire, the caregiver indicated her occupation (an open-ended response). The responses were then coded: 1 = professional, management, administrative; 2 = sales, clerical, technical; 3 = craft or operative; 4 = laborer; 5 = farmer; 6 = homemaker; 7 = other. These were recoded for the present study so that 1 = professional, management, administrative; 2 = sales, clerical, technical; and 3 = other.

*Caregiver Household Income*

Conceptual definition: The household income of the caregiver.

Operational definition: The caregiver indicated the appropriate gross income (before taxes) for her household: 1 = 0-1999; 2 = 2000-3999; 3 = 4000-5999; 4 = 6000-7999; 5 = 8000-9999; 6 = 10000-13,999; 7 = 14,000-17,999; 8= 18,000-21,999; 9 = 22,000-25,999; 10 = 26,000-29,999; 11 = 30,000-34,999; 12 = 35,000-39,999; 13 = 40,000-44,999; 14 = 45,000-49,999; 15 = 50,000-54,999; 16 = 55,000-59,999;

and 17 = 60,000 and over. The present study used the same coding to allow a more realistic report of the mean income than recoding into smaller groupings would allow.

*Employment Status (prior to caregiving)*

Conceptual definition: The amount of paid work the caregiver was doing prior to caregiving responsibility.

Operational definition: The caregiver indicated whether she was employed outside the home prior to caregiving (yes or no response; 1 = yes, 2 = no). If the response was yes, the caregiver next indicated whether the employment was full-time or part-time (1 = full-time, 2 = part-time). Caregivers who responded yes (employed prior to caregiving) comprised the sample (N=236) for the present study.

*Current Employment Status*

Conceptual definition: The current employment status of the caregiver.

Operational definition: The caregiver indicated whether she was currently employed full-time, part-time, self-employed, retired, leave of absence, unemployed, not employed for pay, or quit work to care. Choices were: 1 = full-time, 2 = part-time, 3 = self-employed, 4 = retired, 5 = leave of absence, 6 = unemployed, 7 = not employed for pay, and 8 = quit work to care. The present study used 1 = full-time (includes self-employed), 2 = part-time, 3 = leave of absence, 4 = quit/retire, and 5 = unemployed. The instrument for Time 2 did not include the question about current status. Instead, the caregiver was asked if there had been a change in employment status in the last three months, and if so, how it shifted. Response choices included 1 =

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full-time, 2 = part-time, 3 = quit working, 4 = leave of absence, 5 = retired, 6 = different job/changed jobs, and 7 = work more as a caregiver.

*Co-Residence with Care Recipient*

Conceptual definition: Whether or not the caregiver and the care recipient shared living quarters.

Operational definition: The caregiver indicated whether the care recipient currently lived in the same household with the caregiver (yes or no response; 1 = yes, 2 = no). If the response was yes, the caregiver was asked whether she lived with the care recipient prior to assuming the caregiver role (yes or no response; 1 = yes, 2 = no).

*Care Recipient Age*

Conceptual definition: The number of years that the care recipient had been alive.

Operational definition: The care recipient (or caregiver if the care recipient was unable to respond) indicated the date of the care recipient's birth.

*Care Recipient Gender*

Conceptual definition: Whether the care recipient was male or female.

Operational definition: The care recipient (or caregiver if the care recipient was unable to respond) indicated the care recipient's gender to the interviewer (1 = male, 2 = female).

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*Family Network*

Conceptual definition: The number in the caregiver's family.

Operational definition: The caregiver identified her living adult relatives and how far (in miles) they lived from the caregiver. From that figure, the number of network members who lived 50 miles or less from the caregiver was determined. The mean of the network number living within 50 miles of the caregiver provided the measure of family members available to help with eldercare. The Given studies (Given & Given, 1989) of the core data used the 50 mile criterion as a basis for determining those network members most likely to offer aid. The same concept was used in the present study.

*Family Help (amount)*

Conceptual definition: The amount of help with eldercare that the caregiver received from her family network.

Operational definition: The caregiver indicated the amount of help that each adult relative provided with caregiving (1 = none or very little, 2 = a little, 3 = some, 4 = quite a bit, 5 = a great deal). The mean score for the amount of help given by network members who lived within 50 miles of the caregiver provided the measure of family help with eldercare. At Time 2, the caregiver indicated whether in the past three months, overall help from the family increased (1), stayed the same (2), or decreased (3).

*Family Assistance (frequency)*

Conceptual definition: The caregiver's recognition of the frequency of family help with caregiving responsibilities.

Operational definition: The caregiver indicated how often anyone in the family provided assistance in the following ways:

a. helped with physical care
b. spent time keeping the care recipient company
c. stayed with the care recipient so that the caregiver could do something else for a few hours
d. gave the caregiver emotional support
e. helped with transportation (caregiver or recipient)
f. helped with money or other material goods
g. checked on the caregiver to see if she was alright
h. provided or encouraged diversional activities for the care recipient

Response choices for each item were: 1 = rarely or none of the time, 2 = some of the time, 3 = most of the time, 4 = almost all of the time. The mean of the summed items provided the measure of family assistance given.

*Caregiver Total Involvement*

Conceptual definition: The help with physical (ADL), instrumental (IADL), and health care activities (HCA) of daily living that the caregiver provided for her elderly relative.

Operational definition: The caregiver described her involvement with activities of daily living (ADL), instrumental activities of daily living (IADL), and health care activities (HCA) of daily living. The ADL categories included dressing, eating, bathing, walking inside the house, toileting, and transferring in and out of bed. The possible responses to how frequently the caregiver helped the care recipient were: 0 = never, 1 = once a week or less, 2 = several times a week, 3 = once a day, 4 = several times daily. The sum of the individual item scores in the ADL section represented the ADL

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involvement score. High scores indicated more caregiver involvement with ADL tasks than did low scores.

Caregiver involvement with IADL activities included cooking/preparing meals, housework, shopping, laundry, transportation, and money management. As in the ADL section, the possible responses to how frequently the caregiver helped the care recipient ranged from 0 = never to 4 = several times daily. The sum of the individual item scores in the IADL section represented the IADL score. Here, too, high scores indicated more caregiver involvement with IADL duties than did low scores.

Caregiver involvement with HCA functions (urinary catheter/catheter care, oxygen administration, IV, Hickman, Broviac catheter care/dressing, IV medications/fluids, tube or IV feedings, injections, special exercises/physical therapy, care of ulcers/bedsores, skin care, colostomy care, care of post-operative incision, oral medications, nasogastric tube and care, incontinence of urine, incontinence of stool, tracheostomy/tracheostomy care, respirator/care of respirator, suctioning) was measured by asking the caregiver if the care recipient required any of the activities.

For the indicated activities, the frequency of assistance provided by the caregiver was assessed. Scores for each indicated item were: 0 = never, 1 = once a week or less, 2 = several times a week, 3 = once a day, 4 = several times daily. The sum of the scores for pertinent items in the HCA section provided the health care activity involvement score. As with ADL and IADL scores, the higher the score, the greater the caregiver involvement in those activities. The sum of the scores from ADL, IADL, and HCA sections represented the caregiver's total involvement with those activities. Although the total involvement score was the measure, the sum of each section enabled

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the determination of internal fluctuation with ADL, IADL, and HCA functions at Time 1 and Time 2. At Time 2, the caregiver indicated the amount of care compared to three months ago. Response choices were: 1 = less care, 2 = about the same, and 3 = more care.

*Hours of Physical Care*

Conceptual definition: The time the caregiver spent providing physical care for the care recipient.

Operational definition: The caregiver indicated, in a usual day, how many hours (0-24) were spent providing physical assistance (activities such as eating, dressing, treatments, etc.) for her relative. A mean score for the number of hours per day spent providing care provided the measure.

*Hours of Supervision*

Conceptual definition: The time the caregiver spent supervising the care recipient.

Operational definition: The caregiver indicated, in a usual day (excluding night hours), how many hours were spent supervising (being with the recipient to ensure safety) her relative. Hours could range from 0 to 20 per day. A mean score for the number of hours per day spent supervising care provided the measure.

**Instrumentation**

Telephone interviews and self-report questionnaires provided the data for the core study, "Caregiver Responses to Managing Elderly Patients at Home." The portions of

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the instrument to be used in the present research included the following sections from the telephone interviews: (a) Caregiver Employment, (b) Sociodemographic Information, (c) Family Network, (d) Social Assistance (of the family), and (e) Caregiver Involvement, and (f) The Demands of Care.

The research team of Given, Given, Collins, King, and Stommel developed the instruments (with the exception of the ADL and IADL items taken from OARS) for the core study. Experts and peers evaluated the measures and concluded they had face, content, and construct validity. All tools used in the core study are psychometrically sound research instruments that have been tested on over 600 caregivers during the first caregiver study, "Caregiver's Response to Managing Elderly Patients at Home" (Caregiver I). Examples from the instruments are in Appendix A.

The dependent variables, employment adaptations (Type I, Type II, and Type III), were described at two intervals; one at inception of the caregiver role (Time 1) and the second at three months (Time 2). The measure used was the Caregiver Employment section of the core instrument. This survey assessed how many times in the last month (or three months for Time 2) the employee adapted employment in order to meet caregiving responsibilities. Employment adaptation, with the exception of "other work effects" (Type I), which required an open-ended response, was self-reported as yes or no (1 = yes; 2 = no) and included:

a. Type I employment adaptation (maintain, but alter work)
   arrive late/leave early
   miss work without pay
   change work hours
   take sick/personal days
   refuse job or promotion

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b. Type II employment adaptation (leave of absence)
c. Type III employment adaptation (quit/retire)

At both Time 1 and Time 2, the caregiver indicated how many work days were missed in order to provide care (open-ended response) and also how disruptive caregiving had been on normal activities. Response choices for disruption of activities included:

1 = not at all
2 = a little
3 = somewhat
4 = a great deal

The screening instrument and the Time 1 telephone questionnaire for the core study contributed the caregiver and care recipient sociodemographic information for the present study. The data included:

1. Care recipient gender (1 = male; 2 = female).

2. Caregiver gender (1 = male; 2 = female).

3. Care recipient birth date __month, __day, __year.

4. Caregiver birth date __month, __day, __year.

5. Caregiver marital status (1 = single, never married, 2 = married/remarried, 3 = divorced, 4 = widowed, 5 = separated). This was recoded for the present study (1 = married, 2 = unmarried).

6. Caregiver relationship to care recipient (1 = spouse, 2 = parent, 3/4 = daughter/son, 5/6 = daughter/son-in-law, 7/8 = sister/brother, 9/10 = sister/brother-in-law, 11/12 = granddaughter/son, 13/14 = niece/nephew, 15/16 = aunt/uncle, 17 = other relative, 18 = friend/companion, 19 = other non-relative). This was recoded for the present study (1 = spouse, 2 = daughter/daughter-in-law, 3 = other).

7. Caregiver highest level of education (1 = completed grade school or less, 2 = completed some high school, 3 = completed high school, 4 = completed some college/technical training, 5 = completed college, 6 = completed some graduate/professional school, 7 = completed graduate/professional degree). This

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was recoded for the present study for descriptive purposes (1 = some high school or less, 2 = high school, 3 = some college/technical training, 4 = completed college/technical training or more). The core study values were also recoded to continuous variables for correlations and multivariate analyses performed in the present study (6 = completed grade school or less, 9 = completed some high school, 12 = completed high school, 14 = completed some college/technical school, 16 = completed college, 18 = completed some graduate school, 20 = completed graduate/professional degree.

8. Caregiver occupation (1 = professional, management, administrative; 2 = sales, clerical, technical, 3 = craft or operative, 4 = laborer; 5 = merchant; 6 = homemaker; 7 = other. This was recoded for the present study (1 = professional, management, administrative; 2 = sales, clerical, technical; 3 = other).

9. Live in the same household, now (1 = yes, 2 = no); if the response was yes, the caregiver was asked about co-residence before assuming the caregiver role (1 = yes, 2 = no).

10. Household gross income before taxes (1 = 0-1,999; 2 = 2,000-3,999; 3 = 4,000-5,999; 4 = 6,000-7,999; 5 = 8,000-9,999; 6 = 10,000-13,999; 7 = 14,000-17,999; 8 = 18,000-21,999; 9 = 22,000-25,9999; 10 = 26,000-29,999; 11 = 30,000-34,999; 12 = 35,000-39,999; 13 = 40,000-44,999; 14 = 45,000-49,999; 15 = 50,000-54,999; 16 = 55,000-59,999; 17 = 60,000 and over).

The Family Network instrument assessed information about the caregiver's family. The caregiver listed family members (spouses, children, siblings, and in-laws), their distance (in miles) from the caregiver, and then indicated how much help with eldercare that each network member provided. Response choices were:

1 = none or very little
2 = a little
3 = some
4 = quite a bit
5 = a great deal

At Time 2, the caregiver indicated whether overall help from the family increased, decreased, or stayed "about the same" during the past three months.

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The last instrument used for the study, the Social Assistance scale, appraised the caregiver's perception of the frequency of assistance received from family and friends. The present study used only the portion dealing with the family of the caregiver. Reliability for the Social Assistance scale was alpha .69. Items included:

a. helped with physical care
b. spent time keeping your ____ company
c. stayed with ___ so that you could do something else for a few hours
d. given you emotional support or encouragement
e. helped with transportation; for either you or care recipient
f. helped you with money or other material goods
g. checked on you to be sure that you were all right
h. provided or encouraged diversional activities for (care recipient) such as cards or Scrabble, etc.

Caregiver response possibilities were:

1 = rarely or none of the time
2 = some of the time
3 = most of the time
4 = almost all of the time

The independent variable, caregiver involvement, was measured at inception (Time 1) and at three months (Time 2). The Involvement portion of the core instrument was used to determine the caregiver's responsibility for eldercare. This section contained items that tapped the degree of assistance with physical, instrumental, and health care activities of daily living that the caregiver provided for the care recipient. Physical activities of daily living (ADL) included:

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Instrumental activities of daily living (IADL) included:

cooking
housework
shopping
laundry
transportation
money management

Possible responses for how often the caregiver provided help with both ADL and IADL activities were:

0 = never
1 = once week/less
2 = several times/week
3 = once a day
4 = several times/day

The health care activities (HCA) included:

urinary catheter/catheter care
oxygen administration
IV/Hickman or Broviac catheter care/dressing
IV medications/fluids
tube or IV feedings
injections (pain meds or insulin)
special exercises/physical therapy
care of ulcers/bedsores
skin care (special cleansing lotions)
colostomy/colostomy care
care of post-operative wound/incision
oral medications
nasogastric tube and care
incontinence of urine
incontinence of stool
tracheostomy/tracheostomy care
respirator/care of respirator
suctioning

Possible responses for how often the caregiver provided help with HCA were:

0 = never
1 = once week/less
2 = several times/week

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Reliability for the Involvement scale was alpha 0.86 for caregiver involvement in activities of daily living, 0.82 for instrumental activities of daily living (for physically impaired patients), 0.52 for health care activities (based on 11 HCA).

An additional assessment of caregiver involvement was obtained through The Demands of Care. The hours of both physical care and supervision spent by the caregiver were measured at inception and three months. The caregiver estimated the number of hours per day spent providing physical assistance (activities such as eating, bathing, dressing, treatments) and also calculated the number of hours per day (excluding night hours) consumed supervising the care recipient. Supervision time did not include physical assistance. Response possibilities for physical care ranged from 0 to 24 hours per day; for supervision, from 0 to 20 hours per day. At Time 2, the caregiver indicated whether she was providing more care, less care, or about the same amount of care compared to three months ago.

**Sampling Procedure**

The sample for the core study consisted of 630 family caregivers of elderly relatives. The majority of care recipients had a sudden, dramatic health crisis with a medical diagnosis involving the circulatory system. The recruitment criteria for the eldercare dyad follows. Patients (a) were aged 55 or older, (b) had a recent hospitalization because of some event or disease progression that qualified them for skilled home care, and (c) had increased dependencies (within the past 30 days) in at least one physical

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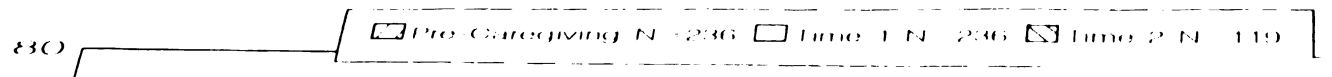
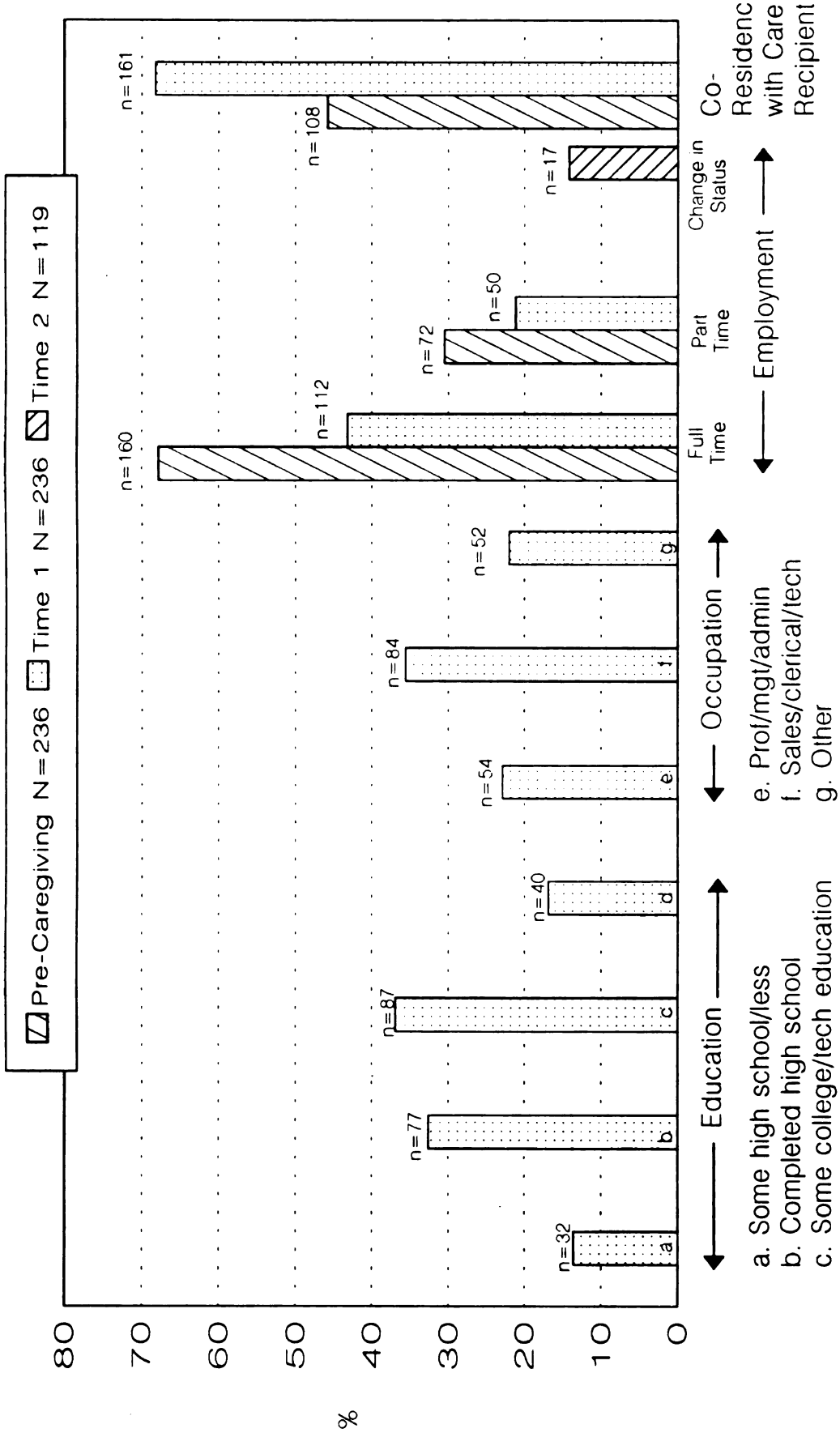
activity of daily living (ADL) or at least two instrumental activities of daily living (IADL) or one equipment and/or health care activities. The caregiver was (a) the family member providing the most care and (b) during the 30 days prior to intake into the study had shifted assistance with one or more IADL activities to one or more ADL activities. The caregiving dyads were recruited by 27 sites (hospitals and visiting nurse agencies) in the state of Michigan, including one in the upper peninsula.

The sample for the present study (N=236) met the following additional caregiver criteria. The caregivers were (a) female and (b) employed prior to assuming the eldercare role. The care recipient criteria remained as described in the preceding paragraph. At Time 2, the number of subjects in the core study dropped to 312. The decreased sample size was due to a variety of reasons. In some cases, the primary caregiver changed or the original caregiver decided not to continue with the study; in other instances, the care recipient either no longer required care, was hospitalized or placed in a nursing home, and still other care recipients died. A sort and match by identification number of Time 1 and Time 2 subjects for the present study indicated the original sample fell to 119 over the three-month period.

Most caregivers were married (75.4%); the mean household income was $35,812 (SD = $17,426). Caregivers included daughters or daughters-in-law (60.6%), wives (29.7%), and other relatives (9.7%). The caregivers averaged about 51 (50.67; range = 19.59 - 75.96; SD = 11.97) years of age, while the mean care recipient age was approximately 73 (73.36; range = 53.11 to 93.30; SD = 9.16) years. Most care recipients were female (57.2%). Figure 3 contains other caregiver characteristics.


Pre-Caregiving N = 236
Time 1 N = 236
Time 2 N = 119




Note: n may not be exact due to missing cases

**Figure 3. Caregiver Characteristics**

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Because the core study, "Caregiver Responses to Managing Elderly Patients at Home", was conducted at Michigan State University, UCRIHS review and approval was obtained by the research team. This researcher also secured the review and endorsement of that committee.

The sample was non random; thus, results cannot be generalized to apply to all employed female caregivers of elderly relatives. Statements about the results can be generalized only for the caregivers in the present study. However, the patient (care recipient) criteria used for the sample (needing increased assistance in physical or instrumental activities of daily living or health care activities) present a defined way to identify the beginning of a new caregiver relationship. Having to help with physical activities of daily living (dressing, eating, bathing, walking inside the house, toileting, transferring) or health care activities (catheters, colostomies, oxygen, IV lines, injections, etc.) is believed to be especially burdensome to caregivers. Involvement with those activities may be more likely to cause conflict with work and family roles than would help with instrumental activities (cooking, housework, shopping, laundry, transportation, money management).

Using this approach to defining a new relationship allowed the study of <u>new</u> versus well-seasoned caregivers. The information thus obtained provides valuable insight into the influence of acquiring the caregiver role on employed female caregivers. Although preliminary, findings identify areas for future investigation. Thus, results may be the impetus to further study of the issue with a larger cross section of caregivers for a longer period of time and, if possible, a random sample.

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**Data Collection Techniques**

As indicated, the present study used data from longitudinal caregiver studies at Michigan State University, funded by the United States Health and Human Services National Institute on Aging. Data used by persons not part of the first investigative team and for purposes different from the original research intent are considered secondary data. In such cases, the principal investigator shares data with an outsider who may have an interest related to the initial research goal. According to Babbie (1989), secondary analysis makes it possible for individuals to pursue particular research interests without a tremendous investment of time and money. The "Caregiver Responses to Managing Elderly Patients at Home" (Caregiver I) was funded through 1986-1989 with $389,552 and its extension, "Caregiver Responses to Managing Elderly Patients at home (Caregiver II) received continued funding of $996,669 through 1992.

The data from the core study provided a rich store of information, much of which has not been analyzed (including the present study's dependent variable, employment adaptation). Thus, the present study analyses heightened the importance of the research and the value of the monies already invested.

Much data for the core study were obtained through telephone interviews by trained interviewers at the study's inception (recruitment for the study began in September 1989) and then at three-month intervals for 18 months. Data for the present study (from telephone interviews) were from inception (Time 1) and three months (Time 2). Telephone interviews were used because previous research by the Michigan State University caregiver research team suggested that the quality of the data did not suffer, the caregivers were receptive to the approach, and the method was cost effective.

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Caregivers completed self-report questionnaires after each telephone interview to supplement the information obtained by the interviewer. The present study did not use information from the self-report questionnaires.

**Analysis of Data**

The data file for the core study was constructed by including variables from the screening and telephone interviews and the self-administered questionnaires. Only data from variables in the screening and telephone interviews (for Time 1 and Time 2) were used in the present study analyses. The actual number of cases for both time periods varied on some items due to respondent omissions. Also, the number of total cases for the present study dropped from Time 1 (N=236) to Time 2 (N=119). The variables utilized include a mix of nominal, ordinal, and ratio measures. In some cases, the survey instrument uses Likert-type response scales. While these constitute an ordinal measure (the differences between responses may not be equal), for statistical purposes they were treated as interval data. This represents a typical approach. According to Grosof and Sardy (1985), most statistical analyses consider such data as interval if there are more than ten items with five or more choices for each.

The approach to data analyses, using the SPSS system, follows. First, the data for Time 1 and Time 2 were inspected for patterns or irregularities (gaps or outliers) and normal distribution. Frequency tables, descriptive statistics such as means, standard deviations, and relative and cumulative frequencies were used to inspect the data. Inspection of the frequency tables revealed how scores clustered for some variables.

This process enabled the recategorization of certain variables (caregiver marital status, relationship to the care recipient, education, employment status, occupation) for the present study. Since the sample size for the present study was smaller than the core study, the value results for those variables sometimes included very small percentages. Combining two or more values with small percentages improved the usefulness of results for the present study.

For example, frequencies for family relationship, using core study categories, generated percentages that were relatively high for spouse (29.7) and daughter (53.4) affiliations. However, other family relationship divisions had values with much smaller percentages (.4, 1.7, and 3.4). A larger percentage of caregivers (7.2) were daughters-in-law, but that was still small in comparison with spouse and daughter percentages. Thus, caregivers who were daughters-in-law were grouped with daughter and the other low-percentage relationship categories were combined to form a new grouping, other. The resulting three classifications, spouses, daughter/daughter-in-law, and other, showed more equivalent representation in the present study sample.

Skewness checks for less than + 2 or - 2 and kurtosis inspection for Type I (maintain but alter work) adaptation, family support, and total caregiver involvement showed normality of distribution for the variables. Descriptive statistics profiled each type of employment adaptation (including Type I components), caregiver and care recipient characteristics, family support, and caregiver involvement at Time 1 and Time 2.

Next, the mix of items that produced the summary score for total caregiver involvement (ADL, IADL, and HCA) at Time 1 and Time 2 was examined. Even

though the summary score changed little from Time 1 to Time 2, the factors comprising each score were different. This inspection of the item mix revealed internal shifts impossible to note by review of a total score. However, in spite of internal shifts, total caregiver involvement was used as the measure for the present study. This researcher recognized that caregivers provided a mixture of the components (ADL, IADL, HCA) and that their sum (total involvement) would generate a more complete measure than independent analyses alone.

With the exception of analysis methods that linked Time 1 with Time 2 (paired t-tests, McNemar tests, and logistic regression), the same techniques (correlations, oneway ANOVA, contingency tables, independent t-tests, multiple regression, and discriminant analysis) were used to study both time periods. In the study, Type I employment adaptation (an index of maintain, but alter work adaptations) was treated as a continuous variable, while Type II (leave of absence) and Type III (quit/retire) adaptations were considered categorical variables. Significant findings for each question required a $p < .05$ unless the question dictated a descriptive response. Specific data analysis procedures for each research question follow.

**Question 1: Does employment adaptation occur, and if so, does the adaptation type differ between Time 1 (inception) and Time 2 (three months)?**

Data for Type I (maintain, but alter work), Type II (leave of absence), and Type III (quit/retire) employment adaptation were summarized for each time period, using descriptive statistics (means, standard deviations, relative, and cumulative frequencies)

appropriate for the variable under consideration. The mean, standard deviation, and range of work days missed (past three months) at Time 1 and Time 2 were calculated.

To assess Time 1 and Time 2 changes in Type II and Type III adaptations (categorical variables), the differences in the frequencies of each were noted. Willett (1988) claims that difference scores have been incorrectly perceived as unreliable and invalid and that they are, in fact, a reasonable measure of change. Because Type I adaptation is a continuous variable, the mean differences between Time 1 and Time 2 could be decided.

Next, to check the significance of the differences between the time periods, additional analyses followed, using Time 2, Type I, II, or III employment adaptation as the dependent variable and Time 1, Type I, II, or III as the independent variable. A paired t-test was used to determine the significance of differences between Time 1 and Time 2, Type I adaptation; McNemar tests were utilized to examine the significance of differences between Time 1 and 2, Type II and Type III employment adaptations.

The paired t-test was used to assess differences between Type I adaptation at Time 1 and Time 2, because the Type I sample means came from the same research subjects, but were obtained at two time periods. Craft (1990) notes that when some factors that influence scores in one group also sway scores in the other group, the significance of the difference between the means can be tested with a matched group t-test. The t-test indicates whether scores have changed as a group from Time 1 to Time 2. However, Craft (1990) warns that comparing only means may produce an erroneous conclusion about score change, especially if the difference between the means is insignificant.

The McNemar test for two correlated dichotomous variables (Norusis, 1990b) was used to ascertain whether the changes in proportions were the same for pairs of dichotomous variables (Time 1 and Time 2, Type II and Type III). According to Norusis (1990b), the pairs of variables being tested must have the same two values; in the present study, 1 = yes and 2 = no for Time 1 and Time 2, Type II (leave of absence) and Type III (quit/retire) employment adaptations.

**Question 2: What is the probability that Time 1, Type I employment adaptation (maintain, but alter work) influences Time 2, Type II (leave of absence), and Type III (quit/retire) employment adaptations?**

Logistic regression, a technique used with dichotomous variables that allows the direct estimate of the probability of an event occurring (Norusis, 1990c), was used. Hosmer and Lemeshow (1989) state that having a dependent variable that is binary (dichotomous) differentiates a logistic regression model from the linear regression model. The guiding principle in logistic regression is to compare observed values of the response variable to predicted values obtained from models with and without the variable in question (Hosmer & Lemeshow, 1989).

In the present study, the coefficient for Time 1, Type I adaptation (alter, but maintain work) forecasted the probability of the caregiver displaying Type II (leave of absence) or Type III (quit/retire) employment adaptations at Time 2, given the level of Type I adaptation at Time 1. The variables for Type II and Type III adaptations were recoded to dummy variables (1 = yes, 0 = no) for the logistic analyses.

The regression equation is:

$$Y = \frac{1}{1 + e - (B_0 + B_1 X)}$$

where $Y$ = the probability of Type II or Type III adaptation at Time 2
$B_0$ & $B_1$ = coefficients estimated from the data
$X$ = the independent variable, Time 1, Type I adaptation
$e$ = base of natural logarithms, approximately 2.718

Norusis (1990c) notes that in logistic regression, the parameters of the model are established using the maximum-likelihood method (coefficients that make observed results most likely are chosen). Hosmer and Lemeshow (1989) claim that in a regression analysis when the outcome is dichotomous, the following apply: 1) The conditional mean of the regression equation must be formulated to be bounded between zero and one, 2) The binomial, not the normal, distribution describes the distribution of the errors and will be the statistical distribution upon which the analysis is based, and 3) The principles that guide an analysis using linear regression also guide logistic regression.

**Question 3: What is the relationship of selected caregiver and care recipient characteristics to each type of employment adaptation at Time 1 and Time 2?**

Pearson correlations, oneway analysis of variance (ANOVA), and contingency tables were used to demonstrate the association between selected caregiver and care recipient characteristics and each employment adaptation type. In this question, employment adaptation (each type) was the dependent variable, while selected caregiver and care recipient characteristics comprised the independent variable. Some caregiver and care recipient characteristics used to answer Question 3 were categorical (caregiver

marital status, relationship to the care recipient, occupation, current employment status, co-residence with the care recipient now and before, care recipient gender), while others were continuous (caregiver age, household income, education, and care recipient age).

Correlations require continuous dependent and independent variables. They were used to show the relationship of Type I (maintain, but alter work) employment adaptation to caregiver and care recipient characteristic continuous variables. Correlations provide an index of the degree of relationship between two interval-scaled variables. The Pearson r is the measure of the strength and direction of the linear relationship between two variables (Craft, 1990). The Pearson r varies in direction and strength from -1.00, a strong negative relationship to +1.00, a strong positive relationship. A zero (0) value indicates there is no relationship between the variables. Craft (1990) states that assumptions for correlations include: 1) interval level of measurement, 2) linear relationship, and 3) homoscedasticity (the variances in Y at each X should be similar).

Oneway ANOVA was used to examine the variation in the sample and to test the significance of mean group differences for Type I employment adaptation and the categorical variables. Oneway ANOVA utilizes a continuous dependent variable and categorical independent variables. Oneway ANOVA helps the researcher determine whether the differences between two or more means are greater than would be expected by sampling error alone. For the categorical variables with more than two groupings (family relationship, caregiver occupation), Tukey's HSD (honestly significant differences) test also was done. This multiple range test provided pairwise comparisons to determine how the groups differed.

ANOVA assumptions include: 1) interval measure dependent variable, 2) probability sampling, 3) normality of the dependent variable in the populations studied, and 4) homogeneity of variance (Craft, 1990). Craft claims that assumptions may be violated somewhat since ANOVA is such a robust and powerful statistical procedure.

The ANOVA formula is:

$$Y = u + a + e$$

where Y = variable being tested
u = the grand mean
a = the effect of the time period
e = residual error

Contingency tables (the cross-tabulations of frequencies for the combination of categories of two variables, Glass & Hopkins, 1984) were used to demonstrate the relationship between Type II (leave of absence) and Type III (quit/retire) employment adaptations and the categorical caregiver and care recipient characteristics. In contingency tables, the values of the dependent variable are contingent upon the value of the independent variables (Babbie, 1989).

The contingency coefficient (C) examines the association between two sets of variables when only nominal information about one or both sets is available (Touliatos & Comptom, 1988). In this study, some variables used to answer Question 3 were nominal. Chi-square was used for the analysis of the contingency tables. The higher the chi-square value, the less likely it is that the value is due to sampling error alone. Grosof and Sardy (1985) note that chi-square can be used with all levels of data and requires only minimal assumptions. These are: 1) the sample is a simple random sample,

2) the samples (if more than one) are independent, and 3) for each characteristic of interest, each subject can be assigned to one class or category that is mutually exclusive.

Finally, in order to study the relationship between Type II and Type III employment adaptations with the continuous dependent variables, Type II and Type III were recoded to dummy variables (1 = yes, 0 = no) and correlations were done.

**Question 4: How much variation in each type of employment adaptation at Time 1 and Time 2 do selected significant caregiver and care recipient characteristics explain?**

Before multivariate analyses (multiple regression or discriminant analyses) were used, bivariate associations among the variables and each adaptation type for Time 1 and Time 2 were examined. This process allowed the elimination from multivariate analyses, potential explanatory factors that did not have significant associations with the adaptation types.

Norusis (1990b) claims that one regression procedure encompassing all variables is an inappropriate strategy to use. A long list of variables makes interpretation difficult, because each variable in the equation partials out the other variables, producing a smaller co-efficient for each and less effect in the regression equation. Norusis (1990b) maintains that the observed increase in $R^2$ from the addition of more independent variables does not necessarily produce a better model. Conversely, using irrelevant variables increases the standard error of all estimates without improving prediction. This concept also applies to discriminant analysis.

Both multiple regression and discriminant analysis offer a fuller explanation of the dependent variable (more than one independent variable enters the equation) than

univariate analysis, since few phenomena have only one explanation. This approach is consistent with the ecological framework of the study.

Employment status, although a caregiver characteristic, was not used in the analyses for Type I, Type II, or Type III adaptations. This was done in order that caregiver and care recipient characteristics demonstrating significant relationships with the adaptation types could be assessed for their unique influence on employment adaptation. Including employment status could diminish the impact of other caregiver and care recipient characteristic variables on employment adaptation. Lewis-Beck (1989) claims that multiple regression describes the precise effect of a particular independent variable, because distorting influences from other independent variables are removed. However, Craft (1990) cautions that the relative importance of any given variable depends on which variables are included in the analysis.

Stepwise multiple regression provided data to determine the influence of selected caregiver and care recipient characteristics (caregiver age, education, household income, relationship to care recipient, care recipient gender) for Time 1, Type I (maintain, but alter work) adaptation, while two-group discriminant analysis (Wilks's method) was used to determine whether selected caregiver and care recipient characteristics (caregiver education, co-residence now) could differentiate those caregivers who used Time 1, Type II (leave of absence) adaptation from those who did not. Time 2 data did not suggest the need for additional analyses with those variables and Type I and Type II adaptations. An independent t-test provided data to assess the significance of caregiver household income with Time 1, Type III (quit/retire) adaptation and that of caregiver education with Time 2, Type III adaptation.

Certain of the caregiver and care recipient characteristics (caregiver relationship to care recipient, co-residence now, care recipient gender) were recoded to dummy variables, using the rule "When a noninterval variable has G categories, use G - 1 dummy variables to represent it" (Lewis-Beck, p. 68, 1989). Next, a stepwise regression approach was used so that variables offering a contribution at the $p < .05$ level to the explanation of Type I adaptation could be determined. In stepwise regression, the independent variable with the largest probability of F is removed if the value is $p > .10$; the equation is recomputed omitting the removed variable, and the process is repeated until no variables can be removed. Next, the independent variable not in the equation with the smallest probability of F is entered if this value is smaller than .05. All variables in the equation are again examined for removal. The process continues until no variables in the equation need removal and no variables not in the equation meet eligibility for entry requirements (Norusis, 1990b). With each variable entered into the equation, all variables are partialed out so the effect of the latest can be known (Glass & Hopkins, 1984). In the final step, the variables not meeting entry requirements are listed with the beta for each noted if the variable was entered at that point in the regression.

The regression equation is:

$$Y = a + bX_1 + bX_2 + bX_3 + \ldots bX_6 + e$$

where Y = dependent variable, employment adaptation
a = the intercept between employment adaptation and the caregiver and care recipient variables
b = the increase or decrease in Y for a one-unit change in X
$X_1$ = caregiver age
$X_2$ = relationship to the care recipient
$X_3$ = caregiver education
$X_4$ = caregiver household income
$X_5$ = co-residence status now
$X_6$ = care recipient gender
e = residual error

Lewis-Beck (1989) offers the following regression assumptions: 1) no specification error (the relationship is linear, no relevant independent variables have been excluded, no irrelevant independent variables have been included), 2) no measurement error, 3) assumptions met that concern the error term (zero mean, homoscedasticity, no autocorrelation, the independent variable is uncorrelated with the error term, normality of distribution), and 4) the absence of perfect multicollinearity (none of the independent variables is perfectly correlated with either another or a linear combination of others).

For Type II employment adaptation, two-group discriminant functional analysis (Wilks's method) was used. This procedure, closely related to multiple regression, is used to identify relationships when the dependent variable is dichotomous (Norusis, 1990c). Norusis (1990c) notes the two sets of coefficients (discriminant and regression) are always proportional with two-group discriminant analysis. A desired outcome of discriminant analysis, as in regression, is the identification of the independent variables most important for group separation (good "predictor" variables) and which are extraneous. Discriminant analysis, not multiple regression, was appropriate for analyzing

Type II (leave of absence) adaptation, because only a dichotomous response (yes or no) was available.

Discriminant analysis generates standardized and unstandardized discriminant function coefficients. The unstandardized units are the "multipliers of the variables when they are expressed in the original units" (Norusis, 1990c, p. B-14). Standardizing the units to a mean of 0 and a standard deviation of 1 (as with multiple regression) produces the standardized discriminant function characteristic (Norusis, 1990c).

The interpretation of the coefficients is similar to multiple regression. The magnitude of the unstandardized coefficients do not provide a good index of their relative importance to the equation if the variables differ in their measuring units (Norusis, 1990c). However, as with the beta coefficients of multiple regression, the standardized canonical discriminant function coefficients show the relative importance (but not the actual influence) of the predictor variables (Craft, 1990). According to Klecka (1980), the larger the magnitude of the standardized canonical discriminant function coefficient (regardless of the sign), the greater the variable contribution to the equation. However, the relative importance of any given variable depends on the variables included in the equation.

Also, Klecka (1980) cautions that if two variables are highly correlated, they share their contribution to the score (even if that joint contribution to the score is very important), resulting in smaller standardized coefficients than if only one of the variables is used. He warns that the coefficients of two variables might be large, but with opposite signs, thus partially canceling the contribution of one variable by the reverse contribution of the other variable.

Grosof and Sardy (1985) offer the following assumptions for discriminant analysis: 1) at least two groups, 2) at least two cases per group, 3) any number of discriminating variables, but must be less than the number of cases minus two, 4) continuous interval or ratio discriminating variables (some authors relax this assumption), 5) independent discriminating variables; no one is a linear combination of the others, nor are any pair or subset highly intercorrelated, 6) each group is drawn from a population whose distribution on the discriminating variables is multivariate normal, and 7) the covariance matrices (intercorrelations) for each group must be approximately equal. Grosof and Sardy (1985) claim that assumptions six and seven are fairly robust, but warn that if there are many borderline cases, the accuracy of classification predictions can be impaired.

The linear discriminant equation is:

$$D = B + BX_1 + BX_2$$

where D = the dependent variable, Type II employment adaptation
B = coefficients, estimated from the data
X = values of the independent variables
$X_1$ = caregiver education
$X_2$ = co-residence status

A stepwise approach (Wilks's method), in which variables are entered based on the smallest lambda for that step, was used. The stepwise approach produces an "optimal set of discriminating variables" (Klecka, p. 53, 1980). At each step (twice the number of independent variables), the variable that results in the smallest Wilks's lambda is picked for entry (Norusis, 1990c). If a discriminatory variable contributes significantly to the explanation, it is included in the discriminant function; otherwise, it is not (Grosof & Sardy, 1985). Wilks's lambda assesses discriminating power and considers both

differences between groups and the homogeneity within groups. Grosof and Sardy (1985) claim the Wilks's statistic is preferred, since it can be converted into chi-square distributions, its values can be tested for significance, and it can be easily interpreted.

An independent t-test (two-tailed) was used to check the significance of mean differences in caregiver household income with Time 1, Type III adaptation. According to Norusis (1990b), a t-test allows determination of whether two population means are equal. Norusis (1990b) maintains that the observed significance level from the t-test is the probability that differences at least as large as the observed difference would have occurred if the means were really equal. In the present study, the equality of means for the household income of those caregivers who chose to quit or retire at Time 1 and those who did not was the item of interest.

An independent t-test (two-tailed) also was used to check the significance of mean differences in caregiver education with Time 2, Type III adaptation. In the present study, the equality of means for the educational level attained for caregivers who chose to quit or retire at Time 2 and those who did not was the item of interest.

**Question 5: Was there a reported change in the amount of help from family members between Time 1 and Time 2?**

Time 2 data from the answers for that query were summarized. Then, frequencies for each possible response category were determined in order to answer this research question.

**Question 6: What is the relationship of family support to each type of employment adaptation at Time 1 and Time 2?**

Pearson correlations were used to display the association of family support (number in network, amount of help provided, and frequency of assistance given) to employment adaptation at Time 1 and Time 2. As noted, correlations require continuous dependent and independent variables; thus, they were appropriate to show the relationship of Type I (maintain, but alter work) employment adaptation to family support variables. As in Question 3, Type II (leave of absence) and Type III (quit/retire) employment adaptations were recoded to dummy variables before correlations with the independent variables were determined. The interpretation and assumptions of correlations remain as stated.

**Question 7: How much variation in each type of employment adaptation at Time 1 and Time 2 does family support explain?**

Unlike Question 4, significant bivariate relationships with employment adaptation did not determine the independent variables used for subsequent analyses to answer this research question. All three variables were used in the regression and discriminant equations because of the importance of family in the conceptual model for this study. As in Question 4, stepwise multiple regression analysis showed the amount of variance in the dependent variable, Type I (maintain, but alter work) employment adaptation, explained by the independent variable, family support (number in network, amount of help provided, and frequency of assistance given) at Time 1 and Time 2. The regression assumptions and interpretation remain as stated with Question 4. The regression equation is:

$$Y = a + bX_1 + bX_2 + bX_3 + e$$

where $Y$ = Type I employment adaptation
$a$ = the intercept between employment adaptation and the family support variables
$b$ = the increase or decrease in Y for a one unit change in X
$X_1$ = number in network
$X_2$ = amount of help provided
$X_3$ = frequency of assistance given
$e$ = residual error

Two-group discriminant functional analysis (Wilks's method) was used to determine whether family support could differentiate those caregivers who used Type II (leave of absence) and Type III (quit/retire) employment adaptations from those who did not. The formerly noted assumptions and interpretation for discriminant analysis (Question 4) prevail.

The linear discriminant equation is:

$$D = B + BX_1 + BX_2 + BX_3$$

where $D$ = the dependent variable, Type II employment adaptation
$B$ = coefficients, estimated from the data
$X$ = values of the independent variables
$X_1$ = number in network
$X_2$ = amount of help provided
$X_3$ = frequency of assistance given

Time 2 data did not suggest the need for additional analyses with family characteristic variables and Type I, Type II, or Type III adaptations.

**Question 8: Do caregiving responsibilities disrupt normal work and daily activities at both time periods?**

Data from Time 1 and Time 2 responses to this query were summarized. Then, frequencies for each possible category were calculated in order to answer this research question.

**Question 9: Does the level of reported caregiver involvement change from Time 1 to Time 2?**

Frequencies for reported changes in caregiver involvement at Time 2 were determined in order to answer this research question.

**Question 10: What is the relationship of caregiver involvement (activities and time) to each type of employment adaptation at Time 1 and Time 2?**

Pearson correlations were used to show the association of caregiver involvement (total caregiver involvement, hours of physical care, hours of supervision) to Type I (maintain, but alter work) employment adaptation at Time 1 and Time 2. As noted, correlations require continuous dependent and independent variables; thus, they were appropriate to show the relationship of Type I employment adaptation to caregiver involvement variables. As in Questions 3 and 6, Type II and Type III employment adaptations were recoded to dummy variables before correlating with the caregiver involvement variables. The interpretation and assumptions of correlations remain as stated.

**Question 11: How much variation in each type of employment adaptation at Time 1 and Time 2 is explained by caregiver involvement (activities and time)?**

As in Question 4, bivariate associations among the variables and each adaptation type were examined to eliminate from multivariate analyses potential explanatory factors that did not have significant associations. Next, stepwise multiple regression analysis was used to determine the amount of variation in the dependent variable, Type I (maintain, but alter work) employment adaptation, explained by the independent variable, caregiver involvement (total caregiver involvement, hours of physical care).

Discriminant functional analyses provided data to assess the contribution of the independent variable caregiver involvement (total caregiver involvement, hours of physical care, and hours of supervision) to Type II and Type III adaptations. The assumptions and interpretation for both regression and discriminant analyses remain as stated.

The regression equation for Time 1, Type I is:

$$Y = a + bX_1 + bX_2 + e$$

where Y = employment adaptation
a = the intercept between employment adaptation and the caregiver involvement variables
b = the increase or decrease in Y for a one-unit change in X
$X_1$ = caregiver total involvement (ADL, IADL, and HCA)
$X_2$ = hours of physical care
e = residual error

The linear discriminant equation for both Type II and Type III adaptation is:

$$D = B + BX_1 + BX_2 + BX_3$$

where D = the dependent variable, Type II (or Type III) employment adaptation
B = coefficients, estimated from the data
X = values of the independent variables
$X_1$ = caregiver total involvement (ADL, IADL, and HCA)
$X_2$ = hours of physical care
$X_3$ = hours of supervision

Time 2 data did not suggest the need for additional analyses with caregiver involvement and Type I or Type II adaptations. An independent t-test (two-tailed) provided data to assess the significance of mean differences in hours of supervision with Time 2, Type III (quit/retire) adaptation. In the present study, the equality of means for the hours of supervision spent by caregivers who chose to quit or retire at Time 2 and those who did not was the item of interest.

**Question 12: Which identified key variables from questions 4, 7, and 11 are the best predictors of each type of employment adaptation at Time 1 and Time 2?**

Type I = caregiver age, relationship to care recipient, caregiver gender, amount of family help, hours of physical care
Type II = caregiver education, co-residence now, amount of family help, hours of physical care
Type III = caregiver household income, family network, frequency of family help, total caregiver involvement, hours of physical care or caregiver education and hours of supervision)

As in Questions 4, 7, and 11, multiple regression and discriminant analysis provided data to answer this research question and its hypotheses. The variables selected for additional study using stepwise regression to analyze Time 1, Type I (maintain, but alter work) employment adaptation were those significant from the three preceding Time 1 regressions (caregiver age, caregiver relationship to the care recipient, care recipient

gender, amount of family help, and hours of physical care). To determine whether an alternate regression approach would generate different outcomes for this question, backward multiple regression also was used. With backward regression, all variables initially enter the equation and then are systematically removed based on pre-established criteria (Norusis, 1990b).

The significant variables (caregiver education, co-residence now, amount of family help, hours of physical care) from the previous Time 1 discriminant analyses were used for further two-group discriminant analysis of Time 1, Type II (leave of absence) adaptation. Similarly, significant variables from the preceding Time 1 discriminant equations (family network, frequency of family help, total caregiver involvement, hours of physical care) or t-test analysis (caregiver household income) were used for more study of Time 1, Type III (quit/retire) adaptation.

A review of Time 2 data did not suggest the need for additional analyses of Type I or Type II adaptations with any of the variables. However, significant variables from Time 2, Type III independent t-test analyses (caregiver education, hours of supervision) were used for additional investigation of Type III adaptation at Time 2.

The regression equation for Time 1, Type I adaptation is:

$$Y = a + bX_1 + bX_2 + \ldots bX_5 + e$$

where $Y$ = employment adaptation
$a$ = the intercept between Y and the independent variables
$b$ = the increase or decrease in Y for a one-unit change in X
$X_1$ = caregiver age
$X_2$ = caregiver relationship to care recipient
$X_3$ = care recipient gender
$X_4$ = amount of family help
$X_5$ = hours of physical care
$e$ = residual error

The linear discriminant equation for Time 1, Type II adaptation is:

$$D = B + BX_1 + BX_2 + BX_3 + BX_4$$

where D = the dependent variable, Type II employment adaptation
B = coefficients, estimated from the data
X = values of the independent variables
$X_1$ = caregiver education
$X_2$ = co-residence now
$X_3$ = amount of family help
$X_4$ = hours of physical care

The linear discriminant equation for Time 1, Type III adaptation is:

$$D = B + BX_1 + BX_2 + \ldots BX_5$$

where D = the dependent variable, Type III employment adaptation
B = coefficients, estimated from the data
X = values of the independent variables
$X_1$ = caregiver household income
$X_2$ = family network
$X_3$ = frequency of family help
$X_4$ = total caregiver involvement
$X_5$ = hours of physical care

The linear discriminant equation for Time 2, Type III adaptation is:

$$D = B + BX_1 + BX_2$$

where D = the dependent variable, Type III employment adaptation
B = coefficients, estimated from the data
X = values of the independent variables
$X_1$ = caregiver education
$X_2$ = hours of supervision

# CHAPTER IV

## Results

Study findings are presented in twelve sections that correspond to the research questions. Supported hypotheses required a $p = < .05$ level of significance. The first question asked whether employment adaptation occurred at Time 1 and Time 2; and, if so, if the adaptation type (I, II, or III) differed between the time periods. The probability of Time 1, Type I adaptation (maintain, but alter work) influencing Type II (leave of absence) and Type III (quit/retire) adaptations at Time 2 received scrutiny through the second research question.

The third, sixth, and tenth research questions queried the relationship of selected caregiver and care recipient characteristics, family support, and caregiver involvement with each type of employment adaptation. The fourth, seventh, and eleventh questions examined the variation in employment adaptation explained by caregiver and care recipient characteristics, family support, and caregiver involvement. The fifth and ninth questions (specific for Time 2) asked about changes in the amount of family help and the measure of caregiver involvement over the past three months. The eighth question queried whether caregiving responsibility disrupted normal work and daily activities. Finally, the twelfth question asked about the influence of significant variables determined

from the answers to questions four, seven, and eleven on each type of employment adaptation. Study results for the questions and related hypotheses follow.

**Research Question 1** **Does employment adaptation occur, and if so, does the adaptation type differ between Time 1 (inception) and Time 2 (three months)?**

First, frequencies or means and standard deviations for Time 1 and Time 2 employment adaptation variables were determined. Next, difference scores for each adaptation type were calculated. Finally, a paired t-test was utilized to examine Type I (maintain, but alter work), Time 1 and 2 differences, while the McNemar test (paired contingency tables) was used to evaluate the significance of differences for Type II (leave of absence) and Type III (quit/retire) employment adaptations.

The caregivers in the study reported full-time (67.8%) or part-time (30.5%) employment status prior to assuming the caregiver role. At Time 1, the percentage of full-time employees dropped to 43.2% and the proportion of part-time workers declined to 21.2%. At Time 2, some caregivers (7.2%) reported additional employment changes (Figure 4).

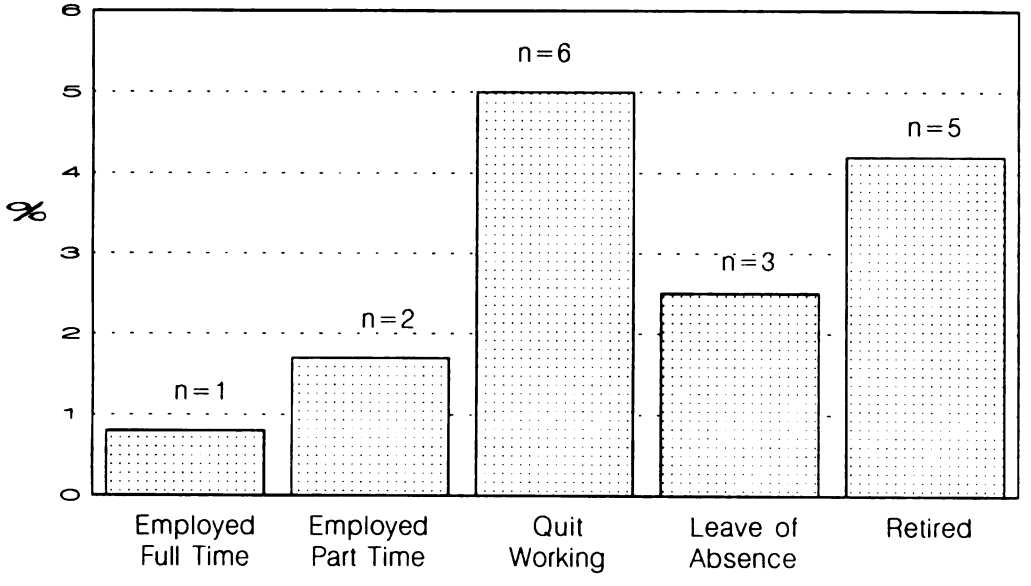



**Figure 4. Time 2 Employment Status Changes (N=119)**

Also, work days lost due to caregiving responsibilities varied between pre Time 1 and between Time 1 and Time 2. At Time 1, caregivers recounted an average of 8.53 (SD = 17.52) lost work days (in the past three months); three months later (Time 2), caregivers reported a mean of 4.83 (SD = 15.96) for missed work days because of eldercare obligations (during the past three months). A paired sample t-test (two-tailed) revealed that the differences between the time periods were not significant.

The mean for the index of Time 1, Type I adaptations (X = 1.75, SD = 1.58) declined for Time 2, Type I adaptation (X = 1.07, SD = 1.18). Thus, the mean difference score (0.68) for Type I adaptation suggested less Type I adaptation at Time 2. The paired t-test confirmed significant differences (two-tail p = .000) between the time periods. The frequencies for Type II and Type III adaptations also dropped, implying

less use of those options during that period. Taking a leave of absence fell 11.0 percentage points (from 18.6% to 7.6%) and choosing to quit or retire from work declined 3.1 percentage points (from 16.5% to 13.4%). The McNemar Test confirmed significant differences ($p = .002$) for Type II, but not Type III adaptations between the time periods.

Figure 5 contains the frequencies for the components comprised in the index of Type I adaptation (arrive late/leave early, miss work without pay, take sick/personal days, change work hours, refuse a job/promotion, kept from looking for a job/better job, and other work effects) and the frequencies for Type II (leave of absence) and Type III (quit/retire) adaptation at Time 1 and Time 2. The results revealed that each adaptation type occurred at both Time 1 and Time 2.

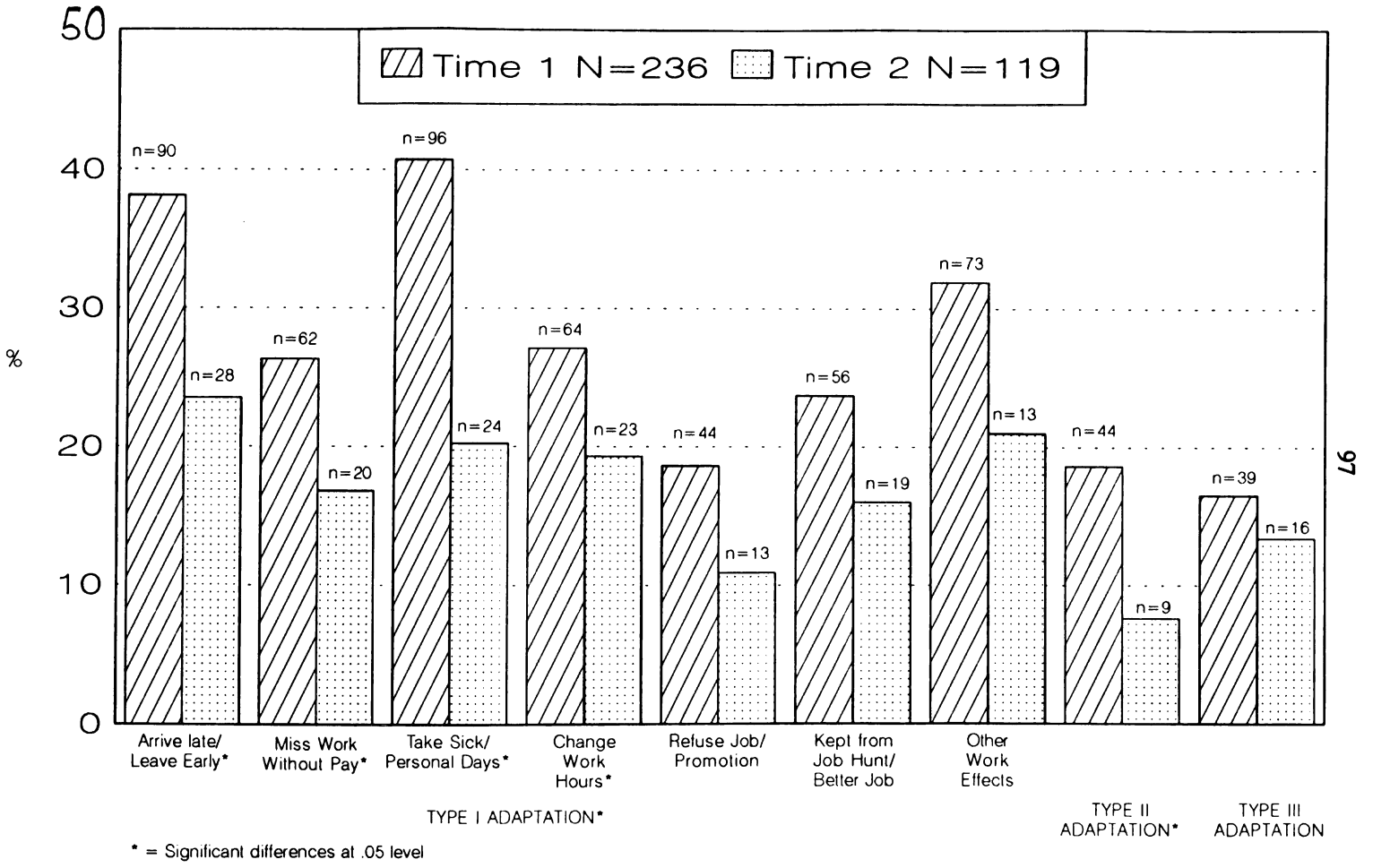



**Figure 5. Frequencies for Employment Adaptations**

**H1a** A variety of Type I employment adaptations occurs at both Time 1 and Time 2.

The results supported this hypothesis. Caregivers reported a variety of employment adaptations (Type I index) at both Time 1 and Time 2 (Table 3). For both time periods, the most frequently recounted adaptation was arrive late/leave early (38.1% at Time 1; 23.5% at Time 2), while refuse job/promotion was the least often noted (18.6% at Time 1; 10.9% at Time 2).

**H1b** There are fewer Type I adaptive behaviors at Time 1 than at Time 2.

The results did not support this hypothesis. Descriptive statistics suggested less Type I adaptation at Time 2 (Time 1, Type I X = 1.75; Time 2, Type I X = 1.07) than at Time 1. The paired t-test confirmed significant differences (p = .000) between Time 1, Type I and Time 2, Type I adaptation. While significant, the differences were not in the expected direction.

**H1c** There is less Type II adaptation at Time 1 than at Time 2.

The results did not support this hypothesis. Descriptive statistics suggested more Type II adaptation at Time 1 than at Time 2 (Time 1 = 18.6%; Time 2 = 7.6%). The McNemar test confirmed significant differences (p = .002), but, as with Type I adaptation, not in the expected direction.

**H1d** There is no difference between Type III employment adaptation at Time 1 and Type III adaptation at Time 2.

The results supported this hypothesis. Descriptive statistics suggested more Type III adaptation at Time 1 than at Time 2 (Time 1 = 16.5%; Time 2 = 13.4%). However, the McNemar test did not confirm significant differences between the time periods.

**Research Question 2** **What is the probability that Time 1, Type I employment adaptation (maintain, but alter work) influences Time 2, Type II (leave of absence) and Type III (quit/retire) employment adaptations?**

Logistic regression determined the probability that Type I adaptation at Time 1 influences Time 2, Type II and Type III employment adaptations. The results of the procedure helped establish whether the model that included the variable in question (Time 1, Type I adaptation) told more about the outcome variables (Time 2, Type II or Type III adaptations) than a model that did not include the variable (model with only the constant).

For Time 2, Type II and Type III adaptations, the -2 Log Likelihood (Type II, p = .999; Type III, p = .744) was not significant. The addition of Time 1, Type I adaptation did not indicate significant improvement, as indicated by the chi-square statistic, to the model with only the constant term for either Time 2, Type II (p = .618) or Type III (p = .812) employment adaptations. A partial correlation with the variables in both models was zero. Table 1 includes the logistic regression results for the influence of Time 1, Type I employment adaptation on Time 2, Type II and Type III adaptations.

**Table 1. Probability of Time 1, Type I Influencing Time 2, Type II and Type III Employment Adaptations**

| Variable | | b | Wald | DF | Sig |
|---|---|---|---|---|---|
| Time 2, Type II (N=98) | | | | | |
| | Time 1, Type I | .113 | .252 | 1 | .616 |
| | Constant | -2.527 | 17.403 | 1 | .000 |
| Time 2, Type III (N=99) | | | | | |
| | Time 1, Type I | .043 | .057 | 1 | .811 |
| | Constant | -1.733 | 14.359 | 1 | .000 |

Results from logistic regression provided the information to answer the following hypothesis.

**H2a** The use of Time 1, Type I adaptation influences the use of Time 2, Type II and Type III adaptations.

The results did not support this hypothesis. The logistic model that included Time 1, Type I adaptation told no more about Time 2, Type II or Type III adaptations than a model with only the constant. The insignificant results indicated that Time 1, Type I employment adaptation did not influence the use of either Time 2, Type II or Type III adaptations.

**Research Question 3** **What is the relationship of selected caregiver and care recipient characteristics to each type of employment adaptation at Time 1 and Time 2?**

a. caregiver age
b. relationship to the care recipient
c. caregiver marital status
d. caregiver education
e. caregiver occupation
f. caregiver household income
g. employment status (current part-time or full-time)
h. co-residence status (now and before)
i. care recipient age
j. care recipient gender

Pearson correlations (for all adaptation types and continuous variables), oneway ANOVA (for Type I and categorical variables), and contingency tables (for Types II and III and categorical variables) were used to answer this research question and the related hypotheses. Variables significantly correlated with Type I (maintain, but alter work) adaptation at Time 1 included caregiver age, household income, and education. No caregiver/care recipient characteristic variable displayed a significant relationship with Type I adaptation at Time 2.

For Type II (leave of absence) adaptation, only one variable (caregiver education) was significant at Time 1; none were significant for Time 2. Caregiver household income correlated significantly with Time 1, Type III (quit/retire) adaptation, while caregiver education showed a significant relationship with Time 2, Type III adaptation. Table 2 displays the Time 1 and Time 2 correlation results for selected caregiver/care recipient characteristics and employment adaptation.

**Table 2. Correlations of Selected Caregiver/Care Recipient Characteristics with Employment Adaptation**

| Time 1 (N=236) Time 2 (N=119) | Caregiver Age | Caregiver Household Income | Caregiver Education | Care Recipient Age |
|---|---|---|---|---|
| Type I | | | | |
| Time 1 | **-.344*** ** | **.205** ** | **.133*** | -.025 |
| Time 2 | .001 | -.043 | .096 | -.001 |
| Type II | | | | |
| Time 1 | .011 | -.148 | **-.182*** | -.130 |
| Time 2 | .090 | -.055 | -.125 | .036 |
| Type III | | | | |
| Time 1 | -.113 | **-.157*** | -.082 | -.034 |
| Time 2 | -.127 | -.084 | **-.222*** | -.032 |

p (2-tailed) * <.05; ** <.01; *** <.001

At Time 1, oneway ANOVA results indicated significant differences for four of the seven categorical variables and Type I adaptation. These included caregiver relationship to care recipient, current employment status, co-residence (now) with the co-recipient, and care recipient gender. There were no significant differences noted with Type I and any of the caregiver/care recipient variables at Time 2. Tables 3 (Time 1) and 4 (Time 2) present the oneway ANOVA outcomes for selected caregiver/care recipient characteristics and Type I employment adaptation.

**Table 3. Time 1 Oneway ANOVA by Type I for Selected Caregiver/Care Recipient Characteristics**

| Variable (N=236) | SS | DF | MS | F | Sig F |
|---|---|---|---|---|---|
| Relationship to Care Recipient+ | 52.460 | 2 | 26.230 | 11.482 | **.000*** |
| Marital Status | .172 | 1 | .172 | .069 | .793 |
| Caregiver Occupation++ (n=190) | .964 | 2 | .482 | .194 | .824 |
| Current FT/PT Employment Status (n=151) | 9.439 | 1 | 9.544 | 4.130 | **.044*** |
| Co-residence (now) | 12.282 | 1 | 12.282 | 5.020 | **.026*** |
| Co-residence (before) (n=161) | .922 | 1 | .922 | .392 | .532 |
| Care Recipient Gender | 37.139 | 1 | 37.139 | 15.870 | **.000*** |

Note: * Significant differences between groups.
+ Tukey's HSD revealed daughters/daughters-in-law significantly different from other groups at .05 level.
++ Tukey's HSD revealed no significant differences between groups at .05 level.

**Table 4. Time 2 Oneway ANOVA by Type I for Selected Caregiver/Care Recipient Characteristics**

| Variable (N=119) | SS | DF | MS | F | Sig F |
|---|---|---|---|---|---|
| Relationship to Care Recipient++ | 1.916 | 2 | .958 | .688 | .505 |
| Marital Status | .051 | 1 | .051 | .037 | .848 |
| Caregiver Occupation (n=89)++ | .431 | 2 | .215 | .155 | .857 |
| Co-residence (before) (n=83) | .253 | 1 | .253 | .169 | .682 |
| Care Recipient Gender | 2.363 | 1 | 2.363 | 1.716 | .193 |

Note: ++ Tukey's HSD revealed no significant differences between groups at .05 level.

Contingency tables indicated significant results for two categorical caregiver/care recipient characteristics (caregiver current employment status, p = .000; co-residence now, p = .010) and Time 1, Type II adaptation and one (caregiver current employment status, p = .000) with Time 1, Type III adaptation. There were no significant Time 2, Type II or Type III relationships. Table 5 presents the contingency table results for Time 1 and Time 2, Type II and Type III employment adaptations. The specific approach and discussion for each hypothesis about caregiver/care recipient characteristics and employment adaptation follow.

**Table 5. Contingency Tables by Type II and Type III for Selected Caregiver/Care Recipient Characteristics**

| | Variable | Time 1 (N=236) $\chi^2$ | Time 2 (N=119) $\chi^2$ |
|---|---|---|---|
| Type II | | | |
| | Family Relationship (T1, n=177; T2 n=98) | .263 | .791 |
| | Marital Status (T1, n=177; T2, n=98) | .900 | .759 |
| | Caregiver Occupation (T1, n=167; T2, n=85) | .224 | .227 |
| | Current Employment Status (T1, n=177) | **.000** | NA |
| | Co-residence (now) (T1, n=177) | **.010** | NA |
| | Co-residence (before) (T1, n=112; T2, n=66) | .611 | .713 |
| | Care Recipient Gender (T1, n=177; T2, n=98) | .884 | .168 |
| Type III | | | |
| | Family Relationship (T1, n=233; T2, n=98) | .146 | .829 |
| | Marital Status (T1, n=233; T2, n=99) | .529 | .456 |
| | Caregiver Occupation (T1, n=187; T2, n=85) | .374 | .931 |
| | Current Employment Status (T1, n=233) | **.000** | NA |
| | Co-residence (now) (T1, n=233) | .087 | NA |
| | Co-residence (before) (T1, n=158; T2, n=67) | .444 | .072 |
| | Care Recipient Gender (T1, n=233; T2, n=99) | .388 | .776 |

Note: NA At Time 2, caregivers did not indicate their current employment status or co-residence now.

**p** $< .05$

**H3a** Caregiver age relates inversely to each type of employment adaptation.

Time 1 results supported this hypothesis for Type I adaptation, but not for Type II or Type III adaptations. Correlations were used to assess the relationship of caregiver age with each type of employment adaptation (Table 2). There was a significant negative relationship with Time 1, Type I adaptation ($r = -.344$, $p = .000$) and caregiver age, but not with Type II ($r = .011$) or Type III ($r = .118$) employment adaptations.

Time 2 outcomes did not support this hypothesis. At Time 2, there were no significant inverse relationships with caregiver age and Type I ($r = .001$), Type II ($r = .090$), or Type III ($r = -.127$) employment adaptations.

**H3b** Employment adaptation differs by caregiver relationship to care recipient.

The results supported the hypothesis for Time 1, but not Time 2, Type I adaptation. The results did not sustain the hypothesis for Type II and Type III adaptations at either time period. Analysis using oneway ANOVA (Type I) and contingency tables (Type II and Type III) provided results to examine the differences between caregiver/care recipient relationships (spouse, daughter/daughter-in-law, other) and employment adaptation. Significant group differences ($p = .000$) were revealed for Time 1, Type I adaptation (Table 3). Additional testing with Tukey's Honestly Significant Differences method showed daughters/daughters-in-law to be different from spouse and other caregivers for Type I adaptation. However, this significant difference did not persist at Time 2 (Table 4). Chi-square analysis of contingency table results (Table 5) did not indicate a significant association for spouse, daughter/daughter-in-law, or other family caregivers for either Time 1 or Time 2, Type II or Type III adaptations.

**H3c** Employment adaptation differs for married and unmarried caregivers.

The results did not support this hypothesis at Time 1 or Time 2 (Tables 3-5). Oneway ANOVA (Type I) and contingency tables (Type II and Type III) provided results to determine whether there was a difference in any type of employment adaptation between married and unmarried caregivers. There were no significant differences between married and unmarried caregivers for Type I, II, or III employment adaptations.

**H3d** Caregiver education relates inversely to employment adaptation.

The correlation outcomes supported this hypothesis only for Time 1, Type II ($r = -.182$, $p = .015$) and Time 2, Type III ($r = -.222$, $p = .027$) adaptations. While there was an inverse relationship between education and Type II adaptation at Time 2 ($r = -.082$) and education and Type III adaptation at Time 1 ($r = -.125$), the relationships were not significant. At Time 1, there was a significant relationship with education and Type I adaptation, but not in the direction expected ($r = .133$, $p = .042$). At Time 2, the relationship of education with Type I adaptation also was positive, but insignificant ($r = .096$). Thus, the outcomes (Table 2) offered limited support for the hypothesis.

**H3e** Employment adaptation differs with caregiver occupation.

The results did not support this hypothesis. Occupation made no significant difference in the use of Type I, Type II, or Type III adaptations at either Time 1 or Time 2 (Tables 3-5). Oneway ANOVA (Type I) and contingency tables (Type II and Type III) provided outcomes to assess differences between employment adaptation and caregiver

occupation (professional, management, administrative; sales, clerical, technical; or other).

**H3f** Caregiver household income relates inversely to employment adaptation.

The correlation outcomes (Table 2) supported the hypothesis for Type III adaptation ($r = -.157$, $p = .027$) at Time 1. However, it did not support the hypothesis for Time 1, Type I or Type II adaptations or for any adaptation type at Time 2.

At Time 1, income had a significant (but positive, not inverse) relationship ($r = .205$, $p = .003$) with Type I adaptation, and an inverse (but not significant) relationship with Type II ($r = -.148$). While there were inverse relationships with caregiver household income and each adaptation type at Time 2 (Type I, $r = -.043$; Type II, $r = -.055$; Type III, $r = -.084$), they were not significant.

**H3g** Employment adaptation differs with full-time and part-time employment status.

The results supported this hypothesis for Time 1 and all adaptation types. Employment status was significantly different for Time 1, Type I ($p = .044$), Type II ($p = .000$), and Type III ($p = .000$) adaptations. Oneway ANOVA (Type I) and contingency tables (Type II and Type III) provided the techniques (Tables 3-5) to determine whether there were differences and associations between full-time and part-time employment status and employment adaptation. At Time 2, caregivers were not asked to indicate their current employment status.

**H3h** Employment adaptation differs if caregiver and care recipient reside together.

The results partially supported this hypothesis for Time 1. There were significant differences with Time 1, Type I ($p = .026$) and Type II ($p = .010$) adaptations between caregivers who **currently** lived with their care recipient and those who did not. However, there was no significant difference ($p = .088$) between the groups with Time 1, Type III adaptation. Oneway ANOVA (Type I) and contingency tables (Type II and Type III) contributed the results (Tables 3-5) to determine whether there were differences and associations between caregiver/care recipient co-residence and residence apart and employment adaptation. Caregivers were not asked about **current** co-residence status at Time 2. At both Time 1 and Time 2 there were no significant differences based on co-residence **before** caregiving with any adaptation type.

**H3i** Care recipient age relates positively to caregiver employment adaptation.

The results (Table 2) did not support this hypothesis for Time 1 or Time 2. There were insignificant negative correlations with care recipient age and Type I ($r = -.025$), Type II ($r = -.130$), and Type III ($r = -.034$) adaptations at Time 1. Likewise, at Time 2, there was an insignificant negative relationship with care recipient age and Type I ($r = -.001$) and Type III ($r = -.032$) adaptations. At Time 2, the relationship of care recipient age to Type II employment adaptation was positive, but insignificant ($r = .036$).

**H3j** Care recipient gender makes no difference in employment adaptation.

This hypothesis was partially supported at Time 1 and completely supported at Time 2. Gender was not significantly associated with Time 1, Type II or Type III adaptations; however, gender did make a significant difference ($p = .000$) in Time 1, Type I adaptation. At Time 2, there were no significant differences with gender and the three employment adaptation types. Oneway ANOVA (Type I) and contingency tables (Type II and Type III) provided results (Tables 3-5) to verify this hypothesis.

**Research Question 4** **How much variation in each type of employment adaptation at Time 1 and Time 2 do selected significant caregiver and care recipient characteristics explain?**

a. caregiver age
b. relationship to the care recipient
c. caregiver education
d. caregiver household income
e. co-residence status (now)
f. care recipient gender

Bivariate associations among the variables and each adaptation type were examined to eliminate from multivariate analyses potential explanatory factors that did not have significant associations. Stepwise multiple regression provided results to answer this research question and the related hypotheses for Time 1, Type I (maintain, but alter work) adaptation, while two-group discriminant analysis (Wilks's method) was used to determine whether selected caregiver and care recipient characteristics could differentiate those caregivers who used Time 1, Type II (leave of absence) from those who did not. An independent t-test provided results to assess the significance of the only caregiver/care recipient variable displaying a significant relationship with Time 1, Type III adaptation.

Results from preliminary analyses of Time 2 data (correlations, oneway ANOVA, contingency tables) did not suggest the need for additional regression or discriminant analyses for either Type I or Type II adaptations. However, as with Time 1 data, an independent t-test was used to evaluate the importance of the only caregiver/care recipient characteristic variable showing a significant relationship to Time 2, Type III employment adaptation.

Employment status, in spite of significant differences between part-time and full-time employment and each adaptation type, was not used for any additional analysis. This was done in order that the other significant caregiver/care recipient characteristics could be assessed for their unique and relative influence on employment adaptation.

Variables with significant correlations (caregiver age, education, and household income) or oneway ANOVA results (relationship to care recipient, care recipient gender, and co-residence now) were used in the Time 1 regression analysis. Variables eliminated included caregiver marital status, occupation, co-residence status (before), and care recipient age. Three variables, caregiver age, caregiver relationship to care recipient, and care recipient gender explained 19% of the total variance ($R^2 = .191$, $p = .000$) for Type I employment adaptation at Time 1.

Table 6 displays the stepwise regression results for Time 1, Type I adaptation and selected caregiver/care recipient characteristics.

**Table 6. Time 1 Regression of Significant Caregiver/Care Recipient Characteristics and Type I Adaptation**

| Variable | b | $\beta$ | T | Sig t |
|---|---|---|---|---|
| Constant | 3.475 | | 5.451 | **.000** |
| Caregiver age | -.051 | -.364 | -4.368 | **.000** |
| Relationship to care recipient (daughter) | 1.196 | .366 | 3.166 | **.002** |
| Relationship to care recipient (spouse) | 1.568 | .454 | 2.964 | **.003** |
| Care recipient gender | -.685 | -.213 | -2.195 | **.029** |
| $R^2$ | **.191** | | | |
| F | 12.139 | | | |
| p-value | **.000** | | | |
| N | 210 | | | |

Note: Variables in equation = $p < .05$

As with Type I adaptation, only variables with significant relationships (correlations or contingency tables) with Type II adaptation were used in the discriminant analysis. For Time 1, Type II, this included significant correlation (caregiver education) and significant contingency table (co-residence now) results.

In discriminant analysis, as in multiple regression, the emphasis is on analyzing variables together, not one at a time, so that important relationships can be noted. Norusis (1990c) claims that the linear combination of the variables, summarized in a single index, serves as the basis for allocating cases to groups. The unstandardized discriminant function coefficients are the "multipliers of the variables when they are

expressed in the original units" (Norusis, 1990c, p. B-14). The standardized canonical discriminant function coefficients show the relative contribution of the variables to the equation. According to Klecka (1980), the larger the magnitude (regardless of the sign), the greater the variable contribution.

Chi-square analysis of the canonical discriminant function for Time 1, Type II employment adaptation and significant caregiver/care recipient characteristics (caregiver education and co-residence now) indicated significance for the overall model effectiveness ($p = .004$). Discriminant analysis correctly grouped almost 59% (58.76) of the cases. Although a statistically significant result, practical significance in the present study is considered to be 60% or above.

Table 7 contains the canonical discriminant functions, Table 8 includes classification results, and Table 9 incorporates the unstandardized and standardized canonical discriminant function characteristics for significant selected caregiver/care recipient characteristics and Time 1, Type II employment adaptation.

**Table 7. Canonical Discriminant Functions for Selected Significant Caregiver/Care Recipient Characteristics and Time 1, Type II Adaptation**

| | Eigen-value | Canonical Correlation | Wilks's Lambda | $\chi^2$ | DF | Sig. |
|---|---|---|---|---|---|---|
| Type II (N=177) | .065 | .247 | .939 | 10.964 | 2 | **.004** |

**Table 8. Discriminant Function Classification for Selected Significant Caregiver/Care Recipient Characteristics and Time 1, Type II Adaptation**

| | | Predicted | Predicted | |
|---|---|---|---|---|
| Time 1, Type II (N=177) | | | | |
| Actual Group | Cases | LOA | No LOA | |
| LOA | 44 (100%) | 31 (70.5%) | 13 (29.5%) | |
| No LOA | 133 (100%) | 60 (45.1%) | 73 (54.9%) | |
| Percent of cases correctly grouped | | | | **58.76%** |

**Table 9. Canonical Discriminant Function Coefficients for Selected Significant Caregiver/Care Recipient Characteristics and Time 1, Type II Adaptation**

| | Unstandardized | Standardized |
|---|---|---|
| Type II (N=177) | | |
| Caregiver education | -.266 | -.636 |
| Co-residence now | 1.459 | .694 |

For Time 1, Type III adaptation, only one variable displayed a significant relationship (caregiver household income). Because there was only one variable with a significant relationship to Time 1, Type III adaptation, an independent t-test (two-tailed), not discriminant analysis, was used to check the significance of mean differences in caregiver household income with Time 1, Type III adaptation. The independent t-test confirmed significant differences (two-tail $p = .023$) related to the income of those caregivers who chose to quit or retire at Time 1 (less income) and those who did not.

Similarly, at Time 2, just one variable (caregiver education) showed a significant relationship with Type III adaptation. An independent t-test confirmed significant differences (two-tail p = .027) related to the education of those caregivers who elected to quit or retire at Time 2 (less education) and those who did not. Table 10 contains the independent t-test outcomes for Time 1, Type III adaptation and Table 11 includes results for Time 2, Type III adaptation.

**Table 10. Independent t-test for Caregiver Household Income and Time 1, Type III Employment Adaptation**

| Type III | Number of Cases | Mean | SD |
|---|---|---|---|
| Time 1 Quit/Retire | 38 | $30263.16 | $16199.66 |
| Time 1 No Quit/Retire | 171 | $37318.71 | $17387.01 |
| Pooled Variance Estimate | t value 2.29 | DF 207 | 2-tail probability **.023** |

**Table 11. Independent t-test for Caregiver Education and Time 2, Type III Employment Adaptation**

| Type III | Number of Cases | Mean | SD |
|---|---|---|---|
| Time 1 Quit/Retire | 16 | 12.19 | 1.83 |
| Time 1 No Quit/Retire | 83 | 13.63 | 2.43 |
| Pooled Variance Estimate | t value 2.25 | DF 97 | 2-tail probability **.027** |

In summary, some caregiver/care recipient characteristic variables offered significant explaining power and differentiation for each adaptation type. Three variables (caregiver age, family relationship, care recipient gender) predicted Time 1, Type I adaptation ($R^2$ = .191), two variables (caregiver education, co-residence now) contributed to the discriminant function of Time 1, Type II adaptation (59% correct grouping), and one variable differentiated Type III adaptation at both Time 1 (caregiver household income) and Time 2 (caregiver education).

The absence of significant relationships for caregiver and care recipient characteristics with Time 2, Type I and Type II adaptations implies that they offer scant explanatory power for those adaptation types at that time. The specific approach and discussion for each hypothesis about caregiver/care recipient characteristics and employment adaptation follow.

**H4a** Caregiver age explains more variation in employment adaptation at Time 1 and Time 2 than do other caregiver/care recipient characteristics.

The results did not support this hypothesis for either Time 1 or Time 2. While caregiver age did explain variation in Time 1, Type I adaptation (Table 6), it was one of three variables (caregiver age, relationship with care recipient, and care recipient gender) to do so. Of those variables, family relationship (daughter/daughter-in-law, $\beta$ = .366; spouse, $\beta$ = .454) had a slightly higher relative contribution to the equation than did caregiver age ($\beta$ = .364).

The other caregiver/care recipient characteristic variables (caregiver income, education, and co-residence with the care recipient) showing significant relationships with

Type I adaptation did not meet criteria for the final regression equation (Table 6). While this suggests that caregiver age offered relatively more explaining power for Type I adaptation than those variables, it cannot be said that caregiver age explains more variation than any of the caregiver/care recipient characteristics for Time 1, Type I adaptation.

Likewise, the results did not support this hypothesis for Time 1, Type II or Type III adaptations. Caregiver age did not show a significant correlation with Type II or Type III adaptations at Time 1 and was not used for additional analyses. At Time 2, correlations revealed no significant relationships with Type I, Type II, or Type III adaptations. Thus, additional analyses were not done.

**H4b** Care recipient age and care recipient gender explain little variation in employment adaptation at Time 1 and Time 2.

The results partially supported this hypothesis. Care recipient age had no significant relationship with Time 1, Type I adaptation; however, care recipient gender was one of three significant variables in final regression equation (Table 6). At Time 2, neither care recipient age or gender showed a significant relationship with Type I adaptation; thus, they were not used in subsequent regression analysis. This suggests support for the hypothesis for Type I adaptation at Time 2.

The outcomes also intimate support for the hypothesis for Type II and Type III adaptations at Time 1 and Time 2. Neither care recipient age nor gender showed significance at either time period (implying scant relationship with either adaptation type) and were not used for subsequent Type II and Type III discriminant analysis.

**Research Question 5** **Was there a reported change in the amount of help from family members between Time 1 and Time 2?**

Frequencies provided results to respond to this question and the following hypothesis. Some caregivers reported changes (36.1%) in the amount of family help while others did not (63.9%).

**H5a** The majority of caregivers will report that the level of family help remained "about the same" at Time 2.

The results supported this hypothesis. Most caregivers (63.9%) who remained in the study at Time 2 noted that the amount of help from their family remained about the same three months later. However, for some caregivers, the amount of help increased (14.3%), while for others it decreased (21.8%).

**Research Question 6** **What is the relationship of family support to each type of employment adaptation at Time 1 and Time 2?**

a. number in network
b. amount of help provided
c. frequency of assistance given

Caregivers reported an average of two relatives living within 50 miles ($X = 2.27$, $SD = 2.10$). The mean for the amount of help provided at Time 1 was 2.93 ($SD = 3.52$, range 0 - 19), while the frequency of help (Time 1, $X = 1.74$, $SD = .48$; Time 2, $X = 1.66$, $SD = .57$) ranged from rarely or none of the time (1) to almost all of the time (4).

Pearson correlations provided outcomes that indicated a significant relationship with the amount of family help ($r = .223$, $p < .001$) and Time 1, Type I adaptation, but

not with Time 1, Type II or Type III adaptations. However, no other family variable displayed a significant relationship to any employment adaptation type at Time 1. At Time 2, the family variables available for study (number in the family network, frequency of family help) did not show significant relationships with any adaptation type. Table 12 contains correlation results for the family support variables and employment adaptation.

**Table 12. Correlations of Family Support Variables with Employment Adaptation**

| Time 1 (N=236)<br>Time 2 (N=119) | Family Members within 50 Miles | Frequency of Family Aid | Amount of Family Help |
|---|---|---|---|
| Type I | | | |
| Time 1 | .041 | -.031 | **.223*** ** |
| Time 2 | -.098 | .138 | NA |
| Type II | | | |
| Time 1 | -.086 | -.048 | -.096 |
| Time 2 | -.029 | .039 | NA |
| Type III | | | |
| Time 1 | .120 | -.066 | .032 |
| Time 2 | .188 | -.140 | NA |

p (2-tailed) * <.05; ** <.01; *** <.001

Note: NA Time 2 data do not include comparable information for amount of family help.

The specific approach and discussion for each hypothesis about family support and employment adaptation follow.

**H6a** The number in the family network has no relationship to employment adaptation at Time 1 and Time 2.

The results supported this hypothesis. There were no significant relationships between the number of caregiver family members living within a 50 mile radius of the caregiver and Type I ($r = .041$), Type II ($r = -.086$), and Type III ($r = .120$) adaptations at Time 1 or Time 2 (Type I, $r = -.098$; Type II, $r = -.029$; Type III, $r = .188$).

**H6b** The amount of help provided by the family relates inversely to employment adaptation at both Time 1 and Time 2.

The results did not support this hypothesis. At Time 1, there was an inverse, but not significant relationship between Type II ($r = -.096$) adaptation and the amount of family help. There was a significant, positive relationship with Type I ($r = .223$, $p = <.001$) and an insignificant correlation with Type III adaptation ($r = .032$). At Time 2, caregivers were not asked to indicate the amount of help from each network member.

**H6c** The frequency of family help relates inversely to employment adaptation at both Time 1 and Time 2.

The results did not support this hypothesis for either time. At Time 1, there were inverse, but insignificant, relationships (Type I, $r = -.031$; Type II, $r = -.048$; Type III $r = -.066$) between the frequency of family help and each employment adaptation type. At Time 2, there were positive, but insignificant relationships between Type I ($r = .138$) and Type II ($r = .039$) employment adaptations and frequency of help. While Time 2,

Type III adaptation had an inverse relationship (r = -.140) with frequency of family help, it was not significant.

**Research Question 7** **How much variation in each type of employment adaptation at Time 1 and Time 2 does family support explain?**

a. number in network
b. amount of help provided
c. frequency of assistance given

As in Question 4, stepwise multiple regression provided results to answer this research question and its hypotheses for Type I adaptation. While only one variable (amount of family help) had a significant correlation with Time 1, Type I adaptation, all three family variables were used in the regression equation because of the importance of family in the conceptual model for this study. Amount of family help explained only five percent ($R^2$ = .047, p = .001) of the variance in Time 1, Type I adaptation. The other variables (frequency of family help and number in family network) did not meet the criteria for the regression equation. Table 13 contains the Time 1 regression results for the family variables.

**Table 13. Regression for Family Support Variables and Time 1, Type I Employment Adaptation**

| Variable | b | $\beta$ | T | Sig t |
|---|---|---|---|---|
| Constant | 1.460 | | 10.919 | **.000** |
| Amount of family help | .098 | .217 | 3.351 | **.001** |
| $R^2$ | **.047** | | | |
| F | 11.227 | | | |
| p-value | **.001** | | | |
| N | 229 | | | |

Note: Variables in equation = $p < .05$

No family variables showed significant correlations with Time 1, Type II or Type III adaptations, but, as with the regression analysis, they were used for discriminant analyses due to their importance in the conceptual model of the present study. Two-group discriminant analysis (Wilks's method) provided results for Types II and III employment adaptation. Chi-square analyses of the canonical discriminant function did not show significance (Type II, $p = .194$; Type III, $p = .102$) for the overall effectiveness of either model (Table 14).

**Table 14. Canonical Discriminant Functions for Family Support Variables and Time 1, Type II and Type III Adaptations**

| | Eigen-value | Canonical Correlation | Wilks's Lambda | $\chi^2$ | DF | Sig. |
|---|---|---|---|---|---|---|
| Type II | | | | | | |
| Time 1 (N=171) | .010 | .100 | .990 | 1.685 | 1 | .194 |
| Type III | | | | | | |
| Time 1 (N=226) | .021 | .142 | .980 | 4.559 | 2 | .102 |

The absence of an effective model explains the poor classification results, especially for Time 1, Type II adaptation. The discriminant function correctly grouped only 55% (54.80%) of the cases for Type II adaptation. For Time 1, Type III, correct classification results increased slightly, to almost 57% (56.64%). Table 15 contains the discriminant analysis classification outcomes for family support variables and Type II and Type III adaptations.

**Table 15. Discriminant Function Classification Results for Family Support Variables and Time 1, Type II and Type III Adaptations**

| | | Predicted | Predicted | |
|---|---|---|---|---|
| Type II (N=171) | | | | |
| Actual Group | Cases | LOA | No LOA | |
| LOA | 44 (100%) | 28 (63.6%) | 16 (36.4%) | |
| No LOA | 133 (100%) | 64 (48.1%) | 69 (51.9%) | |
| Percent of cases correctly grouped | | | | **54.80%** |
| Type III (N=226) | | | | |
| Actual Group | Cases | Quit/Retire | No Quit or Retire | |
| Quit/Retire | 38 (100%) | 16 (42.1%) | 22 (57.9%) | |
| No Quit/Retire | 188 (100%) | 76 (40.4%) | 112 (59.6%) | |
| Percent of cases correctly grouped | | | | **56.64%** |

Clearly, family support offered little explanatory power for Time 1, Type I adaptation ($R^2$ = .047). While the discriminant analysis classification results were better than the 50% correct that might be expected by chance, neither Time 1, Type II (55% correct grouping) nor Type III (57% correct grouping) adaptations indicated a strong connection with the family support variables. Thus, the analyses did not yield either

statistically significant results or the practically significant outcomes (60%) identified by this researcher for the present study.

At Time 2, caregivers were not asked comparable information about the amount of family help. Instead, they were asked if the amount of help from family members changed in the past three months (Research Question 5). Preliminary analyses of the remaining Time 2 family variables (family network, frequency of aid) did not indicate significant relationships with any adaptation type. Thus, additional study was not done. The specific approach and discussion for each hypothesis about family support and employment adaptation follow.

**H7a** The amount of help and frequency of assistance provided explain more variation in employment adaptation at both Time 1 and Time 2 than does the number in the network.

The results partially supported this hypothesis for Time 1. The amount of family help met criteria to enter the regression equation (the only family variable to do so); thus, it explained more Type I variation than did the network number. However, the frequency of family aid did not meet criteria for the regression equation; consequently, it along with family network, explained little Type I variation.

Similar results occurred for Time 1, Type II adaptation. The amount of family help was the only variable in the final discriminant equation. Neither frequency of family help nor family network met the tolerance level for the final analysis; thus, neither variable contributed to the equation. This finding suggested that the amount of family help, but not the frequency of aid contributed to group differentiation.

The Time 1, Type III analysis provided the opposite outcome from that of Type I or Type II investigation. Caregiver family network and the frequency of family assistance met the criteria for the final discriminant equation, while the amount of family help did not. Thus, results supported the frequency of family assistance, but not the amount of family help, to predict Time 1, Type III employment adaptation. Correlations did not reveal significant relationships with the family variables and any adaptation type at Time 2; thus, additional study was not done. Table 16 contains the unstandardized and standardized canonical discriminant function coefficients for family characteristics and Time 1, Type II and Type III adaptations.

**Table 16. Canonical Discriminant Function Coefficients for Family Support Variables and Time 1, Type II and Type III Employment Adaptations**

| | Type II (N=171) | | Type III (N=226) | |
|---|---|---|---|---|
| | Unstand-ardized | Standard-ized | Unstand-ardized | Standard-ized |
| Amount of family help | .274 | 1.000 | NA | NA |
| Family members within 50 miles | NA | NA | .420 | .892 |
| Frequency of family help | NA | NA | -1.123 | -.545 |

Note: NA = Variable did not meet tolerance level to enter the equation.

**Research Question 8** **Do caregiving responsibilities disrupt normal work and daily activities at both time periods?**

Frequencies provided results to answer this research question and the following hypothesis. The majority of caregivers reported disruption with usual activities (Time

1 = 88%; Time 2 = 87%), but some did not (Time 1 = 12%; Time 2 = 12%). Differences in the reported disruption were not significant.

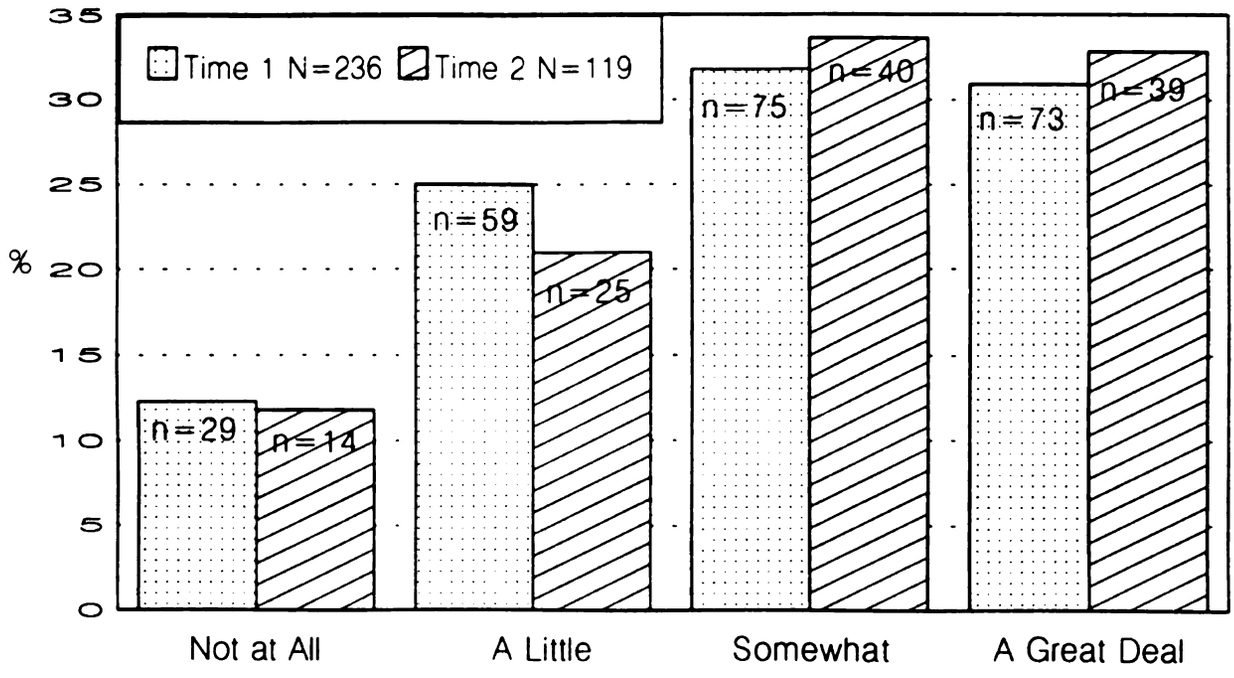



**Figure 6. Disruption of Normal Work and Daily Activities because of Caregiving Activities**

**H8a** Caregiving responsibilities disrupt normal work and daily activities at both time periods.

The results supported this hypothesis. Caregivers recounted disruption at both time periods (Figure 6). Reports ranged from "a little disruption" (Time 1 = 25%; Time 2 = 21.0%) to "a great deal of disruption" (Time 1 = 30.9%; Time 2 = 32.8%).

**Research Question 9** **Does the level of reported caregiver involvement change from Time 1 to Time 2?**

Frequencies provided results to answer this question and the following hypothesis. Some caregivers reported changes (63%) while others did not (38%).

**H9a** The majority of caregivers will report that they provide "about the same" amount of care compared to three months ago.

The results did not support this hypothesis. While 38% (37.8) reported "about the same," almost 40% (39.5%) reported less care and 23% (22.7) reported more care.

**Research Question 10** **What is the relationship of caregiver involvement (activities and time) to each type of employment adaptation at Time 1 and Time 2?**

a. total involvement (ADL, IADL, HCA)
b. hours of physical care
c. hours of supervision

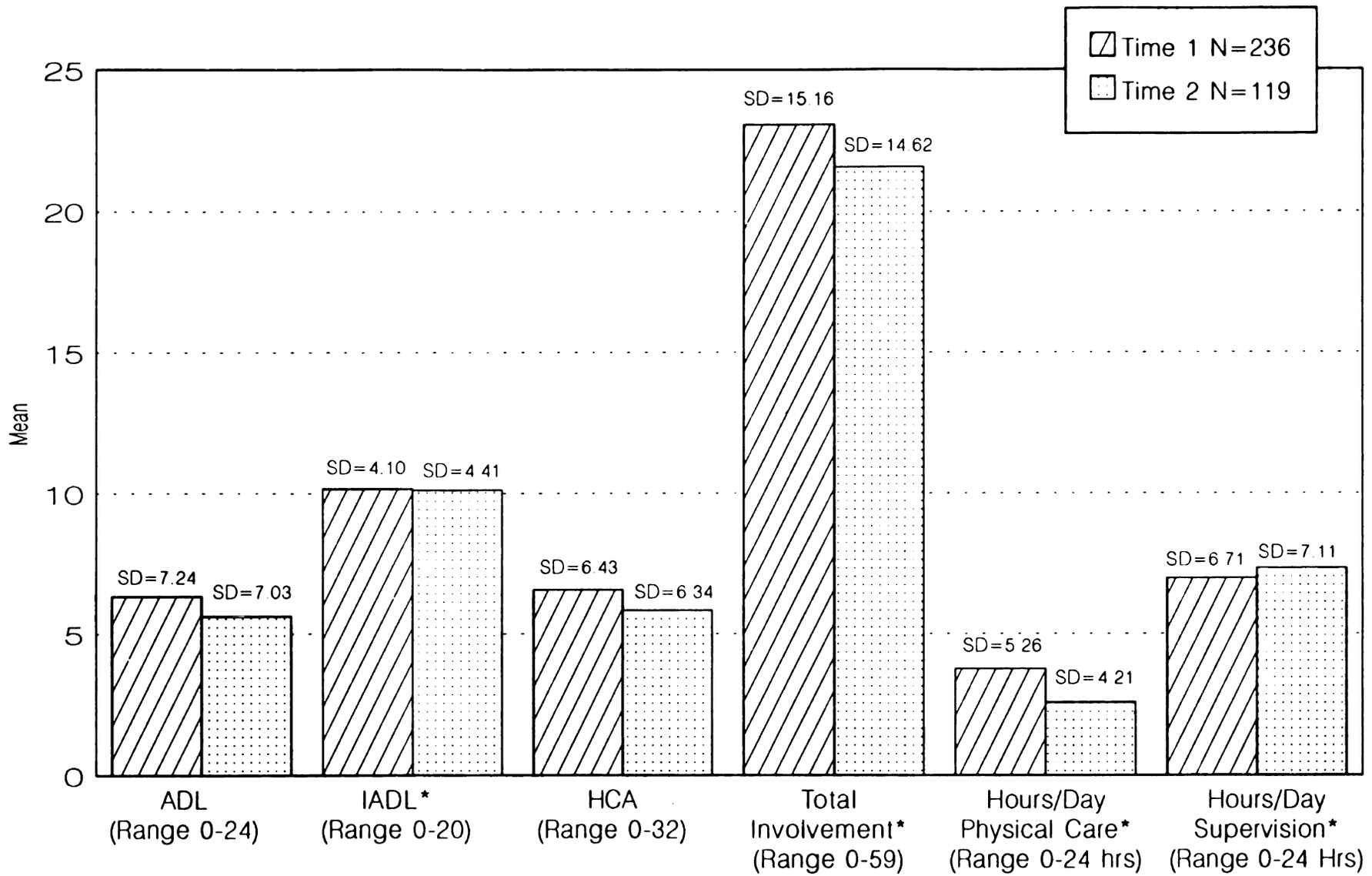
Pearson correlations were used to show the relationship between caregiver involvement and each adaptation type. Caregiver total involvement and hours of physical care correlated significantly with Time 1, Type I adaptation; hours of supervision did not. All involvement variables (total caregiver involvement, hours of physical care, and hours of supervision) showed a significant, positive relationship for Type II and Type III adaptations at Time 1. Time 2 findings demonstrated only one significant correlation with the three adaptation types, namely, hours of supervision with Type III employment adaptation. Table 17 contains correlations for Time 1 and Time 2 employment adaptation and the caregiver involvement variables.

**Table 17. Correlations of Caregiver Involvement with Employment Adaptation**

| Time 1 (N=226)<br>Time 2 (N=119) | Total Caregiver Involvement | Hours of Physical Care | Hours of Supervision |
|---|---|---|---|
| Type I | | | |
| Time 1 | .228*** | .253*** | .078 |
| Time 2 | .135 | .115 | .010 |
| Type II | | | |
| Time 1 | .198** | .250*** | .160* |
| Time 2 | .011 | .113 | .085 |
| Type III | | | |
| Time 1 | .324*** | .315*** | .227*** |
| Time 2 | .113 | -.043 | .343*** |

p (2-tailed) * <.05; ** <.01; *** <.001

The means for the involvement variables varied with the time periods. The average for Time 1 total involvement (23.06, SD = 15.16) declined at Time 2 (21.57, SD 14.62). A paired t-test indicated the differences were significant (two-tailed probability = .026). Likewise, the mean for hours of physical care dropped from 3.76 (SD = 5.26) to 2.58 (SD = 4.21) at Time 2. A paired t-test indicated the differences were significant (two-tailed probability = .026). The average hours of supervision increased from Time 1 (6.98, SD = 6.71) to 7.33 (SD = 7.11) at Time 2. However, the paired t-test showed that the differences were not significant. Figure 7 includes the means for the caregiver involvement variables.




* = Significant differences

**Figure 7. Means for Caregiver Involvement Variables**

The specific approach and discussion for each hypothesis about caregiver involvement and employment adaptation follow.

**H10a** Total involvement (ADL, IADL, and HCA) relates positively to employment adaptation.

The results supported this hypothesis for Time 1, but not for Time 2. At Time 1, total caregiver involvement showed a significant positive relationship with each type of employment adaptation (Type I, r = .228, p = .000; Type II, r = .198, p = .008; Type III, r = (.324, p = .000). However, Time 2 results revealed no significant relationships between total caregiver involvement and Type I (r = .135), Type II (r = .011), or Type III (r = .113) adaptations.

**H10b** Hours of physical care relate positively to employment adaptation.

The results supported this hypothesis for Time 1, but not for Time 2. Significant relationships were evident with each adaptation type at Time 1 (Type I, r = .253, p = 000; Type II r = .250, p = 001; Type III, r = .315, p .001). However, Time 2 results indicated no significant relationship with Type I (r = .115), Type II (r = .113), or Type III (r = -.043) adaptations.

**H10c** Hours of supervision relate positively to employment adaptation.

The results partially supported this hypothesis for Time 1. Significant relationships were present with hours of supervision and Type II (r = 160, p = .035) and Type III (r = .227, p = .001) adaptations, but not with Type I adaptation (r = .078) at Time 1.

At Time 2, only Type III adaptation showed a significant relationship ($r = .343$, $p = .001$) with hours of supervision. Type I ($r = .010$) and Type II ($r = .085$) adaptations did not have a significant relationship with hours of supervision.

**Research Question 11** **How much variation in each type of employment adaptation at Time 1 and Time 2 is explained by caregiver involvement (activities and time)?**

a. total involvement
b. hours of physical care
c. hours of supervision

As in question 4, bivariate associations among the variables and each adaptation type were examined to eliminate from multivariate analyses potential explanatory factors that did not have significant associations. Stepwise multiple regression provided results to answer this research question and the related hypotheses for Time 1, Type I (maintain, but alter work) adaptation, while two-group discriminant analysis (Wilks's Method) was used to determine whether caregiver involvement could differentiate those caregivers who used Time 1, Type II (leave of absence) and Time 1, Type III (quit/retire) adaptations from those who did not.

Total caregiver involvement and hours of physical care (the only variables significantly correlated with Time 1, Type I adaptation) were used in the regression equation. However, only hours of physical care met the criteria for the equation and explained 6% ($R^2 = .064$, $p = .000$) of the variance in Type I adaptation. At Time 2, no caregiver involvement variable demonstrated a significant relationship with Type I adaptation. Table 18 contains the regression results for caregiver involvement and Type I adaptation.

**Table 18. Regression for Caregiver Involvement and Time 1, Type I Employment Adaptation**

| Variable | b | $\beta$ | T | Sig t |
|---|---|---|---|---|
| Constant | 1.494 | | 11.918 | **.000** |
| Hours of physical care | .076 | .253 | 3.925 | **.000** |
| $R^2$ | **.064** | | | |
| F | 15.403 | | | |
| p-value | **.000** | | | |
| N | 228 | | | |

Variables in equation = $p < .05$

Each involvement variable displayed significant relationships with Time 1, Type II and Time 1, Type III adaptations; thus, all were used in the discriminant analyses. Chi-square analyses of the canonical discriminant function showed significance for the overall effectiveness of the model for both Type II ($p = .001$) and Type III ($p = .000$) adaptations. The discriminant function correctly grouped nearly 66% (65.90) of the cases for Type II and almost 72% (71.56) for Type III adaptations. Correlations and contingency tables did not reveal significant variables for Type II adaptation at Time 2; thus additional study with discriminant analysis was not done. Table 19 contains the canonical discriminant functions and Table 20 includes the discriminant classification results.

**Table 19. Canonical Discriminant Functions for Caregiver Involvement Variables and Time 1, Type II and Type III Adaptations**

| | Eigen-value | Canonical Correlation | Wilks's Lambda | $\chi^2$ | DF | Sig. |
|---|---|---|---|---|---|---|
| Type II | | | | | | |
| Time 1 (N=171) | .068 | .252 | .937 | 11.039 | 1 | **.001** |
| Type III | | | | | | |
| Time 1 (N=223) | .137 | .347 | .880 | 28.229 | 2 | **.000** |

**Table 20. Discriminant Function Classification for Caregiver Involvement Variables and Time 1, Type II and Type III Adaptations**

| | | Predicted | Predicted | |
|---|---|---|---|---|
| Type II (N=171) | | | | |
| Actual Group | Cases | LOA | No LOA | |
| LOA | 44 (100%) | 16 (36.4%) | 28 (63.6%) | |
| No LOA | 129 (100%) | 31 (24.0%) | 98 (76.0%) | |
| Percent of cases correctly grouped | | | | **65.90%** |
| Type III (N=223) | | | | |
| Actual Group | Cases | Quit/Retire | No Quit or Retire | |
| Quit/Retire | 36 (100%) | 22 (61.1%) | 14 (38.9%) | |
| No Quit/Retire | 189 (100%) | 50 (26.5%) | 139 (73.5%) | |
| Percent of cases correctly grouped | | | | **71.56%** |

Only one variable (hours of supervision) showed a significant relationship with Time 2, Type III adaptation. Because there was only one involvement variable with a significant relationship to Type III adaptation, an independent t-test (two-tailed) was used to check the significance of mean differences in hours of supervision with Time 2, Type III adaptation. The independent t-test confirmed significant differences (two-tail $p = .001$) related to the hours of supervision expended by those caregivers who chose to quit or retire at Time 2 and those who did not. Table 21 presents the independent t-test outcomes for Type III adaptation at Time 2.

**Table 21. Independent t-test for Hours of Supervision and Time 1, Type III Employment Adaptation**

| Type III | Number of Cases | Mean | SD |
|---|---|---|---|
| Time 2 Quit/Retire | 16 | 12.19 | 7.61 |
| Time 2 No Quit/Retire | 83 | 5.82 | 6.26 |
| Pooled Variance Estimate | t value -3.60 | DF 97 | 2-tail probability **.001** |

Caregiver involvement offered little explanatory power for Time 1, Type I adaptation ($R^2 = .063$). The Time 1 discriminant analyses classification results were more impressive, especially for Type III adaptation (72% correct grouping). Type II adaptation (66% correct grouping) indicated less association with the caregiver involvement variables. The specific approach and discussion for each hypothesis about caregiver involvement and employment adaptation follow.

**H11a** Hours of physical care explain more variation in employment adaptation than total involvement or hours of supervision at both Time 1 and Time 2.

The results supported this hypothesis for Type I and Type II adaptations, but only partially for Type III adaptation at Time 1. Hours of physical care was the only variable to meet criteria for the regression equation; thus, it explained more variation in Type I adaptation than either total caregiver involvement or hours of supervision. However, even though hours of physical care entered the equation, it contributed little ($R^2$ = .064, p = .000) toward explaining the variation in Type I adaptation at Time 1. Similar results occurred with Type II adaptation. Hours of physical care was the only variable that met tolerance levels for entry into the discriminant equation.

However, for Type III adaptation, both hours of physical care and total caregiver involvement met the criteria for the discriminant function, indicating that both variables contributed to the differentiation of Type III adaptation at Time 1. Also, review of the standardized coefficients for the variables indicated similar results (Table 22).

**Table 22. Canonical Discriminant Function Coefficients for Caregiver Involvement Variables and Time 1, Type II and Type III Employment Adaptations**

| | Type II (N=171) | | Type III (N=223) | |
|---|---|---|---|---|
| | Unstandardized | Standardized | Unstandardized | Standardized |
| Hours of physical care | .208 | 1.000 | .107 | .541 |
| Caregiver total involvement | NA | NA | .386 | .564 |

NA Variable did not meet equation tolerance level

The hypothesis that hours of physical care would explain more variation in employment adaptation than total involvement and hours of supervision was not supported by Time 2 results. No involvement variable displayed a relationship with Type I or Type II adaptations. Hours of supervision was the only involvement variable with a significant relationship to Type III adaptation. Thus, hours of supervision explained more variation in Type III adaptation than did hours of physical care.

**Research Question 12** **Which identified key variables from questions 4, 7, and 11 are the best predictors of employment adaptation at Time 1 and Time 2?**

Type I = caregiver age, relationship to care recipient, caregiver gender, amount of family help, hours of physical care

Type II = caregiver education, co-residence now, amount of family help, hours of physical care

Type III = caregiver household income, family network, frequency of family help, total caregiver involvement, hours of physical care or caregiver education and hours of supervision)

As in Questions 4, 7, and 11, stepwise multiple regression and discriminant analysis provided results to answer this research question and its hypotheses. The variables selected for the stepwise regression to analyze Time 1, Type I adaptation were those significant from the three preceding regressions (caregiver age and relationship to the care recipient, care recipient gender, amount of family help, hours of physical care). Three variables (caregiver age, hours of physical care, amount of family help) explained 19% ($R^2$ = .186), p = .000) of the variance in Type I adaptation. Table 23 contains the regression outcomes.

**Table 23. Regression of Selected Significant Variables and Time 1, Type I Adaptation**

| Variable | b | $\beta$ | T | Sig t |
|---|---|---|---|---|
| Constant | 3.215 | | 7.047 | **.000** |
| Caregiver age | -.037 | -.283 | -4.549 | **.000** |
| Hours of physical care | .064 | .212 | 3.478 | **.001** |
| Amount of family help | .075 | .160 | 2.570 | **.011** |
| $R^2$ | **.186** | | | |
| F | 16.892 | | | |
| p-value | **.000** | | | |
| N | 210 | | | |

Variables in equation = $p < .05$

Backward regression, using the same variables as in the stepwise regression of selected significant variables, was used to ascertain whether an alternate approach to analysis would generate different outcomes. With backward regression, all variables initially enter the equation and then are systematically removed depending on pre-established removal criteria (Norusis, 1990b). In contrast to the stepwise model, backward regression (Table 24) produced an equation that included all the variables (caregiver age, family relationship, hours of physical care, amount of family help and care recipient gender). This combination of variables and method produced a modest increase in the amount of Type I variance explained ($R^2 = .229$).

**Table 24. Backward Regression of Selected Significant Variables and Time 1, Type I Adaptation**

| Variable | b | $\beta$ | T | Sig t |
|---|---|---|---|---|
| Constant | 2.655 | | 4.682 | **.000** |
| Hours of physical care | .057 | .190 | 3.154 | **.002** |
| Spouse relationship | 1.445 | .416 | 3.055 | **.003** |
| Amount of family help | .082 | .175 | 2.670 | **.008** |
| Caregiver age | -.039 | -.297 | -3.911 | **.000** |
| Care recipient gender | -.700 | -.219 | -2.392 | **.018** |
| Daughter relationship | .881 | .272 | 2.737 | **.007** |
| $R^2$ | **.229** | | | |
| F | 10.841 | | | |
| p-value | **.000** | | | |
| N | 210 | | | |

Variables out of equation = p >.10

Previous discriminant analyses results provided the significant variables (caregiver education, co-residence now, amount of family help, hours of physical care) for additional two-group discriminant analysis of Time 1, Type II adaptation. This combination of variables produced a model with overall significance (p = .001). The discriminant function for the selected variables and Type II adaptation correctly grouped 64% (64.16) of the cases.

For Time 1, Type III investigation, significant variables from the previous Type III discriminant equations (family network, frequency of family help, total caregiver involvement, hours of physical care) and the independent t-test (caregiver household

income) were used in the discriminant analysis. These variables generated a significant overall equation (p = .000) and correctly classified 75% (75.25%) of the cases.

Table 25 contains the canonical discriminant functions and Table 26 includes the classification outcomes for selected significant variables and Time 1, Type II and Type III adaptations.

**Table 25. Canonical Discriminant Functions for Selected Significant Variables and Time 1, Type II and Type III Adaptations**

| | Eigen-value | Canonical Correlation | Wilks's Lambda | $\chi^2$ | DF | Sig. |
|---|---|---|---|---|---|---|
| Type II | | | | | | |
| Time 1 (N=173) | .124 | .332 | .890 | 19.776 | 4 | **.001** |
| Type III | | | | | | |
| Time 1 (N=198) | .178 | .389 | .849 | 31.764 | 5 | **.000** |

**Table 26. Discriminant Function Classification for Selected Significant Variables and Time 1, Type II and Type III Adaptations**

| | | Predicted | Predicted | |
|---|---|---|---|---|
| Type II (N=173) | | | | |
| Actual Group | Cases | LOA | No LOA | |
| LOA | 44 (100%) | 22 (50.0%) | 22 (50.0%) | |
| No LOA | 129 (100%) | 40 (31.0%) | 89 (69.0%) | |
| Percent of cases correctly grouped | | | | **64.16%** |
| Type III (N=198) | | | | |
| Actual Group | Cases | Quit/Retire | No Quit or Retire | |
| Quit/Retire | 35 (100%) | 24 (68.6%) | 11 (31.4%) | |
| No Quit/Retire | 163 (100%) | 38 (23.3%) | 125 (76.7%) | |
| Percent of cases correctly grouped | | | | **75.25%** |

In summary, selected significant variables (derived from the separate Time 1 regression and discriminant analyses results or the independent t-test outcome) for caregiver/care recipient characteristics, family support, and caregiver involvement offered significant explanations for each adaptation type. The combination of significant variables differed for each adaptation type. Regardless of the variable mix, the outcomes suggest more explanation and differentiation power for Type III adaptation (75% correct grouping) than either Type I (stepwise $R^2$ =.186; backward $R^2$ = .229) or Type II (64% correct grouping) adaptations at Time 1.

At Time 2, there were no significant relationships identified with any of the caregiver/care recipient, family support, or caregiver involvement variables and Type I or Type II adaptations. Thus, additional analyses were not indicated for those adaptation types.

However, two variables (caregiver education and hours of supervision) did have significant relationships with Time 2, Type III adaptation and were used in two-group discriminant analysis. The two variables produced a model with a significant overall equation ($p = .001$) and correctly classified almost 75% (74.75%) of the cases.

Table 27 contains the canonical discriminant functions and Table 28 the classification outcomes for selected significant variables and Time 2, Type III adaptation.

**Table 27. Canonical Discriminant Functions for Selected Significant Variables and Time 2, Type III Adaptation**

| | Eigen-value | Canonical Correlation | Wilks's Lambda | $\chi^2$ | DF | Sig. |
|---|---|---|---|---|---|---|
| Type III | | | | | | |
| Time 1 (N=99) | .171 | .382 | .854 | 15.170 | 2 | **.001** |

**Table 28. Discriminant Function Classification for Selected Significant Variables and Time 2, Type III Adaptation**

| | | Predicted | Predicted | |
|---|---|---|---|---|
| Type III (N=99) | | | | |
| Actual Group | Cases | Quit/Retire | No Quit or Retire | |
| Quit/Retire | 16 (100%) | 5 (31.3%) | 11 (68.8%) | |
| No Quit/Retire | 83 (100%) | 63 (75.9%) | 20 (24.1%) | |
| Percent of cases correctly grouped | | | | **74.75%** |

The specific approach and discussion for each hypothesis about key caregiver/care recipient, family support, and caregiver involvement variables and employment adaptation follow.

**H12a** The hours of physical care are the best predictors of each type of employment adaptation at Time 1 and Time 2.

The results supported this hypothesis for Type II, but not Type I or Type III adaptations at Time 1. The discriminant analysis showed that the standardized canonical coefficient (Table 29) for hours of physical care (.659) was higher than for the other three variables in the equation (caregiver education, -.463; co-residence now, .304; and amount of family help, -.359).

However, the stepwise regression analysis for Time 1, Type I adaptation (Table 23) indicated hours of physical care did not have the highest beta, but the second highest of the three variables in the equation (caregiver age, -.283; hours of physical care, .212; and amount of family help, .160). Likewise, the backward regression (Table 24) showed that hours of physical care did not explain relatively more variation than the other variables in the equation (it was fourth highest of the five variables).

Similarly, discriminant analysis for Time 1, Type III adaptation displayed hours of physical care as having the second highest standardized coefficient of the five variables in the equation (Table 29). While hours of physical care was a good predictor of Time 1, Type I and Type III adaptations (coefficient = .429), the best predictor was total caregiver involvement (coefficient = .536). Table 29 contains the unstandardized and standardized canonical discriminant function characteristics for assorted variables and Time 1, Type II and Type III adaptations.

**Table 29. Canonical Discriminant Function Coefficients for Selected Significant Variables and Time 1, Type II and Type III Adaptations**

| | Type II (N=173) | | Type III (N=198) | |
|---|---|---|---|---|
| | Unstand-ardized | Standard-ized | Unstand-ardized | Standard-ized |
| Caregiver education | -.194 | -.463 | NA | NA |
| Co-residence now | .640 | .304 | NA | NA |
| Amount of family help | -.983 | -.359 | NA | NA |
| Hours of physical care | .137 | .659 | .826 | .429 |
| Caregiver income | NA | NA | -.176 | -.300 |
| Family members within 50 miles | NA | NA | .150 | .323 |
| Frequency of family help | NA | NA | -.444 | -.212 |
| Total caregiver in-volvement | NA | NA | .363 | .536 |

Note: NA Variable not significant for adaptation type (based on previous discriminant equations).

At Time 2, there were no significant relationships with any of the variables and Type I or Type II adaptations. Thus, additional analyses were not indicated for the caregiver/care recipient characteristics, family support, or involvement variables. While there were significant relationships with Time 2, Type III adaptation, and subsequent analysis, the variables did not include the hours of physical care (Table 30). Table 30 contains the unstandardized and standardized canonical discriminant function coefficients for selected significant variables and Time 2, Type III adaptation.

**Table 30. Canonical Discriminant Function Coefficients for Selected Significant Variables and Time 2, Type III Adaptation**

| | Type III (N=99) Unstandardized | Type III (N=99) Standardized |
|---|---|---|
| Caregiver education | -.206 | -.473 |
| Hours of supervision | .129 | .838 |

**H12b** The amount of family help at both Time 1 and Time 2 is less effective in predicting employment adaptation than are the other variables in the equation.

The results supported this hypothesis for Time 1, Type I and Type III adaptations, but not for Time 1, Type II adaptation. In the stepwise regression equation for Type I adaptation (Table 23), the amount of family support had a lower beta (.160) than the other variables in the equation, suggesting it contributed less to explain variation in Type I adaptation at Time 1 than did caregiver age ($\beta$ = -.283) and the hours of physical care ($\beta$ = .212). Similarly, the backward regression outcomes showed the amount of family support as having the lowest beta of the six variables in the equation.

The analysis for Time 1, Type III adaptation did not include amount of family help (no previous significant relationship), thus implying that the variable contributes little to predicting Type III employment adaptation.

However, the standardized canonical coefficient (Table 29) for amount of family help was the third highest (-.359) of the four variables in the equation to differentiate Time 1, Type II adaptation. While the results indicated the variable was relatively less effective than two of the variables (hours of physical care coefficient = .659 and

caregiver education coefficient = -.463), co-residence now (coefficient = .304) offered the smallest relative contribution to the discriminant function.

At Time 2, there were no significant relationships with any of the variables and Type I or Type II adaptations. While there were significant relationships with two of the variables and Type III adaptation, they did not include the amount of family help. This suggests that the amount of family help offered little explanatory power for Type I, Type II, or Type III adaptations at Time 2.

**H12c** Caregiver and care recipient characteristics explain more variation in employment adaptation than characteristics of caregiver involvement.

The results supported this hypothesis for Time 1, Type I adaptation, but not for Time 1, Type II or Type III, or Time 2, Type III adaptations. The stepwise regression results (Table 23) indicated caregiver age ($\beta$ = -.283) contributed relatively more than the other two variables (hours of physical care, $\beta$ = .212; amount of family help, $\beta$ = .160) to explain the variation in Type I adaptation at Time 1. Similarly, when backward regression analysis was used (Table 24), caregiver/care recipient characteristics (family relationship, caregiver age, and care recipient gender) explained relatively more of the variation in Type I adaptation than did the involvement variable (hours of physical care).

However, for Time 1, Type II adaptation, hours of physical care had the highest standardized canonical coefficient (.659) of the four variables in the equation (Table 29). The lower standardized canonical discriminant coefficients of the two caregiver/care recipient characteristic variables in the equation (caregiver education = -.463; co-residence

now = .304) suggest they offered relatively less to the discriminant function than did an involvement variable.

For Time 1, Type III adaptation, total caregiver involvement had the highest standardized canonical coefficient (.536), and hours of physical care had the next highest (.429) of the five variables in the discriminant equation (Table 28). This suggests that involvement variables had a relatively greater contribution to the discriminant function than did the only caregiver/care recipient variable to enter the equation (caregiver household income = -.300).

At Time 2, there were no significant relationships with any of the variables and Type I or Type II adaptations. This suggests that both caregiver/care recipient characteristics and caregiver involvement offered little contribution to explain employment adaptation.

However, Time 2, Type III adaptation displayed a significant relationship with a caregiver characteristic variable (education) and an involvement variable (hours of supervision). Discriminant analysis produced standardized canonical coefficients for the variables (education = -.473; hours of supervision = .838) that suggest that an involvement variable contributed relatively more to the equation than did the caregiver characteristic variable. Thus, the results do not support the hypothesis for Time 2, Type III adaptation.

# CHAPTER V

## Discussion

This section includes a summary of study findings, followed by discussion and implications for practice, policy, and research. The results of the analyses are organized by employment adaptation type and the relationship of each (Type I, Type II, Type III) with the groups of independent variables. Outcomes at the .05 level were considered significant.

The study, encompassing two time periods, broadened the scope of the usual employment and family caregiving literature in several ways. First, it focused on eldercare, not childcare, and employment. While substantial research about childcare and employment exists (Friedman, 1988; Kola & Dunkle, 1988), the study of the interaction of eldercare and employed caregivers is a relatively new phenomenon (Brody, Kleban, Johnsen, Hoffman, & Schoonover, 1987).

Second, eldercare and employment adaptation were considered to be dynamic, not static, processes that were likely to change over time. Existing longitudinal studies (Given, Stommel, & Lin, 1991, Robinson & Thurnher, 1979; Stoller & Pugliesi, 1989b; Zarit, Todd, & Zarit, 1986) present a complex picture of change.

Finally, the researcher incorporated potential explanatory factors (caregiver/care recipient characteristics, family support, and caregiver involvement) to assess their

influence on caregiver employment adaptations. The majority of existing family caregiver and employment literature is not only cross-sectional in design, but also, with some exceptions (Neal, Chapman, Ingersoll-Dayton, Emlen, & Boise, 1990), descriptive and without an attempt to predict employment adaptation based on the presence of certain variables.

**Summary of Findings**

This study investigated the influence of three blocks of variables (caregiver/care recipient characteristics, family support, and caregiver involvement) on using short-term employment adjustments, taking a leave of absence, and quitting or retiring from work in order to provide eldercare. Two time periods, inception of the eldercare role and three months later, were studied.

At inception of the eldercare role, the caregiver's age and relationship to the care recipient, whether she lived with the care recipient, the hours of physical care, and the care recipient's gender were likely to influence the short-term employment adjustments made by the caregiver to meet family obligations. The family support characteristics did not seem to have a strong relationship with the temporary work alterations used by the caregiver. When the significant variables from each block were studied together, three variables, caregiver age, hours of physical care, and the amount of family help, were the most useful in describing the caregiver more likely to use short-term work adjustments in order to provide care.

Caregivers who chose to take a leave of absence from their employment at inception of the eldercare role were influenced by slightly different factors. It appears

that a leave of absence may be more likely to occur with caregivers who have less education, live with their care recipient, and provide more hours of physical care than do those who choose to continue employment. The amount of family help provided to either the caregiver or the care recipient exerted a limited effect on the caregiver's decision to take a leave of absence. However, when the four variables (caregiver education, co-residence, amount of family help, and hours of physical care) were studied together, they each were important in describing the caregiver likely to use a leave of absence in order to meet demands of eldercare.

Finally, choosing to quit or retire from the workforce at inception of the eldercare role seems more likely to be the decision of a caregiver with a lower household income and who provides higher physical care hours. The family care network number, and the amount and frequency of family help appeared to have little influence on the decision of the caregiver to quit or retire. Nonetheless, when the family variables, household income, and hours of physical care were studied as a group, each was important in predicting caregivers more likely to quit or retire in order to provide care.

The results for the second time period of study were very different. Three months after assuming the eldercare role, no caregiver or care recipient characteristic, family support, or caregiver involvement variable influenced the caregiver's decision to make short-term work adjustments or to take a leave of absence from her employment. However, the caregiver who chose to quit or retire three months after assuming the eldercare role was more likely to be less educated and to provide more hours of supervision than did those caregivers who continued employment. A complete summary

of results for both inception of the eldercare role (Time 1), and three months later (Time 2) follows.

Time 1

*Type I (maintain, but alter work) Employment Adaptation*

Time 1 results indicated seven caregiver/care recipient variables (caregiver age, household income, education, relationship to the care recipient, current employment status, co-residence now, and care recipient gender) had significant relationships with Type I adaptation. Four variables (caregiver marital status, occupation, co-residence before, and care recipient age) showed no significant relationship with Time 1, Type I adaptation.

In order to assess the relative influence of the significant caregiver/care recipient characteristics on Type I adaptation, a regression analysis was done. Employment status, although significant, was not included in the analysis so that the impact of the remaining significant caregiver/care recipient characteristics could be calculated. Three variables, (caregiver age, relationship to care recipient, and care recipient gender), explained 19% ($R^2$ = .191) of the variance in Time 1, Type I adaptation.

From the group of three family variables (amount of family help, frequency of aid, and family network), only the amount of family help related significantly to Time 1, Type I adaptation. Although just one variable displayed a significant relationship with Time 1, Type I adaptation, all family variables were used in a regression analysis because of family's importance in the conceptual model for the study. As bivariate

correlations suggested, amount of family help was the sole variable to enter the equation and explained just 5% ($R^2$ = .047) of the variance in Type I adaptation.

Two involvement variables (total caregiver involvement and hours of physical care) displayed a significant correlation with Type I adaptation, but one (hours of supervision) did not. Of the significant variables, only hours of physical care met criteria to enter the subsequent regression equation and accounted for 6% ($R^2$ = .064) of the variance in Time 1, Type I adaptation.

*Type II (leave of absence) Employment Adaptation*

For Time 1, Type II adaptation, only three of the eleven caregiver/care recipient characteristic variables (caregiver education, current employment status, and co-residence now) displayed significant relationships. As with Type I adaptation, employment status was not used in subsequent multivariate analysis. The other significant variables (caregiver education and co-residence now) contributed to a significant discriminant function and correctly grouped almost 59% of the cases. However, that percentage is less than the identified practical significance (60%) for the study.

Although just one family variable (amount of family help) showed significance with Time 1, Type II adaptation, as with Time 1, Type I analyses, all were used in the discriminant equation because of family's importance in the conceptual model for the study. However, similar to Type I outcomes, only one variable, the amount of family help, contributed to the discriminant function and correctly grouped 55% of the cases. The low percentage of appropriate classification is explained by the discriminant model's overall ineffectiveness with family variables.

Each involvement variable (total caregiver involvement, hours of physical care, hours of supervision) demonstrated a significant relationship with Time I, Type II adaptation. Nonetheless, only one (hours of physical care) contributed to the discriminant function, produced a significant model, and correctly grouped 66% of the cases. Thus, hours of physical care appears to be a more effective variable to predict Type II employment adaptation when compared with the amount of family help.

*Type III (quit/retire) Employment Adaptation*

Only one of the eleven caregiver/care recipient characteristics (caregiver household income) showed significance with Time 1, Type III employment adaptation. An independent t-test confirmed significant differences related to the income of those caregivers who chose to quit or retire (lower mean incomes) and those who did not.

Two of the three family variables (family network and frequency of family aid) showed significance with Time 1, Type III adaptation. However, as with Type II adaptation, the variables did not generate a discriminant model with overall significance. Even though both variables contributed to the discriminant function, they correctly grouped only 57% of the cases, not much better than the 50% expected by chance alone.

As with Type II adaptation, each involvement variable displayed significance with Type III adaptation. However, only two (total caregiver involvement, hours of physical care) generated an effective model, contributed to the discriminant function, and induced improved classification results (72% correct grouping).

Time 2

*All Adaptation Types*

Time 2 results for Type I and Type II adaptations were inconclusive. No caregiver/care recipient characteristic, family support, or caregiver involvement variable predicted Type I or Type II adaptations. Also, no family support variable predicted Type III adaptation.

However, a caregiver/care recipient variable (caregiver education) and an involvement variable (hours of supervision) showed significant relationships with Type III adaptation. Independent t-tests confirmed significant differences for each variable and Type III adaptation. Caregivers who chose to quit or retire at Time 2 had a lower mean educational level and provided more hours of care recipient supervision than those caregivers who continued their employment.

Compatibility with the Conceptual Model

The conceptual model guiding the study placed equivalent emphasis on each group of independent variables and their influence on employment adaptation. Outcomes of statistical analyses related to Time 1, Type I adaptation did not support the model, however. At Time 1, caregiver/care recipient characteristics ($R^2$ = .191) evidenced stronger predictive power than either family support ($R^2$ = .047) or caregiver involvement variables ($R^2$ = .064). This outcome was incompatible with the preliminary conceptual model (Figure 1, p. 38).

Type II results were more congruent with the model than Time 1, Type I effects. Although differences existed between the variable groups, they were less dramatic than

findings for Time 1, Type I adaptation. For Time 1, Type II adaptation, the caregiver involvement variables generated the highest correct grouping of cases (66%). Caregiver/care recipient characteristics were next with 59% correct, while the family support variables had the weakest outcomes (55% correct grouping).

Time 1, Type III differences, as with Time 1, Type I contrasts, were incompatible with the preliminary conceptual model. Classification variations for Time 1, Type III adaptation, based on the three groups of independent variables, were less dissimilar than findings for Time 1, Type I, but more diverse than Time 1, Type II adaptation. Caregiver involvement generated the best (72% correct) grouping, family support produced the next highest (57% correct), while caregiver/care recipient variables had the weakest outcome (only one variable showed significance).

The Time 2 data, particularly for Type I and Type II adaptations, did not support either the expectations for the study or the appropriateness of the conceptual model. For Type I and Type II adaptations, no variable from any independent group met criteria to enter the regression equation. While Type III adaptation did have improved outcomes, variables from only two of the independent groups (caregiver/care recipient characteristics and caregiver involvement) showed significance. The third variable group (family support) showed no relationship with Type III adaptation.

Perhaps the general incompatibility of the model to employment adaptation at both time periods represents the uniqueness of each care situation. Multiple factors influence caregivers in varied ways and also are likely to change over time. The eldercare process and its interaction with work and family may not lend itself to a distinct conceptual model with equivalently influential variables. A model that includes all variables and

their significance (or lack) with each adaptation type and over time may offer more meaningful information about the unique influence each has on employment adaptation. A transitional conceptual model depicts key outcomes of the present study (Figure 8).

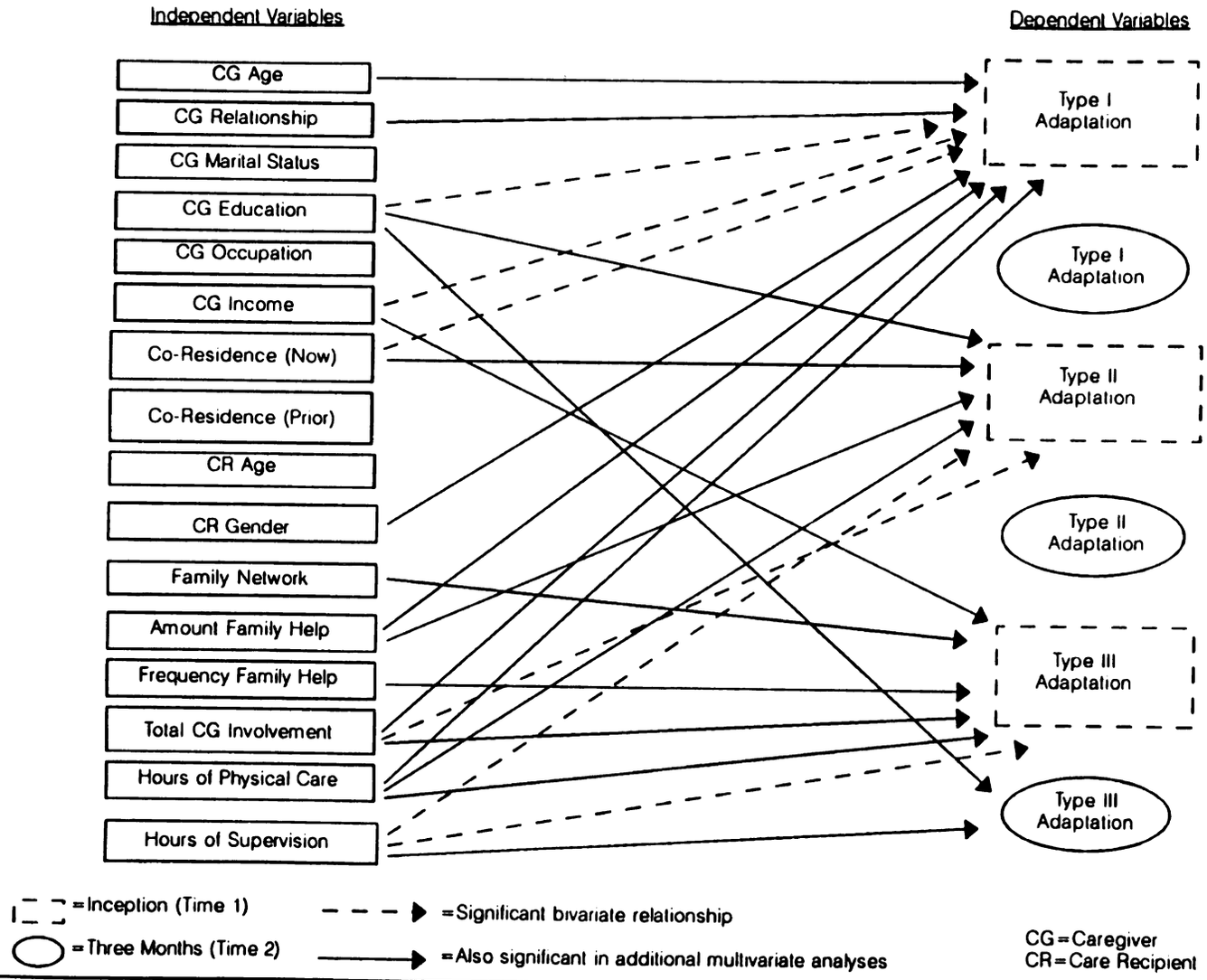



**Figure 8. Transitional Conceptual Model for Family Eldercare & Employment Adaptations**

Interaction of the Variable Groups

In the study, separate regression and discriminant analyses, plus independent t-tests examined the influence of three groups of independent variables (caregiver/care recipient characteristics, family support, and caregiver involvement) on each employment adaptation type. Significant variables from those procedures provided the independent variable list for a final query about their relative influence on employment adaptation. This approach incorporated the interaction of the independent variables that is central to Human Ecology theory and the employment adaptation outcomes that are important to Choice and Exchange theory.

In the final Time 1, Type I regression equation, three variables (one from each independent variable group) explained about 19% ($R^2$ = .186) of the variance for Type I adaptation. While caregiver age ($\beta$ = -.283) made the highest relative contribution to the equation, it was closely followed by hours of physical care ($\beta$ = .212). The amount of family help ($\beta$ = .160) offered the least explaining power for the equation.

When a backward regression (out = $p > .10$) was used with the same variables to see how results might differ, the $R^2$ improved slightly ($R^2$ = .229). The final equation included family relationship and care recipient gender as well as the variables that entered the stepwise version. In the backward regression, the caregiver/care recipient variables exhibited the highest betas (spouse = .416, caregiver age = -.297, daughter = .272, care recipient age = -.219). The amount of family help and hours of physical care had the lowest betas (.175 and .190, respectively). Thus, it appears that some caregiver/care recipient characteristics, using either regression approach, were

relatively more influential in predicting Type I employment adaptation than the other variable groups.

Time 1, Type II outcomes of separate discriminant analyses also indicated that variables from each independent group were important in predicting Type II adaptation. The combined significant variables contributed to an effective discriminant model for Type II adaptation and correctly classified 64% of the cases. The best predictor variable, hours of physical care, had the highest standardized canonical discriminant function coefficient (.659) of the four variables in the equation (caregiver education = -.463, amount of family help = -.359, co-residence now = .304).

Consistent with Time 1, Type I and Type II adaptations, Type III adaptation outcomes included significant variables from the three independent variable groups. Of the five variables in the final discriminant equation, total caregiver involvement had the highest standardized canonical discriminant function coefficient (.536). The other variables, hours of physical care (.429), family members within 50 miles (.323), caregiver income (-.300), and frequency of family help (-.212) offered relatively less to the discriminant function.

The absence of significant relationships with any variable and Time 2, Type I and Type II adaptations undoubtedly depict disappointing Time 2 results. Only caregiver education and hours of supervision showed significant relationships with Time 2, Type III adaptation. However, those variables, representing two of the three groups of independent variables (caregiver/care recipient characteristics and caregiver involvement) contributed to the discriminant function and generated 75% correct classification results.

The outcomes from the final analyses of significant variables from each independent group and their influence on the adaptation types led to the study's concluding conceptual model. This model displays how, in relation to each other and over time, the variables influenced employment adaptation. Figure 9 shows the concluding conceptual model.

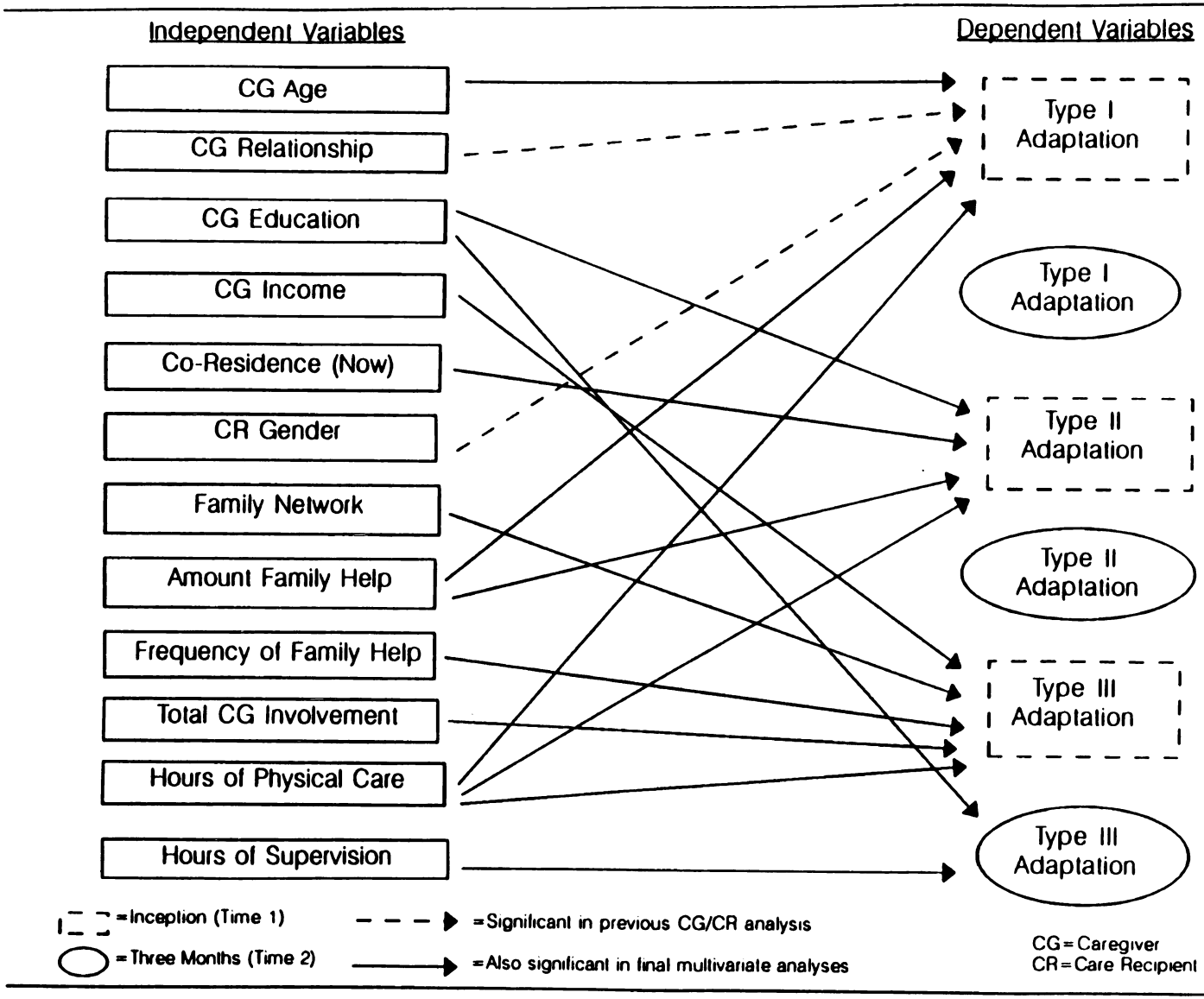



**Figure 9. Concluding Conceptual Model for Family Eldercare & Employment Adaptations**

In spite of the original conceptual model's imperfect fit with study outcomes, the ecological approach to the study was important. The alteration of the model to reflect the perceived reality of the results illustrates adaptation, a basic tenet of ecological theory (Bristor, 1990). Also, the study provided a "holistic way of viewing human systems as ecosystems with components bound together as functioning wholes in dynamic interaction with the environment" (Andrews, Bubolz, & Paolucci; 1980, p. 42).

Illness or disability is not just an individual challenge, it involves the family caregiver, other family members, the employer, and ultimately society. Family caregivers respond, change, develop, act on information, and modify their environments, both to meet eldercare and employment responsibilities and also to manage other family and societal roles. Caregiver decisions, made in an environmental context, are used to attain individual and family goals (Bubolz & Sontag, in press).

## Conclusions

The study shows that employed family caregivers used various employment adaptations to balance their work and family obligations. However, the particular predictor variables differed in their influence on the adaptation types. Diverse factors influenced caregiver decisions about both eldercare involvement and employment and, in turn, affected both time periods.

The present study revealed some unanticipated results. The immediacy of the influence of acquiring the eldercare role on the employment adaptation of women represents a major finding. It was expected that increased employment adaptation (all types) would occur over time, specifically from Time 1 to Time 2. However, caregivers

did not wait until Time 2 to make adjustments. The percentage of caregivers who reported full-time or part-time employment prior to assuming the caregiver role related substantial changes at Time 1 (an average of 27 days after screening for entry into the study). Perhaps the Time 1 change (compared with prior employment) occurred in this retrospective study because the caregiver had no specific time frame to consider when responding to the question about employment prior to caregiving. Alternatively, the care for a recently physically impaired elderly relative may create a sudden need for a family member's employment adaptation; thus, the caregiver decision to adapt work in order to contribute the required services.

Regardless of Time 1 contrasts with reported prior (before assuming the caregiver role) employment, contrary to expectations, Time 2 changes showed no significant differences in the expected direction (increased accommodation) for Type I, Type II, or Type III employment adaptations. Instead there were significant changes with Type I and Type II adaptations (less at Time 2) and there were no differences between the time periods with Type III adaptation. Perhaps this outcome represents a return to the caregivers' balance of work and family obligations that existed before assuming the eldercare role. It also may mean the caregiver is adapting to the eldercare role so successfully, she finds it less necessary to adapt her employment. Clearly, the level of Time 1, Type I adaptation (maintain, but alter work) did not influence the use of either Time 2, Type II (leave of absence) or Type III (quit/retire) adaptations.

While the absence of significant increased employment adaptation at Time 2 may be due to the considerable adaptation that occurred immediately after assuming the eldercare role, it also may reflect the study sample. A review of the reasons for the

decline in sample size at Time 2 reveals that 40 (17.9%) care recipients no longer required care at Time 2. Some care recipients, because they were physically, not mentally impaired, likely had conditions amenable to improvement through physical therapy or some other rehabilitative method.

In addition, 25 (11.2%) care recipients expired and four (1.8%) were either hospitalized or institutionalized at Time 2. Thus, some care recipients who presumably had high care demands (hence, more likely to influence employment adaptation) were no longer in the study. Conceivably, the Time 2 decline in employment adaptation may reverse at later periods of the core study (the complete study includes 6 time intervals, 3 months apart). Two snapshots in time (Time 1 and Time 2), although better than a true cross-sectional design, do little to assess the daily, weekly, monthly, or yearly adjustments likely to be part of the eldercare process.

As noted, existing longitudinal studies found caregiving to be a complex process that changes over time. Robinson and Thurnher (1979), through their five-year qualitative study of adult children and their aging parents, found that the process of eldercare included a series of phases. Periods of increased caregiver tension, anxiety, and feelings of restriction characterized these stages. While the Robinson and Thurnher study did not address caregiver employment issues, it is conceivable that similar patterns related to work may emerge and trigger increased adaptation. Caregiving is dynamic, not static; thus, intervals of varied intensity of adaptation may be representative of the process.

A second unexpected study outcome is the negligible influence family variables exerted on employment adaptation at either time period. One possible explanation is the

measurement of family involvement. The instrument used to assess the frequency of family help had an acceptable alpha (.69). However, the tool utilized to learn the amount of family help may be less reliable. For example, the caregiver was asked to indicate the amount of help received from each network member. There may be no relationship between the amount of reported help from family member #1, from member #2, from member #3, and so on. Thus, the instrument may be less useful for obtaining important information about the family.

Also, the self-report method of gathering information used with the core study, provides subjective, not objective data. Caregivers may vary in how they interpret the amount and frequency of help they receive from family members. Their assessment may be clouded by the way they perceive the family member in question. For example, a positive relationship may influence the caregiver to report substantial and frequent help from a family member whether it is objectively true or not. Conversely, the reverse situation also may occur. A negative relationship may sway the caregiver to assess the frequency and amount of help as being poor, while in actuality, the opposite may be true. The caregiver's perception is her reality.

Former family relationships, values, structure, and patterns of care or mutual support also may influence the involvement (or its lack) of network members with eldercare. Family care is a life cycle event, beginning with childcare (for most families) and ending with eldercare. A caregiver role for one individual may be sustained through varied family stages. Consequently, substantial eldercare commitment from the extended family may come only when the primary caregiver can no longer manage to provide

continued care. Studies show that one family member, usually a woman, provides the most care (Finley, 1989; Horowitz, 1985).

Throughout the care situation, costs and exchanges occur. The caregiver's interpretation of the costs and benefits of eldercare and/or employment adaptation determines whether or not either activity is seen as a problem. Walker, Martin, and Jones (1992) found that the costs of caregiving for daughters are reduced when there is a good relationship with their relative, if the care recipient lives in separate housing, and if the care recipient has fewer needs. While the present study included review of co-residence and caregiver involvement, it did not investigate the quality of the care-giver/care recipient relationship or caregiver burden.

Young and Kahana (1989) found employment to be a significant predictor of adverse reactions (costs) during the caregiving period. Other researchers reported emotional strain, restrictions on time and freedom, and economic hardships (Buglass, 1989; Horowitz, 1985), as well as physical and mental exhaustion (Hooyman & Ryan, 1987).

Another probable eldercare cost encompasses the hours of care expended by the caregiver. Care hours for the present study included separate categories for physical care and supervision. While the literature reports care hours without differentiating care rendered, studies document the consequences of those hours (Brody, Kleban, Johnsen, Hoffman, & Schoonover, 1987; Scharlach, 1989). For example, the research findings of Brody, Kleban, Johnsen, Hoffman, and Schoonover (1987) suggested that caregivers providing about 38 care hours per week were more likely to quit employment than caregivers with less time committed to care.

In the present study, there were significant positive correlations with both hours of physical care (about 26 hours/week) and hours of supervision (about 49 hours/week) and Time 1, Type II adaptation (leave of absence) and Time 1, Type III (quit/retire) adaptation. A stronger relationship with hours of supervision (about 51 hours/week) existed with Time 2, Type III adaptation. Discriminant analysis showed that hours of supervision (along with caregiver education) correctly grouped almost 75% of Time 2, Type III cases.

Additionally, work days off without pay (a variable in the index of Type I adaptation) can be a caregiver cost. However, the measure may be biased because of the caregiver's occupation and employment rank. For example, a professional or salaried employee may take a day off for eldercare without losing compensation (more schedule flexibility), while an hourly employee probably will not have that option.

The same situation may occur with Type II (leave of absence) adaptation. Perhaps the leave is paid, but it may not be. As with Type I adaptation, a professional or salaried caregiver may have more options related to Type II adaptation than one who is an hourly employee. The prevalent work environment, policies, and procedures affecting work and family issues are not known for the study sample. In general, some employers have responded to family needs in the workplace by adjusting policies, benefits, or services (Buglass, 1989; Fernandez, 1990; Kola & Dunkle, 1988; Scharlach, Lowe, & Schneider, 1991), while others have not.

Consistent with other studies (Archbold, 1983, Scharlach & Boyd, 1989, Walker, Martin, & Jones, 1992), caregivers at both time periods reported disruption with their lives and daily activities. In time, most caregivers adjust to their eldercare role, but the

eventual equilibrium shifts with the care recipient's next period of change. In this study, counter to expectations, the adjustment included less employment adaptation at Time 2 than at Time 1. However, adaptation (regardless of the form) provides needed stabilization for the family and the caregiver with multiple employment and family obligations.

In addition to the costs that conflicting work and family obligations may create, some researchers report benefits for employed caregivers. Enright and Friss (1987) related that employed caregivers of brain-impaired adults found work made their caregiving obligations easier. Researchers also reported that, for some caregivers, employment provided a psychological release and improved caregiver well-being (Barnes, Given, & Given, 1991; Brody & Schoonover, 1986; Enright & Friss, 1987; Stoller & Pugliesi, 1989a).

Thus, employment may provide not only respite from family obligations, but it may also generate feelings of self-esteem because of job related knowledge and expertise. In contrast, caregivers may lack the needed skills and competencies for some eldercare tasks and, as a result, experience feelings of inadequacy. Caregivers frequently are unprepared for the management of conditions and administration of treatments formerly controlled in an acute care setting. It is possible that people continue working in order to limit the time available for caring.

Further, varied reactions to caregiving and employment adaptation may relate to socioeconomic status, family values, and personal and family goals. The flow of resources (monetary, education, culture) and information (perception, values,

competencies) leads the caregiver to the outcome, decisions about family care involvement and employment adaptation.

## Implications

Consistent with other studies (Creedon, 1987; Neal, Chapman, Ingersoll-Dayton, Emlen, & Boise, 1990; Scharlach & Boyd, 1989; Stone & Short, 1990), data from the present research showed that employment adaptation occurs for employed caregivers. While the present study outcomes indicated less employment adaptive behavior at Time 2 than at Time 1, adaptations of all types still were evident. Also, this finding may illustrate that the caregiver has truly "adapted" to the eldercare role, made lifestyle modifications, and no longer finds it necessary to alter employment. However, the long-term effect of eldercare may influence continued fluctuation of employment adaptation. Thus, important ramifications for practice, policy, and additional research become evident.

### Implications for Practice

Implications for employee assistance personnel, family educators, and family professionals follow. In the workplace, persons who work directly with employee assistance programs (EAP) may need to augment their own knowledge of gerontology as well as increase their understanding of employed caregiver issues and possible solutions. EAP staff should anticipate the immediacy of employee's responses to a family care crisis and be prepared for potentially rapid involvement. Long term measures also may be essential. In addition, EAP personnel may co-ordinate caregiver

fairs to highlight formal resources available in the community or offer educational sessions dealing with key issues.

Similarly, EAP staff may sponsor ongoing programs that increase management's realization of possible altered work productivity, utilization of caretaker benefits (family leave), and related costs because of conflicting work and eldercare demands. With enhanced appreciation of the potential influence family eldercare has on employment, managers may be encouraged to seek resolutions for work/family problems. A more responsive and flexible work environment for the family caregiver may evolve.

Some organizations have recognized and responded to eldercare's significance for their company. These pioneers for work-friendly environments for employees with family care responsibilities include: Travelers Insurance Companies, Bank of America, IBM, and Phillip Morris (Scharlach, Lowe, & Schneider, 1991); Southwestern Bell and Remington Products (Kola & Dunkle, 1988); Aetna Life and Casualty, Marriott (Buglass, 1989); and Chase Manhattan (Fernandez, 1990).

A second practice implication involves family educators in academic settings. The educational preparation of family professionals requires content about family eldercare and its possible ramifications (employment and others). While persons directly involved in the care situation are cognizant of the costs (and the benefits), others may not be. As demographic and societal changes continue, work/family interactions will be increasingly important considerations in curriculum decisions.

Knowledgeable instructors also should increase societal awareness of family eldercare and its implications to the employed caregiver juggling multiple roles. Forums on key issues (eldercare, employee needs, decision-making, values) offer one way to

reach a large audience. Persons attending such sessions may develop enhanced understanding and support for co-workers coping with the dual work and family roles.

Family professionals represent a third group with practice implications derived from the work/eldercare interaction. Persons working directly with either primary caregivers or other family members may be resource brokers or providers of socio-emotional services (education, counseling, stress management programs, facts about community resources). Information about eldercare and resources available should be accessible to both the caregiver and other family members. Families might need encouragement to get involved with eldercare; conversely, the primary caregiver may require permission and support to allow other family members care responsibility.

While the present study did not address whether or not the caregiver wished to have more family assistance, clearly, little family help was provided. The support available and the perception of the usefulness of the aid makes a difference in the caregiver's interpretation of the amount and frequency of family help. The family professional may need to work with network members to improve communication skills so that the family is able to recognize available help and use it as needed. Exploring the caregiver's willingness to provide care also may provide information about alternatives and potential substitute caregivers or other resources.

In addition, the differential effects of any intervention must be considered by the family professional. What is helpful to one caregiver may not be to another. It may be necessary to make a concerted effort to change family task norms. For example, men can be encouraged to have more involvement in family care activities throughout the family life cycle. Intervention must be considered in the context of the caregiver and

family environment (past, present, future, psychological, and physical) to help identify the interdependence of the family and how that relates to the family care situation.

Finally, family professionals may need to increase the flexibility of available service hours to meet the schedule needs of the employed caregiver. For instance, offering early morning, evening, or Saturday hours to provide the services required by either the caregiver or care recipient may allow the caregiver to meet family obligations without the need to adapt employment.

Implications for Policy

Although the present study used a relatively small sample and has some limitations, results provide additional information to help policy makers examine the issues related to programs (existing or proposed) designed to help employees with family care. The analysis of informal family care (eldercare or other dependent care) provides information to help restructure social arrangements and economic resources.

Policy makers may need help altering the traditional image of "family" to one that is more realistic in today's world. Often the caregiver is single (25% of the caregivers in the present study were unmarried) and many times the caregiver is from the "sandwich" generation (61% of the present study were daughters, the average age was 52 years) and may have dependent children as well as responsibility for parent care (Brody, 1985; Sidel, 1986). Policies should not jeopardize the caregiver who chooses to take a leave of absence or leave the workforce temporarily in order to provide care. Currently, either adaptation (Type II or Type III) may jeopardize the caregiver's own

elder years because of the probable interruption in health and pension benefits resulting from that decision.

Flexible policies to meet the changing needs of family care throughout the life cycle are needed. While 31 states and the District of Columbia have some version of a family leave statute (most include maternity or adoptive leave; some also incorporate other serious family problems), a national policy does not exist ("The Family and Medical Leave Act," 1991). Initiatives to establish national policies related to work and family should be nurtured and supported. Hooyman (1990) maintains that the well-being of family caregivers has not been the target for public policy.

In contrast, Hokenstad and Johansson (1990) report that Sweden recently incorporated a care leave policy into the Swedish Social Insurance System enabling Swedish family caregivers to take up to 30 days paid leave from their employment in order to manage eldercare obligations. The Swedish government also emphasizes the provision of caregiving salaries if caregiving is a part-time or full-time job (Hokenstad & Johansson, 1990).

While policy changes require immense effort and enormous popular and governmental support, they begin with individual involvement at the local level. This commitment eventually extends to state and federal arenas. Ultimately, policy changes supportive of work and family obligations will make a difference to the employed providers of family eldercare, both today and in the future. The adaptation of current policies to support family needs across the life cycle may come slowly, but it will come. Adaptation means the modification of behavior, feelings, and ideas to meet changing demands and conditions. This applies to both political and family environments.

Implications for Further Research

The final implications derived from the study are those for research. Additional research, using the present study design, can provide data to determine whether there are patterns in the ebb and flow of employment adaptation. Future investigation should include the quality of the caregiving dyad affiliation and the perceived burden (cost) of the caregiver in order to evaluate differences in the costs of eldercare that may result when the relationship quality varies.

Although the present study extends existing research by considering the interaction of eldercare and employment over two time periods, a longer time frame is needed. Longitudinal investigations (such as the core study) more ably address work/family issues than do the cross-sectional studies that dominate the caregiving and employment literature or the two time periods of the present inquiry.

The workplace has paid little attention to the problems employees may have with eldercare responsibilities (Warshaw, Barr, Rayman, Schachter, & Lucas, 1986). While managers are beginning to recognize the close connection of work and family, its effect is still unknown. More studies are needed that compare the employment adaptation and the work quality of employed family caregivers with workplace accommodations of non-caregiving employees (Neal, Chapman, Ingersoll-Dayton, Emlen, & Boise, 1990). Research also is needed to identify workplace characteristics that help employed caregivers remain on the job as well as analysis to evaluate the effectiveness of existing family benefit programs (Scharlach, Lowe, & Schneider, 1991).

Investigation to assess the linkage with eldercare and other work-related events (job turnover, productivity) provides yet another area of needed research. Finally,

research that considers race and ethnicity and the diversity that those variables may bring to employed caregivers' (both men and women) employment adaptation is required (White-Means & Thornton, 1990).

This study investigated the influence of acquiring the family caregiver role on female employment adaptation at the inception of the eldercare function and three months later. The primary caregivers shared their time, their talents, and sometimes their home environment to meet eldercare obligations. They used internal resources (knowledge, skills, and coping abilities) to manage the physical, instrumental, and health care activities of daily living required by the care recipient. They altered work patterns and career goals. Caregivers at both time periods elected to use a variety of Type I, Type II, or Type III adaptations in order to balance work and family care responsibilities. How that equilibrium will shift remains for future research to describe.

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# APPENDICES

# APPENDIX A

## APPENDIX A

### Instrument

### Caregiver Employment Questionnaire (selected items)

1. Were you employed outside the home previous to your caregiving responsibility?

   ___ YES (1)
   ___ NO (2)

   if yes, ___ full-time (1) ___ part-time (2)

Note: At Time 2, the caregiver is asked if there has been a change in employment status in the last three months and if so, how it has changed.

2. What is your current employment status?

   ___ employed full-time (1)
   ___ employed part-time (2)
   ___ self-employed (3)
   ___ retired (4)
   ___ leave of absence (5)
   ___ unemployed; laid off/between jobs/disability (6)
   ___ not employed for pay outside the home; homemaker (7)
   ___ quit work to care for _____ (8)

3. There are some ways that caregiving can affect or interfere with your work or employment. Please answer "yes" or "no" for each item even if you are retired or currently unemployed.

   Has caregiving affected or interfered with your work:

   a. Caused you to be late for work/or leave work early?

      ___ YES (1) ___ NO (2)

b. Caused you to miss days of work without pay?

___ YES (1) ___ NO (2)

c. Caused you to take sick/personal days?

___ YES (1) ___ NO (2)

d. Caused you to change the hours you work (shift)?

___ YES (1) ___ NO (2)

e. Caused you to turn down a job or promotion?

___ YES (1) ___ NO (2)

f. Kept you from looking for a job, or a better job?

___ YES (1) ___ NO (2)

g. Affected your work in other ways not mentioned?

___ YES (1) ___ NO (2)

Describe:_____

h. Caused you to take a leave of absence?

___ YES (1) ___ NO (2)

i. Caused you to quit or take early retirement?

__ YES (1) ___ NO (2)

4. In the last three months, how many days of work have you missed in order to care for your relative?

____ (Write in Number of Days) ___ Not Applicable

## Sociodemographic Information

1. Caregiver is: ___ Male (1)___ Female (2)
   Patient is: ___ Male (1)___ Female (2)

2. Caregiver Birth Date ___ month ___ day ___ year
   Patient Birth Date ___ month ___ day ___ year

3. What is your (caregiver) marital status? (CHECK ONE)

   ___ Single, never married (1)
   ___ Married/ remarried (2)
   ___ Divorced (3)
   ___ Widowed (4)
   ___ Separated (5)

4. What is your relationship to _____? You are his/her: (Check one)

   ___ Spouse (1)
   ___ Parent (2)
   ___ Daughter/Son (3/4)
   ___ Daughter-in-law/Son-in-law (5/6)
   ___ Sister/Brother (7/8)
   ___ Sister/brother-in-law (9/10)
   ___ Granddaughter/son (11/12)
   ___ Niece/Nephew (13/14)
   ___ Aunt/Uncle (15/16)
   ___ Other relative (17) (specify) _____
   ___ Friend or companion with whom you live (18)
   ___ Other non relative (19)

5. What is your highest level of education? (Check one)

   ___ Completed grade school or less (1)
   ___ Completed some high school (2)
   ___ Completed high school (3)
   ___ Completed some college or technical training (4)
   ___ Completed college (5)
   ___ Completed some graduate or professional school (6)
   ___ Completed graduate or professional degree (7)

6. Do you and _____ currently live in the same household? (If "yes", caregiver was asked about prior)

___ Yes (1) ___ No (2)

7. Considering all sources of income for all members of your household, please indicate your gross income, before taxes, as you would report on your Federal Tax Forms. (Select one category)

___ 0 - 1,999 (1)
___ 2,000 - 3,999 (2)
___ 4,000 - 5,999 (3)
___ 6,000 - 7,999 (4)
___ 8,000 - 9,999 (5)
___ 10,000 - 13,999 (6)
___ 14,000 - 17,999 (7)
___ 18,000 - 21,999 (8)
___ 22,000 - 25,999 (9)
___ 26,000 - 29,999 (10)
___ 30,000 - 34,999 (11)
___ 35,000 - 39,999 (12)
___ 40,000 - 44,999 (13)
___ 45,000 - 49,999 (14)
___ 50,000 - 54,999 (15)
___ 55,000 - 59,999 (16)
___ 60,000 and over (17)

## Family Network Questionnaire

The next set of questions asks about the families of you and the person for whom you provide care.

First, we'd like you to identify all living adult relatives of the patient. We'd like you to include parents, sisters, brothers, spouse, and children. For each relative, we'd like you to give us the person's initials, the relationship to the patient, and how far away they live from the patient in approximate miles.

(THE INTERVIEWER FILLS OUT THE FIRST THREE COLUMNS OF THE TOOL AT THIS POINT WITH THE INITIALS, RELATIONSHIP TO THE PATIENT, AND DISTANCE IN MILES FOR EACH PERSON IDENTIFIED AS A LIVING ADULT RELATIVE OF THE PATIENT)

Next, I'd like you to think about each one of these people in terms of how close they are to the patient and how close they are to you. By closeness, we mean the strength of the emotional tie between the patient and the relative, and you and the patient's relative. Please rate the closeness of the relationship on a scale of 1 to 5 where 1 stands for a relationship that is not at all close and 5 stands for a relationship which is extremely close. Then I'll ask you about how much help each of the relatives helps with caregiving. The answers you may choose from are NONE OR VERY LITTLE, A LITTLE, SOME, QUITE A BIT, or A GREAT DEAL.

(THE INTERVIEWER CUES RESPONDENT WITH INITIALS AND RELATIONSHIP AND FILLS OUT THE REMAINING COLUMNS)

| CLOSENESS TO PATIENT | CLOSENESS TO CAREGIVER | HELP PROVIDED |
|---|---|---|
| 1 = not at all close | 1 = not at all close | 1 = none or very little |
| 5 = extremely close | 5 = extremely close | 2 = a little |
| | | 3 = some |
| | | 4 = quite a bit |
| | | 5 = a great deal |

Only the number in the caregiver's family network and the amount of help provided by each member was used in the study. At Time 2, the caregiver also is asked to estimate both the number of hours per week that each person assisted in caregiving and the total number of hours per week that others provided help. In addition, there are questions about changes in the help received (stopped or decreased and by whom; started or increased and by whom). Finally, the caregiver is asked whether help from the family increased, stayed about the same or decreased.

**Social Assistance (of the family) Scale**

Now I'm going to ask you about the assistance that you receive from other people to care for your relative (relationship or name of the patient). By other people, I mean friends or relatives whether you pay them or not.

For the next set of questions, I will ask "How often since discharge, over the past month has anyone in your family given you assistance in the following ways," and I will read a list of activities. I would like you to please pick from one of four categories of responses: You can choose from "Rarely or None of the Time," "Some of the Time," "Most of the Time," or "Almost all of the Time." I will repeat those categories again if necessary.

1. How often since discharge or over the past month, HAS ANYONE IN YOUR FAMILY given you assistance in the following ways: (CHECK ONE FOR EACH TASK)

SCALE:

1 = rarely or none of the time
2 = some of the time
3 = most of the time
4 = almost all of the time

1a. Help with physical care
1b. Spend time keeping your relative company
1c. Stayed with _____ so that you could do something else for a few hours.
1d. Given YOU emotional support or encouragement
1e. Helped with transportation; for either you or _____
1f. Helped YOU with money or other material goods
1g. Checked on YOU to be sure that you were alright
1h. Provided/encouraged diversional activities for ___such as cards or Scrabble

Note: The core study also utilizes the questions to assess the assistance of friends. This study used only family responses. The questions are identical at Time 1 and Time 2.

**Caregiver Involvement Instrument (selected items)**

**The next set of questions addresses the PRESENT level of performance for the person you care for on a number of activities and the way YOU help him/her. For each item, please choose the response that most closely describes the patient's PRESENT condition and how you help him or her.**

1. DRESSING

1a. With regard to dressing, would you say _____...(check one)

___ IS INDEPENDENT

___ NEEDS SUPERVISION ONLY

___ NEEDS SOME PHYSICAL HELP

___ NEEDS TOTAL PHYSICAL HELP

___ IS NEVER DRESSED (always wears bed clothing)

1b. How frequently do YOU help your relative with dressing?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

2. EATING

2a. With regard to eating, would you say _____...(check one)

___ IS INDEPENDENT

___ NEEDS SUPERVISION ONLY

___ NEEDS SOME PHYSICAL HELP

___ NEEDS TOTAL PHYSICAL HELP

___ NOT APPLICABLE (needs tube feedings, IV's)

2b. How frequently do YOU help your relative with eating?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

3. BATHING

3a. With regard to bathing, would you say _____...(check one)

___ IS INDEPENDENT

___ NEEDS SUPERVISION ONLY

___ NEEDS SOME PHYSICAL HELP

___ NEEDS TOTAL PHYSICAL HELP

3b. How frequently do YOU help your relative with bathing?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

4. WALKING INSIDE THE HOUSE

4a. With regard to walking inside the house, would you say _____...(check one)

___ IS INDEPENDENT

___ NEEDS SUPERVISION ONLY

___ NEEDS SOME PHYSICAL HELP

___ NEEDS TOTAL PHYSICAL HELP

___ UNABLE TO WALK

4b. How frequently do YOU help your relative with walking?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

5. TOILETING

5a. With regard to toileting, would you say _____...(check one)

___ IS INDEPENDENT

___ NEEDS SUPERVISION ONLY

___ NEEDS SOME PHYSICAL HELP

___ NEEDS TOTAL PHYSICAL HELP

___ NOT APPLICABLE (has catheter and colostomy)

5b. How frequently do YOU help your relative with toileting?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

6. TRANSFERRING IN/OUT OF BED

6a. With regard to transferring in/out of bed, would you say _____ ...(check one)

___ IS INDEPENDENT

___ NEEDS SUPERVISION ONLY

___ NEEDS SOME PHYSICAL HELP

___ NEEDS TOTAL PHYSICAL HELP

___ REMAINS BEDFAST

6b. How frequently do YOU help your relative with transferring in/out of bed?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

7. COOKING/PREPARING MEALS

7a. How much help does _____ presently need with cooking? Does he/she need: (check one)

___ NO HELP

___ SOME HELP

___ TOTAL HELP (doesn't participate, but has done so in the past)

___ TOTAL HELP (doesn't participate and never has)

___ NOT APPLICABLE (patient has tube feedings, IV's)

7b. How frequently do YOU help your relative with cooking or cook for him or her?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

8. HOUSEWORK

8a. How much help does _____ presently need with housework? Does he/she need: (check one)

___ NO HELP

___ SOME HELP

___ TOTAL HELP (doesn't participate, but has done so in the past)

___ TOTAL HELP (doesn't participate and never has)

8b. How frequently do YOU help your relative with housework or do housework for him or her?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

9. SHOPPING

9a. How much help does _____ presently need with shopping? Does he/she need: (check one)

___ NO HELP

___ SOME HELP

___ TOTAL HELP (doesn't participate, but has done so in the past)

___ TOTAL HELP (doesn't participate and never has)

9b. How frequently do YOU help your relative with shopping or shop for him or her?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

10. LAUNDRY

10a. How much help does _____ presently need with laundry? Does he/she need: (check one)

___ NO HELP

___ SOME HELP

___ TOTAL HELP (doesn't participate, but has done so in the past)

___ TOTAL HELP (doesn't participate and never has)

10b. How frequently do YOU help your relative with laundry or laundry for him or her?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

11. TRANSPORTATION

11a. How much help does _____ presently need with transportation? Does he/she need: (check one)

___ NO HELP

___ SOME HELP

___ TOTAL HELP (doesn't participate, but has done so in the past)

___ TOTAL HELP (doesn't participate and never has)

11b. How frequently do YOU help your relative with transportation?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

12. MONEY MANAGEMENT

12a. How much help does _____ presently need with money management? Does he/she need: (check one)

___ NO HELP

___ SOME HELP

___ TOTAL HELP (doesn't participate, but has done so in the past)

___ TOTAL HELP (doesn't participate and never has)

12b. How frequently do YOU help your relative with money management or do money management for him or her?

| NEVER | ONCE A WEEK/LESS | SEVERAL TIMES A WEEK | DAILY | SEVERAL TIMES A DAY |
|---|---|---|---|---|

Note: Responses are: 0 = never, 1 = once a week or less, 2 = several times a week, 3 = once a day, 4 = several times a day. In the core study, the involvement of other people (family and friends) is also assessed with this section.

The next questions deal with activities of health care (HCA). The caregiver is asked if the relative needs help with HCA. The caregiver indicates how frequently she helps with the required care recipient activities.

Responses: 0 = never, 1 = once a week or less, 2 = several times a week (2-6), 3 = daily, and 4 = several times a day.

| | | | | | |
|---|---|---|---|---|---|
| URINARY CATHETER/CATHETER CARE | 0 | 1 | 2 | 3 | 4 |
| OXYGEN ADMINISTRATION | 0 | 1 | 2 | 3 | 4 |
| IV, HICKMAN, BROVIAC CATHETER CARE/DRESSING | 0 | 1 | 2 | 3 | 4 |
| IV MEDICATIONS/FLUIDS/FEEDINGS | 0 | 1 | 2 | 3 | 4 |
| TUBE FEEDINGS OR IV FEEDINGS | 0 | 1 | 2 | 3 | 4 |
| INJECTIONS (PAIN MEDICATIONS, INSULIN) | 0 | 1 | 2 | 3 | 4 |
| SPECIAL EXERCISES/PHYSICAL THERAPY | 0 | 1 | 2 | 3 | 4 |
| CARE OF ULCERS/BEDSORES | 0 | 1 | 2 | 3 | 4 |
| SKIN CARE (SPECIAL CLEANSING LOTIONS) | 0 | 1 | 2 | 3 | 4 |
| COLOSTOMY/COLOSTOMY CARE | 0 | 1 | 2 | 3 | 4 |
| CARE OF POST OPERATIVE INCISION/WOUND | 0 | 1 | 2 | 3 | 4 |
| ORAL MEDICATIONS | 0 | 1 | 2 | 3 | 4 |
| NASOGASTRIC TUBE AND CARE | 0 | 1 | 2 | 3 | 4 |
| INCONTINENCE OF URINE | 0 | 1 | 2 | 3 | 4 |
| INCONTINENCE OF STOOL | 0 | 1 | 2 | 3 | 4 |
| TRACHEOSTOMY/TRACHEOSTOMY CARE | 0 | 1 | 2 | 3 | 4 |
| RESPIRATOR/CARE OF RESPIRATOR | 0 | 1 | 2 | 3 | 4 |
| SUCTIONING | 0 | 1 | 2 | 3 | 4 |

Note: In the core study, this section also is used to assess the caregiver's feelings of competency to help with the required procedures and to measure how often others help.

**The next set of questions is about how much time you spend providing care for your relative.**

1. PHYSICAL ASSISTANCE

   1a. In a usual day how many hours do you spend providing physical assistance to your relative? By physical assistance, we mean physically helping your relative with activities such as eating, bathing, treatments, etc. (WRITE IN NUMBER)

   ___ NUMBER OF HOURS/DAY

2. SUPERVISION TIME

   2a. In a usual day (excluding night hours), how many hours do you spend supervising your relative? By supervision, we mean being with your relative to make sure he/she is safe (WRITE IN NUMBER)

   ___ NUMBER HOURS/DAY

Note: At Time 2, the caregiver also is asked to indicate if she is providing more care, less care, or the same amount of care compared to three months ago.

# APPENDIX B

# APPENDIX B

## Correlation Matrix

| Time 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Cg Age | 1.00 | | | | | | | | | | | | | |
| 2. Ed | -.13* | 1.00 | | | | | | | | | | | | |
| 3. Income | -.23** | .26*** | 1.00 | | | | | | | | | | | |
| 4. CR Age | .11 | .02 | .18** | 1.00 | | | | | | | | | | |
| 5. ADL | -.05 | -.19** | -.07 | .05 | 1.00 | | | | | | | | | |
| 6. IADL | -.00 | -.10 | -.04 | -.10 | .62*** | 1.00 | | | | | | | | |
| 7. HCA | -.08 | -.06 | -.11 | -.00 | .61*** | .49*** | 1.00 | | | | | | | |
| 8. ALL | .06 | -.15* | .09 | .00 | .90*** | .77*** | .85*** | 1.00 | | | | | | |
| 9. Hrs PC | -.07 | -.17** | -.22** | .00 | .66*** | .45** | .56*** | .67*** | 1.00 | | | | | |
| 10. Hrs S | .11 | -.20** | -.14* | .00 | .59*** | .55*** | .46*** | .62*** | .47*** | 1.00 | | | | |
| 11. Fr FH | -.13 | .02 | .08 | -.09 | .04 | .17** | .11 | .11 | .01 | .05 | 1.00 | | | |
| 12. F NW | .19 | -.04 | .13 | .25*** | .09 | .03 | .10 | .10 | .00 | .06 | .08 | 1.00 | | |
| 13. A FH | .22** | -.06 | .19** | .30*** | .13* | .02 | .12 | .12 | .08 | .09 | .29*** | .58*** | 1.00 | |
| 14. Typ I | .34*** | .13* | .20** | -.03 | .20** | .15** | .22** | .23*** | .25*** | .08 | -.03 | -.04 | .22** | 1.00 |
| 15. Typ II | .01 | -.18* | -.15 | -.13 | .18* | .16* | .16* | .20** | .25** | .16* | -.05 | -.09 | -.10 | 1.00 |
| 16. Typ III | -.11 | -.08 | -.16* | -.03 | .26*** | .19** | .35*** | .32*** | .32*** | .23** | -.07 | .12 | .03 | 1.00 |

See note below table on next page

| Time 2 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Cg Age | 1.00 | | | | | | | | | | | |
| 2. Ed | -.23** | 1.00 | | | | | | | | | | |
| 3. Income | -.30** | .24** | 1.00 | | | | | | | | | |
| 4. CR Age | .08 | .07 | .15 | 1.00 | | | | | | | | |
| 5. ADL | .02 | -.19* | -.09 | .14 | 1.00 | | | | | | | |
| 6. IADL | .08 | -.10 | -.02 | -.03 | .46*** | 1.00 | | | | | | |
| 7. HCA | .05 | -.07 | -.22* | -.01 | .58*** | .44*** | 1.00 | | | | | |
| 8. ALL | .05 | -.16 | -.15 | .07 | .87*** | .71*** | .85*** | 1.00 | | | | |
| 9. Hrs PC | .01 | -.22* | -.08 | -.11 | .59*** | .31** | .54*** | .61*** | 1.00 | | | |
| 10. Hrs S | .14 | .17 | -.09 | .12 | .10 | .11 | .13 | .53*** | .32*** | 1.00 | | |
| 11. Fr FH | .05 | -.05 | -.05 | .04 | .07 | .02 | .21* | .13 | .12 | -.09 | 1.00 | |
| 12. Typ I | -.11 | .16 | -.08 | -.09 | .12 | .10 | .11 | .13 | .12 | .01 | .14 | 1.00 |
| 13. Typ II | .09 | -.13 | -.06 | .04 | .06 | -.00 | -.03 | .01 | .11 | .08 | .04 | 1.00 |
| 14. Typ III | -.13 | -.22* | -.08 | -.03 | .10 | .17 | .03 | .11 | .04 | .34** | -.14 | 1.00 |

Note: * = .05; ** = .01; *** = .000.

Abbreviations: Cg Age = caregiver age; Ed = caregiver education; Income = caregiver income; CR Age = care recipient age; ADL = activities of daily living; IADL = instrumental activities of daily living; HCA = health care activities; ALL = total caregiver involvement; Hrs PC = hours of physical care; Hrs S = hours of supervision; Fr FH = frequency of family help; F NW = family network; A FH = amount of family help; Typ I = Type I; Typ II = Type II; Typ III = Type III

# APPENDIX C

## APPENDIX C

### Means for Interval Variables

| | Time 1 (N=236) | | | | Time 2 (N=119) | | | |
|---|---|---|---|---|---|---|---|---|
| Type I | x | SD | Min | Max | x | SD | Min | Max |
| Adaptation | 1.75 | 1.58 | 00 | 6 | 1.07 | 1.18 | 0 | 4 |
| Cg Age | 50.67 | 11.97 | 19.59 | 75.96 | NA | NA | NA | NA |
| Cg Ed | 13.22 | 2.56 | 6 | 20 | NA | NA | NA | NA |
| Cg Income | 35,812.80 | 17,426.29 | 3,000 | 62,500 | NA | NA | NA | NA |
| CR Age | 73.36 | 9.16 | 53.11 | 93.30 | NA | NA | NA | NA |
| F NW | 2.27 | 2.10 | 0 | 10 | NA | NA | NA | NA |
| A FH | 2.93 | 3.52 | 0 | 19 | NA | NA | NA | NA |
| Fr FH | 1.74 | .48 | 1 | 3.75 | 1.66 | .57 | 1 | 4 |
| ALL | 23.06 | 15.16 | 0 | 59 | 21.57 | 14.62 | 0 | 57 |
| Hrs PC | 3.76 | 5.26 | 0 | 24 | 2.58 | 4.21 | 0 | 24 |
| Hrs S | 6.98 | 6.71 | 0 | 20 | 7.33 | 7.11 | 0 | 20 |

Note: NA = information not updated at Time 2

Abbreviations: Cg Age = caregiver age; Ed = caregiver education (in years); Income = caregiver income; CR Age = care recipient age; F NW = family network; A FH = amount of family help; Fr FH = frequency of family help; ALL = total caregiver involvement; Hrs PC = hours of physical care; Hrs S = hours of supervision

# APPENDIX D

# APPENDIX D

## UCRIHS Approval Letter

MICHIGAN STATE UNIVERSITY

OFFICE OF THE PRESIDENT FOR RESEARCH AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

April 20, 1992

Susan T. Franklin
2066 Hillside Dr.
Muskegon, MI 49441

RE: THE INFLUENCE OF ACQUIRING THE FAMILY ELDER CARE ROLE ON FEMALE EMPLOYMENT ADAPTATION, IRB #92-157

Dear Ms. Franklin:

I am pleased to advise that because of the nature of the proposed research, it was eligible for expedited review. This process has been completed, the rights and welfare of the human subjects appear to be adequately protected, and your project is therefore approved.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval prior to April 15, 1993.

Any changes in procedures involving human subjects must be reviewed by the UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to our attention. If we can be of any future help, please do not hesitate to let us know.

Sincerely,

David E. Wright, Ph.D., Chair
University Committee on Research
Involving Human Subjects (UCRIHS)

DEW/pjm

cc: Dr. Barbara Ames

MSU is an Affirmative Action/Equal Opportunity Institution