PATTERNS OF ELDER CARE, TRANSITIONS INTO FILIAL CARE, AND CAREGIVER PSYCHOLOGICAL FUNCTIONING

by

KATIE RUTH JAMES

(Under the Direction of Jody Clay-Warner)

ABSTRACT

The need for elder care is growing. The bulk of this care is provided informally by family members. Several studies examine the relationship between elder caregiving and the psychological functioning of the caregiver, but research in this area yields inconsistent results. Many studies find that caregiving is associated with increased levels of distress, while others find that caregivers are no more distressed than non-caregivers. Complicating this is a handful of studies that show psychological advantages to caregiving. Reasons for these inconsistent findings include cross-sectional designs, small sample sizes, non-representative samples, and samples that lack a non-caregiving referent group.

To address these limitations, I examine elder care longitudinally, using several waves of a nationally representative dataset known as the Household, Income, and Labor Dynamics in Australia study. I use group-based trajectory modeling to identify patterns of elder care and patterns of psychological functioning. Results of multinomial logistic regression models analyzing these patterns indicate that men who participated in a pattern of consistently low levels

of care or in a pattern of care that I term “moderate increasers” (i.e., they begin the study providing small amounts of care and their time increases over the study period) have higher odds of membership in a pattern of moderate psychological distress (relative to low levels of distress) than men who do not participate in care. Women who were identified as members of a “high increaser” pattern of care had higher odds of membership in a pattern of distress characterized by high levels of distress (relative to a pattern of low distress levels) and lower odds of membership in a pattern of well-being characterized by low levels of well-being (compared to a pattern of high well-being levels) relative to women who do not participate in care. I also use fixed effects regression models to document how transitioning into filial care affects within-person changes to a caregiver’s psychological functioning. I find that people who transition into sharing care of a parent in their own homes have decreased levels of well-being over time. Substantive and theoretical implications of these findings are discussed.

INDEX WORDS: Elder care; Gender; Psychological Distress; Psychological Well-being; Social Support; Life Course; Role Theory; Stress Processes

PATTERNS OF ELDER CARE, TRANSITIONS INTO FILIAL CARE, AND CAREGIVER PSYCHOLOGICAL FUNCTIONING

by

KATIE RUTH JAMES

B.A., University of Southern Mississippi, 2007

M.A, University of Georgia, 2009

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2015

PATTERNS OF ELDER CARE, TRANSITIONS INTO FILIAL CARE, AND CAREGIVER PSYCHOLOGICAL FUNCTIONING

by

KATIE RUTH JAMES

Major Professor:	Jody Clay-Warner
Committee:	Jeremy Reynolds
	Dawn Robinson

Electronic Version Approved:

Suzanne Barbour
Dean of the Graduate School
The University of Georgia
August 2015

DEDICATION

To my grandfather, John Wilson Burch. You once told me I could be the president and (even better) you believed it. Your belief in me made me who I am. I love you.

ACKNOWLEDGEMENTS

Part of this dissertation is about social support. I was able to succeed as a direct result of all the support I have inside and outside of work. I am so fortunate to be able to have so many wonderful people in my professional and personal life to thank for helping me through this process. My major professor, Dr. Jody Clay-Warner, deserves so much credit for molding me into the scholar I am today. Jody has read every draft I've ever given her. She gives incredibly helpful feedback to help make drafts better each time. Jody has provided me with countless opportunities in graduate school that made me a better scholar. I am constantly in awe of her---throughout the many roles she took on and the number of students she advised, I never once felt like she did not have enough time for me. I often joke that Jody has more hours in the day than the rest of us. There's no other explanation for how she gets so much done.

The members of my dissertation committee, Dr. Jeremy Reynolds and Dr. Dawn Robinson are scholars I look up to for a number of reasons. They are exceedingly positive. Talking to them about my dissertation never invoked a sense of anxiety in me as it does with many graduate students. Quite the contrary, I was always energized after talking through ideas with them, and I wanted to go test what they suggested. Jeremy was incredibly giving in terms of his knowledge of both the statistical program and dataset I used for this project. Dawn never hesitated to invite me to her office for a much needed cup of tea and conversation. Her advice throughout graduate school (but particularly the job market) helped me see issues from so many angles, and I am so thankful for her constant presence.

Other professors at UGA and other institutions contributed to my professional socialization. I became a better teacher after watching Dr. Jim Coverdill. Drs. Linda Grant, Patricia Richards and Linda Renzulli are role models for strong women in the discipline. Each advised me in various contexts, and I always emerged a better sociologist as a result. Drs. Amy Chasteen Miller, Dana Fennell, and Ann Marie Kinnell introduced me to sociology and saw something in me that I didn't know existed. I never would have been a sociologist without them. Now, I can't wait to be their colleagues.

When I signed my acceptance letter to come to Georgia, I was nervous about making new friends. It turned out that worry was completely unfounded (as most are). I have so many wonderful friend-scholars connected to UGA.

- Maria: You brought me to UGA, so you had to put up with me. Thank you for answering all my stats questions, for being so giving with all of your resources, for talking through every problem with me, and for always being on my side.

- Matt: Your dry sense of humor made me laugh out loud on many occasions. Thank you for that. And also for making me feel better by posing a stats question to me and then answering it yourself while attributing that process to me. I'm glad I could help. Keep sending those along.

- Ashley Barr: Someone once told me, "Ashley is not a knowledge hoarder," and I can't think of a better sentence to describe you. You are so freely giving with everything you know (which is a lot!) and that has saved me so much time, energy, and heartbreak. And you're also super fun to take with me to see a Broadway show.

- Sara Evans: I was so lucky to have you as a friend in those first years. I will always remember our first evening in Athens, fun tailgates, and sharing a house with you. You were the best roommate ever! I have missed your presence in Athens so much. I am so happy to be moving closer to you.

- Jackson Bunch: Thanks for being able to cheer me up on the gloomiest of days. I still don't know who stole your cheese plate.

- Tiffani: I would tell you how great of a friend you are, but I'm probably texting you that right now.

- Dave & Laura: Thanks for always reaching out. You're about to be parents, and I can't imagine better parents to have. And this won't be published until you've made your birth announcement, so technically, I did not break my promise and kept everything a secret.

- Trent, Long, and Tre': It was a joy to watch you at UGA and it has been so fun to see your success beyond. You should probably just go ahead and put me on every paper that you write. It only seems fair.

- Alec: I'm so lucky you ran those experiments that summer. I love our long phone conversations and when we get to catch up during the holidays. You are an incredible scholar. Your ability to see the multiple facets of an issue continues to amaze me.

- Jun: You are the kindest soul. You are so quick to help, and I will miss being able to commiserate in our office together.

- Kait: The next time a Taylor Swift album comes out, we are Skyping so that we can code while we listen. P.S., You've made me a better feminist.

- Taylor: Thanks for always talking about gender or food whenever I want. Best of luck in Iowa.

- Jesse: Thank you for helping me survive comps. I could not have done it without you.

- Elizabeth: Thank you for being the best sounding board out there. I know I took you away from your work many times, and I appreciate you not telling me to leave you alone (as you probably should have). Thank you for always giving me a website to confirm whatever issue I'm discussing. I'm sure we will have many more Word tables to fill out in our future. I will miss our trips together. So come visit, ok? We can plan it via a Googledoc. I'll start one.

There are a host of people who helped make the administrative side of academia much more pleasant: Subrina Dake, Kathy Lou, Rebecca Brooks, Lindsey Carden, Sara Woods, and April Brown were always willing to answer my (probably endless, annoying, and repetitive) questions about paperwork and technology. Thank you.

I would be remiss if I failed to acknowledge my support network outside of academia. To Dr. CS---I am so lucky to be able to work with you. You have made me a better person. Thank you for being so kind, understanding, and generous. I can't imagine not seeing you, but I know you've given me the tools to forge ahead.

My dearest friends---Kyleigh, Nancy, Patrick, Amanda, Dennis, Andrew, Ashley, Cutter, Courtney, Aubrey, Jessica, Cheri, Darys and Lindsey---I am lucky to have you in my life. Thank you for answering when I call, even though you know it is probably because I have a problem for you to solve. To a family that has accepted me with open arms---Joe, Kathleen, Jake, Charlie, and Cora Lea, thank you so much for making me feel so included in everything you do. To my own wonderful family members---Pack (and Ms. Helen), Rosa (and baby Keefer!), Candi, Wayne (both of you!), and Katelynn---thank you for your unwavering and unconditional support. Knowing I have you to fall back on makes the hard times more bearable.

To my mother---you have always been my biggest fan, my most trusted confidante, and my rock. I want you to know that this dissertation was completely inspired by your work. I watched you care for so many people as I grew up (my sister and I, my father, my grandmother, my uncle, my stepfather, and now my grandfather). Our family is so grateful to you for all that you have done for us. Thank you. Being apart for graduate school was hard for both of us, but I am so looking forward to being with you again.

Joseph, one of the best moments of my life was meeting you. You challenge me to be a better person. You were so supportive during the job market and even more so as I wrote. You kept me here. You celebrate every victory with me no matter how small. I talk to my classes about the importance of having an equal partner and you are just that. I am so fortunate to have you by my side, and I am so excited for our journey together. But seriously, can I have a girl dog for graduation?

You all have my deepest respect and admiration.

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Family caregiving is a broad term that encompasses many types of care: childcare, caring for aging parents, spousal care, and caring for other aging and/or ailing relatives. Care work performed in any of these arenas is designed to maintain the basic needs of the care recipient. Much of the sociological literature regarding family caregiving has focused on childcare, as children are seen as a public good. Trends show that Americans now spend more time in childcare than they did in the past. Parents in 2008 spent about 11 hours per week in caring for children of all ages, compared to about 6 hours per week by parents in 1965 (Bianchi 2011). Sociologists have paid less attention to the other types of family caregiving, though many people are increasingly performing this type of work. This dissertation focuses on one type of family caregiving---elder care (with a particular focus on caring for aging parents). People are providing more elder care than others did in previous years because as life expectancy has increased, so has the need to provide care for sick and/or aging relatives. Indeed, between 13-17 percent of Americans over the age of 35 report spending some time caring for an adult, and on days when they provide such care, they spend 1.5 hours on average (Bianchi 2011).

Elder caregiving is like childcare in many ways. Caregivers perform tasks such as cooking, cleaning, and bathing that are designed to maintain the life of the care recipient (Smith 2005). Additionally, people often see elder care as a familial obligation, as they do with childcare. Like childcare, elder caregiving is a highly gendered phenomenon, with women performing the bulk of this form of unpaid labor (Glenn 2010). There are also gendered

consequences that are similar to childcare. Providing care for adults is (like childcare) associated with lower pay and higher rates of psychological distress for women compared to men (National Alliance for Caregiving and AARP 2009).

Though elder caregiving is similar to childcare, it is also unique in many ways. For example, elder caregiving is much less predictable than childcare. Problems with health are much more common among the disabled, sick, and elderly than they are among children. Thus, people who provide care for adults are often caring for sick or frail individuals. Also, as adults age, they tend to become less autonomous and in need of more care, unlike children who require less care and become more independent as they age. Indeed, people spend more time in elder caregiving as the care recipient ages, which is untrue of childcare (Bianchi 2011). Further, caregiving for adults typically starts at later ages in the life of the caregiver than the time that people begin intense childcare. This means that as adults need more intense physical care, their caregivers may become less physically capable of providing that care.

The differences between caregiving for adults and children are not always in favor of those who provide childcare. For example, since people who perform elder caregiving are on average older than those who provide childcare, they may be in a better economic position to provide such care. Barring the economic penalties associated with caregiving, those who provide adult care are more likely to have longer tenure in their jobs and higher salaries than those who are just beginning to care for children. As a result, those who perform elder caregiving may be able to outsource some of the tasks associated with this type of care so as to alleviate the burden of caregiving. Thus, the position of the caregiver in terms of his/her life course is particularly important when considering care work.

Since elder caregiving is a growing phenomenon with potentially significant social and economic consequences, more research needs to be done on this topic. The purpose of this dissertation is to show how patterns of elder caregiving and transitions into caregiving affect the psychological functioning of caregivers over time. First, I seek to document different patterns of elder caregiving over time. Doing so will allow researchers who study of elder care to understand the empirical realities of caregiving by recognizing that many people take very different paths in terms of their experience in elder care. Some people never participate, others start off providing small amounts of care that increase over time, while others provide consistently high levels of care. I will then relate these patterns of caregiving to patterns of psychological functioning of caregivers over time.

In the second results chapter, I will test how transitions to caregiving affect the psychological functioning of caregivers over time. This portion of the dissertation is unique in many ways. It examines within-individual changes in well-being and distress as a result of becoming a caregiver to an elder along two dimensions: perceived caregiving responsibility and the residential status of the care recipient relative to the caregiver. I will examine whether transitioning to a main or shared filial caregiving role (either residentially or non-residentially) affects indicators of distress and well-being within caregivers over time. While some past work has examined transitions to elder care (Choi and Marks 2006, Marks, Lambert and Choi 2002), this dissertation is unique in that it allows for the examination of different types of transitions, as it remains unknown whether transitions to certain forms of elder caregiving may be more or less stressful than others. This portion of the dissertation will be able to test which transitions are the most advantageous or deleterious for caregivers in terms of their psychological functioning.

This dissertation will have six main sections. In Chapter 2, I review relevant trends in elder caregiving and expound upon its relationship with labor market position and physical health, showing unambiguously harmful consequences for being a caregiver. Then, I explain that the relationship between elder caregiving and the psychological functioning of caregivers is much less clear. I end the literature review chapter by suggesting some reasons for the discrepant findings in the caregiver-psychological functioning literature. In Chapter 3, I provide a theoretical framework for the dissertation, including the life course perspective, role theory, the stress process model, and specific hypotheses of caregiving in the caregiving literature. I present research questions and hypotheses for the dissertation (Tables 1 and 2) at the end of this chapter based on the theories described. To answer these research questions, I will use data from a longitudinal sample of randomly selected Australian households that I describe in Chapter 4. I also explain the two methods I will use: group-based trajectory modeling (in conjunction with multinomial logistic regression analyses) and fixed effects regression models, as well as the variables that I will use for each of these analyses. Chapter 5 presents results of group-based trajectory models that identify patterns of elder care and caregiver psychological functioning over time as well as multinomial logistic regression models that capture the odds of membership in patterns of psychological functioning based on membership in a pattern of caregiving. Chapter 6 displays results of fixed effects regression models that examine how transitions into different forms of elder care affect within-individual changes in caregiver psychological functioning over time. In Chapter 7, I conclude by discussing the substantive and theoretical implications of this dissertation. I begin now by reviewing relevant trends in elder caregiving.

CHAPTER 2

LITERATURE REVIEW

The purpose of this section is to provide an overview of elder caregiving and its consequences, with a particular focus on the psychological functioning of caregivers. First, I will review relevant background information on elder caregiving and provide demographic statistics about caregivers in the United States and Australia. Second, I will summarize the state of the literature that links elder care to three predominant caregiver outcomes---labor market position, physical health, and psychological functioning. As this dissertation focuses on caregivers' psychological functioning, I define what is meant by this concept and then point to the discrepant findings in the literature about its relationship with elder caregiving. I end by discussing how sociodemographic variables and caregiving situations affect caregivers' psychological functioning.

What is elder caregiving?

Elder care involves helping aging individuals (typically one's relatives) with routine daily tasks. These tasks can include, but are not limited to, bathing, dressing, feeding, providing transportation, lifting, and supervising medical care of aging people (typically over 65 years old). Elder caregiving involves caring for elderly adults (parents in particular), but it also includes taking care of a sick or disabled spouse or other adult relatives. Caring for older individuals is the biggest component of family caregiving[1]---almost 70 percent of care recipients are over 50

[1] This study defines family caregiving in two ways: caring for someone over 18 with activities of daily living and caring for a child who has a medical/behavioral condition or disability. Thus, this definition of family care excludes caring for a child without a condition or disability.

(the rest are between the ages of 18 and 49). This indicates that the bulk of the care work provided by family members is given to elderly Americans. Furthermore, estimates indicate that 30 percent of family caregivers are providing care for an aging parent (National Alliance for Caregiving and AARP 2009).

Most often, elder caregiving is offered informally by family members, though formal care can be provided through nursing homes. Only 5-7 percent of older adults reside in nursing homes at any given point, though 1 in 4 elder Americans will live in a nursing home at some point in his/her life. Elder Americans and their informal caregivers usually do not choose nursing home care until the informal caregiving becomes too difficult for the caregiver and the elder needs more attention (particularly with regard to his/her health) that the caregiver cannot provide (Smith 2005) Additionally, older people prefer to stay in their homes for as long as they can, which means that informal caregivers spend many years providing services for these individuals (Day 1991, Rowland 1991).

Caregiver Statistics---United States and Australia

Elder care is becoming an increasingly common and normative component of family life (Brody 1985). Most American couples have more parents living (more than two) than they have children (less than two) (Smith 2005). Similar to childcare, women bear the brunt of providing elder care; seventy percent of caregivers are women (National Alliance for Caregiving and AARP 2009). Not only do women provide more elder care than do men, they are also more likely to care for aging relatives with severe disabilities. As such, they put in more hours of caregiving on average than do men. With advances in medical technology that have increased life expectancy, women now spend more years in elder care (18) than childcare (17) on average

(Smith 2005). These various care obligations have the potential to conflict with workplace responsibilities.

Much research regarding work-family conflict focuses on the difficulties in performing the dual responsibilities of employment and parenthood. Yet, people also experience a "time bind" due to other types of care work as well. The fastest-growing aspect of work-family conflict is the conflict that occurs between work and the responsibility to care for aging relatives. Several facts illustrate a potential for this conflict. For example, of the estimated 43.5 million Americans who performed adult care in 2009, 75 percent worked in paid labor (National Alliance for Caregiving and AARP 2009). Nearly half of women in the paid labor force care for an aging relative. People who provide elder care and are employed full-time spend on average 16 hours per week in unpaid care work, while those who work part-time spend 21 hours per week on average (U.S. Department of Health and Human Services 1998).

As data for this dissertation are drawn from Australian citizens, it is also necessary to consider demographic trends with regard to elder caregivers in Australia. In 2012, there were almost 2.7 million Australians who identified as a caregiver of an aging person. Almost a third of these people identified themselves as the care recipient's primary caregiver. The majority of primary caregivers are 45 years old or older. Most primary caregivers in Australia (70 percent) are women. Men and women, however, make up roughly equal numbers of non-primary caregivers. The vast majority (83 percent) live in the same household as the person to whom they give care. When Australians engage in elder caregiving, many care for their spouses (43 percent), though 20 percent of elder caregivers in Australia care for a parent over the age of 65. Many Australian elder caregivers are employed in the paid labor force---58 percent of primary caregivers who provide less than 20 hours per week of care are employed. This statistic

decreases to 27 percent for primary elder caregivers who provide 40 or more hours of care per week (Australian Bureau of Statistics 2011).

Much of the care provided to elders is done through informal means, yet elders also rely upon more formal systems of care (i.e., healthcare systems). Since the U.S. and Australia have dissimilar healthcare systems it would be logical to assume that elders in each country turn to different sources when they need care. Yet, there are policies in place that result in similar caregiving situations in these two countries. In the U.S., there is not a universal health program. People purchase insurance (many times at a very high cost) which helps them to subsidize the costs of their healthcare. There are over 5,000 hospitals in the U.S., many of which operate for-profit (American Hospital Association 2015). Even in not-for-profit hospitals, the goal is to reduce spending, which often results in sick patients leaving before they are well (i.e., the "treat and street" approach).

While there is no universal healthcare system in the U.S., there are two federal programs in place to assist people with paying for their medical costs---Medicare and Medicaid. Medicare is a federal social insurance program attached to the Social Security program, in which people pay a portion of their earnings throughout their time spent in the paid labor force. Once they are 65 or older, they are eligible to enroll in Medicare, which provides them with hospitalization coverage and medical insurance. In 2006, the Medicare Modernization Act went into effect, which added a prescription drug plan to the program. While Medicare offers insurance to the elderly population, it has many flaws. First, no part of Medicare pays for all of the beneficiary's medical costs and there are many costs that are not covered at all. Second, as with most insurance plans, there are premiums, deductibles, and co-insurance that the beneficiary must pay out-of-pocket. Therefore, many elderly Americans are unable to get all the medical care they

need (e.g., Fitzpatrick et al. 2004, Sudore et al. 2006). The result is that many of these costs and/or services are often provided informally by family members.

Medicaid, in turn, is a social health care program for people with low income. People can qualify for Medicaid if they earn up to 133% of the poverty line. Most states limit the amount of wealth a person can have and still qualify for Medicaid to under $2,000 in terms of savings and assets. If people attempt to transfer their assets, they undergo a period of ineligibility for Medicaid benefits. Therefore, many people who are not wealthy enough to afford healthcare but are not "poor enough" by federal standards to enroll in Medicaid engage in a period of "spending down" in which they spend through their savings and assets in order to qualify for Medicaid (Robinson 1997). While owning a home is not typically used in the determination of Medicaid eligibility, it is used in determining eligibility for nursing home services unless the applicant's spouse plans to stay in the residence after the applicant enters a nursing home facility. This means that many single, older Americans must sell their homes (which likely have sentimental and economic value to families) in order to utilize Medicaid services to cover the cost of long-term care. Once people enroll in Medicaid, there are limits to the amount of benefits they can receive and also exclusions to the types of services they can obtain that vary by state. Therefore, much care of the elderly takes place informally by family members because older Americans' healthcare is either not fully covered through Medicaid or they do not want to enroll in the program as doing so may involve losing their savings and property.

Australia, in contrast, has a universal health program to help make healthcare accessible to citizens. In Australia, there are three levels of governmental power and responsibilities with regard to healthcare: The Commonwealth (national), the state and territorial (eight in total), and

the local. The Commonwealth collects 1.3 percent of taxable income with a Medicare levy, commonly referred to as Australia's universal health insurance system. State and territorial governments provide healthcare services including public hospitals, health services, and health regulations (Sax 1990). Local governments have some power in terms of community health programs, immunization programs, and environmental health. Each state in Australia is autonomous, meaning that no two states have exactly the same healthcare system. In total, there are hundreds of public hospitals that are available to Australians at little, if any, cost (Courtney, Minichiello and Waite 1997). There is also a non-government sector of healthcare that is composed of "for profit" and "not for profit" hospitals.

Like the U.S., hospitals in both the governmental and non-governmental sectors of healthcare in Australia operate under an economic rationalist approach. That is, hospitals seek to reduce spending and increase profit. There are many problems with this approach. First, sick patients are discharged as early as possible to save the hospital money. This necessarily increases the need for informal, unpaid care. This leads to a phenomenon of "quicker but sicker," wherein patients are discharged earlier but are readmitted sooner because they need additional treatment and care that they may not have required had they been able to heal in the hospital (Jacobs 1991). Second, since hospitals work under an economic rationalist approach, they may be less likely to admit older people because these individuals may be more costly to treat. This can lead to people spending more time in unpaid care (Courtney, Minichiello and Waite 1997).

One of the most important programs for the elder population in Australia is the Home and Community Care (HACC) program. This program helps older Australians remain in their homes where they receive informal care from family and friends instead of moving into to nursing

homes where they would receive formal care that is paid for by the government. The fact that caring for the elderly in nursing homes costs the state millions of dollars has influenced the Australian government to shift funding from nursing homes to community programs such as Community Aged Care Packages (CACPs) that help maintain people in their homes by providing them limited amounts of home help. To be able to receive a CACP, the elderly must fit the admission criteria for entrance into a nursing home. As a result, many elderly Australians who are frail enough to warrant institutional care stay in their homes, meaning that CACPs rely on the unpaid work of informal caregivers who are mainly women (Courtney, Minichiello and Waite 1997).

There is an economic agenda behind the HACC and CACP. In 1963, a financial incentive offered to nursing homes increased the number of beds per 1,000 people over 65 from 29 to 47. Nursing home costs increased exponentially for the Commonwealth above the rate of inflation. The Commonwealth saved over 150 million dollars per year when it introduced the HACC, thereby pushing even more community-based programs (Minichiello, Russell and Swerissen 1992). Feminists, however, argue that "community" in these programs really means "families" and the bulk of the labor performed for the elderly is done by women. Indeed, the effectiveness of community programs depends on the work of unpaid and informal caregivers (Kendig, McVicar and Reynolds 1992). Trethewey (1985) goes as far as to argue that support for the community-based programs is part of an agenda to push women out of paid labor in Australia so that they can provide unpaid care to a variety of family members. Research shows that the elderly prefer living in their homes and receiving support from the community as opposed to moving into more formalized systems of care (Rowland 1991). As a result, people are pushed to provide informal care for two reasons: first, structural level factors such as

increasing the amount of government money spent on community-based programs create a need for informal care and second, micro-level processes of fulfilling the wants and needs of aging family members compel people to provide care. Therefore, the health care system in Australia is certainly distinct from that of the U.S., but the outcomes with regard to the need for caregiving are ultimately very similar.

The Sandwich Generation

The need for elder care is well-established. Due to advancements in medical technology, people are living longer and will therefore likely require more care as they age. Another demographic trend has complicated this need for elder care. People have been delaying age at first childbirth, which means that many are now responsible for caring for children and aging parents at the same time, placing people (women in particular) in a demographic phenomenon known as the "sandwich generation" (Abaya 2004). According to the AARP (2001), 44 percent of women aged 44-55 have at least one living parent and one child under 21. Also, the U.S. Census Bureau (2009) estimates that the number of Americans 65 and older will double by 2030. A large number of these people will require care as they age, and if women continue to delay age at first childbirth, this means that the problems of balancing care for children and aging parents will not diminish. Additionally, people are having fewer children, so children of aging parents have fewer siblings with whom they can share the work of providing informal elder care. Children are also more likely to move away from their hometowns than they were in the past, which means they are often far away from their parents when they need care. As a result, one child often takes on the primary role for providing support for his/her aging parents (Pierret 2006).

Participation in Elder Care over Time

Few studies have examined participation in elder care over time. Most research relies on cross-sectional reports of how much time people spend in elder care. For example, the National Association for Caregiving in conjunction with the AARP (2009) shows that on average people spend 20.4 hours per week providing care to aging adults. Other cross-sectional studies attempt to show how long people have been involved in caregiving by asking the duration of care at one time point. The average number of years a caregiver spends in caring for adults is 4.3. A third of caregivers reports giving care for less than a year, another third reports their duration of care is between one and four years, and slightly less than a third reports providing care for over five years (National Alliance for Caregiving and AARP 2009).

The Effect of Caregiving on Life Outcomes

Much of the caregiving literature has documented deleterious consequences for providing elder care on a host of relevant sociological outcomes including the labor market and caregivers' physical health. Below, I provide a brief overview of these findings.

Caregiving and Labor Market Outcomes

There are many damaging effects on people's economic standing for providing care to aging or disabled family members. Approximately half of female caregivers who are employed in the paid labor force balance their work and caregiving roles by arriving late to work or leaving early, working fewer hours, turning down opportunities to take on new projects or upgrade their skills, turning down promotions, using leaves of absence, opting for early retirement, or leaving the paid labor force completely. There are monetary losses associated with these decisions (National Alliance for Caregiving and AARP 2009). Employed caregivers who have to adjust their work life in some way are estimated to lose $566,443 in wages, $25,494 in Social Security

benefits, and $67,202 in pension wealth, for a total of $659,139 over the lifetime (MetLife Mature Market Institute, National Alliance for Caregiving and National Center on Women and Aging 1999). Women who begin providing care early in their lives are 2.5 times more likely to experience poverty than women who did not provide care (Wakabayashi and Donato 2006).

According to a National Alliance for Caregiving and AARP study (2009), 40 percent of surveyed caregivers felt that providing care for aging relatives affected the likelihood of advancement in their jobs. A major consideration in decisions about job advancement is job attendance. Considering that absenteeism is the number one work-related problem of employees who are also caregivers, it is not surprising that caregivers are often seen as less committed to their organization. Based on results of the Society for Human Resource Management's Eldercare Survey (2003), about 60 percent of surveyed caregivers have missed partial or full days of work due to providing care for their aging relatives. This means that 15 million workdays are missed each year by people who are providing elder care. Workers may choose to resign from their jobs in order to care for an elderly family member. Considering that these workers are often the ones with the most job experience, losing employees is quite costly to employers. The MetLife Mature Market Institute and the National Alliance for Caregiving (2006) estimate that the total cost to employers for full-time, employed caregivers approaches 34 million dollars each year due to absenteeism and turnover associated with providing care.

Caregiving and Physical Health

Extant research documents a negative relationship between elder caregiving and caregiver's physical health (Schulz et al. 1995, Schulz et al. 1997, Schulz and Beach 1999, Vitaliano, Zhang and Scanlan 2003). Caregivers are more likely than non-caregivers to report poor health status, a chronic health condition, or a physical disability (Ho and Fund 2005). For

example, elder caregivers are more likely than non-caregivers to have increased insulin/glucose levels which are risk factors for Type II Diabetes (Vitaliano et al. 1996), higher blood pressure (Shaw et al. 1999), and cardiovascular disease (Lee et al. 2003). Notably, Fengler and Goodrich (1979) describe caregivers as "hidden patients," as participation in caregiving leaves caregivers with little time, money, or energy to take care of their own health. Poor physical health of caregivers may be due to a variety of factors, such as the effect of physical exertion (i.e., having to lift elders) on physical discomfort, chronic disorders, and pain (Pinquart and Sörensen 2007). Another reason for the poor health of caregivers is connected to changes in health-related activities such as reduced exercise or poor diet (Beesley et al. 2011). Additionally, poor physical health of caregivers could also be related to the physiological effects of sleep disturbances (McCurry et al. 2007) and/or psychological distress (Pinquart and Sörensen 2003) that are associated with caregiving, either of which may weaken caregivers' immune systems and make them more susceptible to infections (Pinquart and Sörensen 2007).

While the research documenting the negative effects of caregiving on income and physical health of caregivers is unequivocal, the results of studies linking elder caregiving and the psychological functioning of caregivers are much less clear. Consistent with the previous literatures described, much research shows deleterious consequences for providing elder care on caregiver's psychological functioning (see Pinquart and Sörensen 2003 for a review). Other studies, however, demonstrate no relationship between caregiving and caregiver's psychological functioning (e.g., Arai et al. 2002). Even more puzzling is that other studies highlight psychological benefits for caregivers (e.g., Kramer 1997). To begin to address why there are discrepant findings, I turn now to defining what is meant by psychological functioning. Below, I

describe two conceptualizations of psychological functioning: one as a continuum and another as having separate (though often negatively correlated) dimensions.

Defining Psychological Functioning

According to Ross and Mirowsky (2006), psychological functioning is a continuum that reflects one's psychological distress and psychological well-being. Psychological functioning includes emotions (or feelings like anxiety, depression, and anger) and cognitions (or thoughts, perceptions, and worldviews, such as a person's sense of personal control and trust). Ross and Mirowsky (2006) describe psychological functioning as a continuum with the positive end representing well-being and the negative end representing distress. Psychological distress is an emotional state that is subjective to individuals and viewed as unpleasant. It typically takes two forms: anxiety and depression. Anxiety is indicated by being tense, restless, worried, and irritable. Depression is indicated by being sad, demoralized, tired, and hopeless. Each form of distress has two components: mood and malaise. Mood refers to the feelings of each state (i.e., the sadness of depression). Malaise, in turn, refers to the bodily state accorded to each form (i.e., the restlessness of anxiety). According to this perspective, psychological well-being is the lack of psychological distress.

Other scholars, however, suggest that distress and well-being are independent dimensions of psychological functioning. For example, Winefield et al. (2012) find that while psychological well-being is negatively associated with psychological distress, the association is not perfect, thereby indicating that psychological distress and psychological well-being are two different dimensions of psychological functioning. Rapp and Chao (2000) argue that even within the study of elder caregiving, positive evaluations of caregiver psychological functioning are independent of negative evaluations. While psychological distress is still conceptualized

similarly in these models (i.e., anxiety, depression, anger, stress), psychological well-being must be further conceptualized as it is not just the lack of distress. In this formulation, psychological well-being is a combination of positive affective states (i.e., happiness). Measurement of psychological well-being takes a variety of forms. Studies often measure psychological well-being through life satisfaction (Diener et al. 2000, Diener, Oishi and Lucas 2003, Lucas, Diener and Suh 1996); others include global life satisfaction and life satisfaction in particular domains such as work and family lives (Berkman and Breslow 1983). Ryff (1989) offers as rich, multi-dimensional view of psychological well-being including indicators such as autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. In any conceptualization of psychological well-being, it is about "lives going well" (Huppert 2009). Typically, people with low levels of distress and high levels of well-being indicate that they are able to cope with life's "normal" stresses, can work productively, and are able to realize their abilities.

Studies that examine the link between elder caregiving and caregiver psychological functioning do so along several dimensions of psychological functioning: depression, anxiety, stress (often measured as caregiver burden), and positive aspects of functioning (i.e., subjective well-being, meaning-making, uplifts, and life satisfaction). I review the findings of these studies in the section below.

Elder Care and Caregiver's Psychological Functioning

There is a longstanding debate in the literature regarding the relationship between the caregiving and caregiver's psychological functioning. Some studies find that providing care is associated with higher levels of psychological distress for the caregiver (e.g., Donaldson, Tarrier and Burns 1998, Schulz et al. 1995). These findings dovetail with the intuitive assumption that

the basic acts of caregiving can be stressful and often deplete the psychological resources of caregivers. This is not surprising considering that providing care to the elderly can restrict one's personal, social, and work lives. Many caregivers have less time to spend with their children, perform their work obligations, or even partake in leisure activities (see Gilleard et al. 1984, Kosberg and Cairl 1986, Zarit, Reever and Bachpeterson 1980). Additionally, the acts involved in caregiving are stressful. Caring for another person is particularly difficult when that person displays confusion and/or verbal and physical aggression due to dementia (Teri et al. 1992). Also, caregivers face uncertainty because the illnesses and needs of the care recipients are sometimes hard to predict (see Poulshok and Deimling 1984). As a result, studies that show caregiving increases stress for caregivers are congruent with expectations about caregiving.

While several studies show a clear relationship between elder caregiving and caregiver psychological functioning, there are also several studies that do not find a relationship between the two. These studies show that caregivers do not display higher levels of psychological distress than non-caregivers (Arai et al. 2002, Garity 1997, Haley et al. 1995, Loomis and Booth 1995, Townsend et al. 1989). These studies suggest that elder caregivers are able to adapt to their role and do not experience negative psychological effects as a result of it. This body of work is consistent with Brody's (1985) suggestion that elder caregiving is increasingly becoming a normative part of family life. Additionally, it suggests that people are resilient when it comes to managing life's stressors (Diener and Diener 1996).

Complicating the caregiving-distress debate are several studies that show psychological advantages to caregiving. In some studies, caregivers report few symptoms of psychological distress and appear to benefit from their role as caregiver (e.g., Kramer 1997, Schulz et al. 1997). These studies suggest that having more roles in society gives people a sense of purpose (see

Thoits 1983). Indeed, Marks, Lambert and Choi (2002) finds that women who begin to provide nonresidential care to a biological parent report more purpose in life than non-caregiving women. Likewise, qualitative researchers have shown that many elder caregivers are able to find or make meaning throughout the caregiving process (Ayres 2000, Farran et al. 1991, Farran 1997, Farran et al. 1999), and when they are able to do so, this meaning-making can mitigate the negative effects of caregiving (Farran et al. 1997). With regard to elder care, caregivers may also feel that they are fulfilling family obligations (Finch and Mason 1990). Importantly, caregivers' ability to identify positive aspects of caregiving is negatively associated with their depression levels (Cohen, Colantonio and Vernich 2002). Research indicates that though caregiving may be stressful, the benefits can outweigh the costs in terms of caregiver distress. For example, Kinney and Stephens (1989) examine the appraisals of caregivers of a list of daily tasks, having caregivers define these tasks as "uplifts" (i.e., an event that evokes joy, gladness, or satisfaction) or hassles. Common uplifts cited are related to the happiness of the care recipient (i.e., seeing the care recipient calm, smile, responsive, etc.). When uplifts outweigh hassles, caregivers report lower levels of distress than when hassles outnumber uplifts (Kinney et al. 1995).

Caregivers may also experience satisfaction as a result of their participation in elder care. Nolan, Grant and Keady (1996) conceptualize caregiver satisfaction in three dimensions: (1) the satisfaction that comes from the interpersonal dynamic between the caregiver and the care recipient (i.e., an improved relationship between an aging parent and his/her child); (2) the satisfaction that stems from intrapersonal dynamics of the caregiver (i.e., meaning-making or fulfilling filial obligations); and (3) the satisfaction that is derived from promoting a positive outcome or avoiding a negative outcome for the care recipient (i.e., helping an aging parent have positive interactions with a healthcare provider). Some studies document caregivers'

satisfaction. For example, Lawton et al. (1991) find that among adult children caring for their aging parents, increased caregiving behavior was associated with higher levels of caregiving satisfaction (but also with burden). In contrast, Borg and Hallberg (2006) finds that in terms of life satisfaction, frequent elder caregivers report lower levels of satisfaction with the overall quality of their lives than do less frequent caregivers or non-caregivers. Importantly, life satisfaction scores did not differ between less frequent caregivers and non-caregivers, indicating that moderate amounts of care may not have deleterious consequences on a caregiver's reports of life satisfaction. These discrepant findings reflect the importance of Nolan, Grant, and Keady's (1996) original conceptualization---it is possible to experience satisfaction in some areas of one's life and not in others and, when possible, researchers need to consider how satisfaction operates in different contexts.

There are several main problems with the studies that link elder care with psychological functioning that may have resulted in the discrepant findings mentioned above (Pinquart and Sörensen 2003). First, many of the studies use non-representative samples and are therefore not generalizable to the population (Schulz et al. 1995, Schulz et al. 1997). Second, these non-representative samples are problematic because they often have large random sampling errors associated with small sample sizes. Thus, the effects of caregiving on psychological functioning may not be shown if the effect size in the population is low (Rosenthal 1991). Third, studies considering the link between caregiving and psychological distress often ignore the positive effects that come from providing care. These effects include closeness to the care recipient and an increased sense of satisfaction for fulfilling what many consider to be a duty (Kramer 1997). As a result, caregivers may experience higher rates of stress than non-caregivers, but they may also have an increased sense of purpose and satisfaction from their role as a caregiver. Finally,

much research in the realm of psychological functioning shows the resiliency of people. That is, caregivers may experience momentary effects on their psychological or physical health but ultimately cope quite well with their roles over time (Brandtstadter and Greve 1994, Garity 1997). In an attempt to address these limitations, Pinquart and Sorenson (2003) perform a meta-analysis to incorporate findings from several scholarly articles to address the link between caregiving and psychological health between caregivers and non-caregivers. They find that the main differences between these groups were in levels of depression, stress, self-efficacy, and general subjective well-being. Specifically, caregivers had higher rates of stress and depression and lower rates of self-efficacy and general subjective well-being than non-caregivers. Yet, most of the studies in the meta-analysis were cross-sectional. As a result, the authors could not document the impact of caregiving on psychological distress over time.

Factors that Influence Caregivers' Psychological Functioning

A host of sociological factors have been shown to affect directly the psychological functioning of caregivers. Below, I describe the state of the literature that examines how the gender of the caregiver, age/health status of the caregiver, race/ethnicity of the caregiver, socioeconomic status of the caregiver, other roles of the caregiver holds (i.e., parent, employee), role relationship type of the caregiver and care recipient, caregiver perceptions of social support, coping styles of caregivers, and health status of the care recipient, and whether the care recipient lives with the caregiver or not affect caregivers' levels of psychological functioning.

Gender

Considering that women perform the majority of elder care, it would be logical to conclude that they may also have higher rates of psychological distress. Based on a stress-and-coping model of caregiving (see Pearlin et al. 1990), female caregivers have more stressors and

fewer resources than male caregivers, and this results in lower levels of psychological and physical health among female caregivers compared to male caregivers. Yet, empirical support for this claim is also mixed. Some studies find gender differences in psychological distress among caregivers wherein female caregivers are more distressed than male caregivers (e.g., Vitaliano, Zhang and Scanlan 2003), but other studies do not find such gender differences (e.g., Yee and Schulz 2000). Pinquart and Sorenson (2006) cite similar limitations associated with these studies as those discussed above (i.e., small sample sizes may obscure gender differences).

Age and Health Status of Caregiver

Research that examines the relationship between the age of the caregiver and caregiver's psychological functioning is mixed. Some scholars suggest that older caregivers may be better off in terms of psychological functioning than younger caregivers as older caregivers may have better networks of support, more financial resources, and more experience with caregiving than younger caregivers. This suggestion is consistent with the findings of Butler et al. (2005)who find that caregiver age and depression levels are inversely related. Alternatively, other scholars suggest that older caregivers may have worse levels of psychological functioning than younger caregivers for two reasons. First, older caregivers may be more likely than younger caregivers to have to juggle the competing demands of multiple roles. Second, older caregivers may have more health problems than younger caregivers. Either of these reasons could increase the burden of caregiving for older (relative to younger) caregivers. There is more support in the literature for the second prediction (Pinquart 2001, Schulz et al. 1995, Vitaliano, Zhang and Scanlan 2003). Poor health status of the caregiver (especially if it is a function of providing care) has been shown to be associated with increased levels of stress (e.g., De Frias, Tuokko and

Rosenberg 2005). As age is often a predictor of health status, the effect of age on caregivers' psychological functioning may work through caregivers' health status.

Race/Ethnicity of Caregiver

As the U.S. population is continuing to age, people older than 65 are expected to comprise 20 percent of the total population by 2050. Demographers predict that the percentage of racial and ethnic minority elders will increase at a faster rate than that of non-Hispanic white elders. The elderly white population is expected to double by 2050. In contrast, the African American elderly population is expected to quadruple, while the Hispanic and Asian elderly populations are predicted to increase to about seven times their current size (U.S. Census Bureau 2000). These demographic trends have spawned a considerable body of research about the psychological functioning of minority caregivers. Some current research suggests that there are no differences in levels of depression between white and African American caregivers of adults (Cox 1993, Cox 1999, Knight and McCallum 1998, Knight et al. 2000, White, Townsend and Stephens 2000, Young and Kahana 1995). Alternatively, other studies show that white caregivers are more depressed than African American caregivers (Farran et al. 1997, Haley et al. 1995, Lawton et al. 1992, Miller et al. 1995). Results from a meta-analysis indicate that Asian-American caregivers and Hispanic caregivers are more depressed than white caregivers (Pinquart and Sörensen 2005). Comparing minority caregivers to each other, some research suggests that Hispanic caregivers have higher levels of depression than African American caregivers (Cox and Monk 1990). In many of these studies, race is used as a proxy for culture. That is, the explanation given for why some minority caregivers have heightened levels of depression relative to white caregivers is that giving care to the elderly is seen as a cultural obligation, and

some cultural norms and institutional discrimination may preclude these minority caregivers from seeking formal or informal support for providing care (Janevic and Connell 2001).

As data for this dissertation will be drawn from an Australian sample, it is relevant to consider the psychological functioning of Aboriginal caregivers. From a legal standpoint, Aboriginal citizens are defined as the "Aboriginal race of Australia," or the population that was indigenous to the continent prior to colonization. There is a dearth of research about the psychological functioning of Aboriginal caregivers. Aboriginal people compose only three percent of the Australian population (Australian Bureau of Statistics 2011), and these people are less likely than the white population to reach old age (Pollitt 1997). A notable exception by Smith et al. (2011) shows that while Aboriginal caregivers of elders with dementia cite similar reasons for caregiving as the dominant caregiving population (i.e., cultural and filial obligations), there is a scarcity of community resources available to these caregivers. Especially as many of the Aboriginal caregivers live in remote parts of Australia, they either do not have access to community programs to support them or the community care programs provide limited services (Bell, Lindeman and Reid 2015). This lack of community support, in turn, is related to increased stress of Aboriginal elder caregivers. These studies suggest the importance of considering Aboriginal status as a covariate when modeling the effects of caregiving for an Australian sample.

Socioeconomic Status of Caregiver

People of lower socioeconomic status are more likely to engage in informal elder caregiving than people of higher socioeconomic status (Schulz and Sherwood 2008). This is likely due to the high cost of formal care and the lack of access to insurance programs that may help low-income individuals offset these costs. While the negative effects of the stress of

caregiving on caregivers' physical health is exacerbated for low-income caregivers relative to high-income caregivers, the opposite is true for psychological functioning. Marks et al. (2008) find that low-income adult daughters who transition into caregiving have fewer depressive symptoms, less hostility, and better psychological well-being than high-income daughters. Low-income sons who transition into caregiving report higher levels of personal mastery compared to high-income sons. The authors interpret these findings to mean that people in lower socioeconomic status positions may have a greater sense of familism (i.e., a sense of responsibility and obligation to help family members) than people in higher socioeconomic status positions. It is also possible that people in higher socioeconomic status positions may be juggling the dual responsibilities of caregiving and paid labor. As a result, their lower levels of psychological functioning relative to people in lower socioeconomic status positions may be a function of role conflict as opposed to caregiving itself.

Other Roles of Caregivers

Caregivers often have a variety of other social roles that they perform in addition to providing care for the elderly. Role theorists suggest that this may lead to role conflict (i.e., the competing demands of each role make it difficult to fulfill both), which can lead to stress (Goode 1960, Kahn et al. 1964). In contrast, the sociological literature on the relationship between role-identities and well-being suggests that more roles are linked to *less* distress (Thoits 1983), up to a certain point (Thoits 1986). The relationship between role-identities and well-being is curvilinear----the advantages of multiple roles begin to dissipate once people hold many role-identities. The caregiving literature focuses on two role-identities in particular that people may hold in conjunction with their caregiving role: being a parent and an employee. Below, I

summarize the current state of the research on how simultaneous identification with each of these role-identities and elder caregiving influences caregivers' psychological functioning.

Being an Elder Caregiver and a Parent

As life expectancy is increasing and people are delaying the age at first childbirth, many people are now "sandwiched" in between taking care of a child and an aging parent. Theoretically, role conflict may be likely to occur in this situation, as taking care of an aging parent may preclude some of the responsibilities of childcare. If this is true, caregivers would experience higher levels of stress after becoming a "sandwiched caregiver." The fact that half of all sandwiched caregivers struggle with anxiety and depression (Brody 1985) lends credence to this idea. Yet, Loomis and Booth (1995) find that transitioning into sandwiched caregiving has no effect on caregiver psychological well-being over-time. Likewise Dautzenberg et al. (1999) find that the acquisition of a sandwiched caregiving role was not associated with increased caregiver distress. In line with Thoits's (1983, 1986) original idea, women with the highest levels of distress are those who do not hold any major social role (Dautzenberg et al. 1999). This work suggests that caregiving could actually reduce distress among caregivers who have few social roles.

Being an Elder Caregiver and an Employee

Many caregivers balance the responsibilities of caregiving with work obligations. Again, role conflict may be likely to occur as the demands of work may interfere with a person's ability to care for his/her aging parents, resulting in work-to-family conflict. Alternatively, if a person faces significant caregiving responsibilities and is unable to sleep through the night (see Creese et al. 2008, McCurry et al. 2007), or is often interrupted during the workday to attend to caregiving responsibilities, this can result in substantial amounts of family-to-work conflict. In

either form of conflict, stress is hypothesized to occur (Goode 1960, Kahn et al. 1964). While employment reduces the chances that one will become a caregiver (Dautzenberg et al. 2000) and caregiving and work responsibilities often conflict with each other (Aneshensel et al. 1995, Barling et al. 1994, Gignac, Kevin Kelloway and Gottlieb 1996, Gottlieb, Kelloway and Fraboni 1994, Neal et al. 1993, Scharlach 1994, Stephens, Franks and Atienza 1997, Stephens et al. 2001), this conflict does not result in decreased psychological functioning of caregivers (Martire and Stephens 2003). Several studies show that employed caregivers report less caregiver strain and better emotional health than unemployed caregivers (Brody et al. 1987, Miller 1989, Skaff and Pearlin 1992, Stoller and Pugliesi 1989). Additionally, one study shows that there are psychological advantages to holding both roles, as feelings of accomplishment and confidence in the caregiving role can spill over into the employee role and vice versa (Stephens, Franks and Atienza 1997). Importantly, time at work may provide respite and/or distraction from the demands of caregiving, which may result in improved psychological functioning of employed elder caregivers (Brody 2000, Scharlach 1994).

Being an Elder Caregiver, a Parent, and an Employee

While most research that examines the multiple roles of caregivers focuses on caregiving and parenting or caregiving and working in the paid labor force, a handful of studies have examined the psychological consequences of being an employed elder caregiver who is also a parent to a young child. Again, insights from role conflict suggest that the more roles a person has, the more potential there is for conflict and, in turn, negative outcomes such as stress. There is support for this hypothesis---several studies find that employed, sandwiched caregivers report higher levels of stress than employed caregivers who only have one caregiving role (Chapman, Ingersoll-Dayton and Neal 1994, Fernandez 1990, Fredriksen-Goldsen and Scharlach 2001).

These findings also support Thoits's (1986) notion that the relationship between roles and distress is curvilinear. That is, the competing demands of paid labor, elder caregiving, and childcare may have deleterious consequences for caregivers' psychological functioning but occupying only two of those roles does not.

Role Relationship Type

Informal elder care occurs in a variety of relationships. Caregivers can be adult children, adult children-in-law, spouses/partners, other relatives (i.e., siblings or adult grandchildren), and even non-kin. While this dissertation will focus on one of these specific relationships (i.e., adult children caring for their aging parents, also called filial care), research has shown that the relationship that the care recipient has with the caregiver is associated with caregivers' levels of psychological functioning (Biegel, Sales and Schulz 1991). The most common relationship comparisons in the caregiving literature occur between spousal caregivers and filial caregivers. Overall, spousal caregiving has been shown to have more negative effects in terms of psychological functioning than filial caregiving (George and Gwyther 1986b, Seltzer and Li 2000, Young and Kahana 1989). For example, Barber and Pasley (1995) find that spousal caregivers report more restrictions of social activities than filial caregivers, and the authors argue that these restrictions may increase stress levels for spousal caregivers because they cannot buffer the negative effects of the demands of their caregiving activities through social activities. Likewise, Pinquart and Sörensen (2003) find that differences in stress and depression levels between caregivers and non-caregivers are greater for spousal caregivers than filial caregivers. They explain that spousal caregivers have higher objective levels of burden and fewer psychological and physical resources to help them cope with stress than do filial caregivers.

While most research that examines differences in psychological functioning based on role relationship type focuses on comparing spousal and filial caregivers, a limited body of research explores other role relationship types, albeit with inconsistent results. A handful of studies test differences in psychological functioning between those who give care to a parent and those who provide care to a parent-in-law. Spitze et al. (1994) find higher levels of stress for caregivers providing care to a parent than for those who provide care to parents-in-law, while Ingersoll-Dayton, Starrels and Dowler (1996) find no differences in stress levels between these two role relationship types. Further, some research suggests that providing care to an adult child is associated with increased stress relative to other caregiving relationships (Biegel, Sales and Schulz 1991), but other studies do not find support for this claim (Neal et al. 1993). The inconsistent findings in this body of research suggest that researchers need to consider role relationship quality in addition to relationship type (Lawrence, Tennstedt and Assmann 1998, Williamson and Shaffer 2001).

Social Support

Social support refers to the perception or reality that one has assistance available from other people in a support network (Cohen and Wills 1985). Support can come in many forms (i.e., emotional support or resource-based support). Social support is hypothesized to buffer the negative effects of a variety of life stressors (Cobb 1976). Extant research has substantiated this claim for the stress of elder caregiving (Baillie, Norbeck and Barnes 1988, Haley et al. 1987, Zarit, Reever and Bachpeterson 1980). That is, providing care is associated with lower levels of stress (Ergh et al. 2002), burden (Thompson et al. 1993), depression (Crespo, López and Zarit 2005, Li, Seltzer and Greenberg 1997), and anxiety (Parks and Pilisuk 1991) for caregivers who report higher levels of social support than for caregivers who report lower levels of social

support. Despite the advantages of social support for elder caregivers, giving care to adults can be socially isolating (Cantor 1983, Hayes et al. 2015, Moritz, Kasl and Ostfeld 1992), which often means that caregivers have lower levels of social support than non-caregivers (Almberg et al. 1998).

Coping Style of Caregiver

Coping styles refer to individual strategies to solve personal and interpersonal problems with a particular focus on reducing stress (Lazarus 1966). Coping styles are thought to be adaptive (wherein stress levels decrease as a result of the strategy employed) or maladaptive (wherein stress levels increase) (see Zeidner and Saklofske 1996). There are typically three types of adaptive coping styles: emotion-focused coping, problem-focused coping, and appraisal-focused coping (Pearlin and Schooler 1978). Emotion-focused coping aims to change emotional reactions to a problem. Problem-focused coping is a behavioral strategy that is directed towards reducing or eliminating a stressor. Appraisal-focused coping is a cognitive strategy that involves attempting to change the way one thinks about a stressor.

There are many forms of maladaptive coping (i.e., avoidance, self-medication). These forms of maladaptive coping are aimed at reducing the symptoms of a stressor rather than changing the emotional, behavioral, or cognitive reactions to a stressor (Carver, Scheier and Weintraub 1989). While the research on coping styles of caregivers shows that the use of maladaptive coping strategies is associated with higher levels of caregiver stress (Goossens et al. 2008), burden (Wright et al. 1991), anxiety and depression (Vedhara et al. 2001) and lower levels of quality of life (Kershaw et al. 2004) relative to caregivers who do not use maladaptive strategies, the research on the effectiveness of adaptive coping styles is less clear. Many studies are supportive of the theoretical prediction that adaptive coping styles are associated with

reduced psychological distress (Cooper et al. 2006, Goode et al. 1998, Mausbach et al. 2006, Morano 2003). Yet, other studies show that the use of problem-focused coping styles (Wright et al. 1991) and emotion-focused coping styles (Sanders-Dewey, Mullins and Chaney 2001) are linked to increased levels of caregiver stress. Alternatively, other studies find no relationship between coping style and caregiver distress (Webb et al. 1998).

These discrepant findings may be a result of different time frames of studies. For example, some studies show that emotion-focused coping is helpful in the short-term, but emotion-focused, long-term coping involves continuous rumination about negative emotions which is linked to negative outcomes (Nolen-Hoeksema, Parker and Larson 1994, Nolen-Hoeksema 2000). Additionally, the discrepant findings may be a selection effect issue. That is, caregivers in particularly stressful caregiving situations may be the most likely to try various coping strategies, yet they are still stressed due to their situation, which could result in the counterintuitive findings described above.

Care Recipient Health

There are a variety of medical conditions that may result in the need for informal care from family members---dementia, Alzheimer's disease, cancer, etc. While aging is not a medical condition, the frailty and limitations to mobility that are associated with old age may promote the need for care from family members. Much of the caregiving literature is focused around caring for aging family members with Alzheimer's or dementia. Relatively few studies compare the impact of the care recipient's medical condition on caregivers' psychological functioning. An exception is research by Ory et al. (1999) who find that dementia caregivers report higher levels of caregiver strain, mental health problems, and family conflict than do non-dementia caregivers. One main reason for this finding is that dementia caregivers spend significantly more time in

caregiving activities than non-dementia caregivers, though this does not fully explain why dementia caregivers have more negative outcomes than do non-dementia caregivers. Additionally, Kim and Schulz (2008) find that caregivers of people with cancer or dementia have higher levels of distress than caregivers of the frail elderly or people with diabetes. Therefore, the medical cause of caregiving is related to the psychological functioning of caregivers, and as Pinquart and Sörensen (2003) note, this could be a reason for the discrepant findings in the caregiver-psychological functioning literature.

Residential Care vs. Non-residential Care

People can provide informal care to aging parents in multiple places: in their own home (i.e., the care recipient lives with the caregiver), in the care recipient's home (i.e., the care recipient does not live with the caregiver), or elsewhere (i.e., the care recipient may live with another adult child and these two siblings split care of the aging parent). According to the National Alliance for Caregiving and the AARP (2009), half of all care recipients live in their own home, almost a third live with their family caregivers, and four percent live in a nursing home. While Brody (1985) argues that elder care has become a normative experience for families, having a care recipient move into one's residence may be particularly stressful for caregivers. Deimling et al. (1989) find that filial caregivers who share a household with their aging parent(s) report higher levels of activity restriction but less relationship strain than filial caregivers whose household is separate from their care recipient. Examining this from a longitudinal perspective, Marks, Lambert and Choi (2002) find that transitioning from not giving care to providing care for a biological parent outside of one's residence is associated with increased levels of caregiver depression, though transitioning to providing care for a biological parent within one's household is not associated with caregiver depression levels. These results

indicate that caregivers who provide care outside of their residence may experience a psychological disadvantage by not having the care recipient live in their home.

Conclusion

The purpose of this chapter was to provide an overview of relevant caregiver statistics and how elder caregiving is related to important life outcomes. While research regarding the relationship between elder caregiving and caregivers' labor market position and physical health is unambiguous, the relationship between elder caregiving and caregivers' psychological functioning is much less clear. One reason for these discrepant findings relates to the multitude of ways that studies conceptualize psychological functioning (i.e., through various measures of psychological distress and psychological well-being). People have the ability to experience positive and negative affective states simultaneously. As research documents, caregiving can be stressful, but it can also be rewarding. Therefore, it is appropriate to study both sides of psychological functioning (psychological distress and psychological well-being) when considering elder care.

Another limitation of previous research relates to the conceptualization of elder care. Many studies define people as either caregivers or not or assume that time spent in elder care is static throughout an individual's life course. This dissertation seeks to improve upon these conceptualizations by identifying patterns of elder care and various transitions into caregiving arrangements. Through unique methodological tools, I seek to understand how these patterns and transitions are related to the psychological functioning of caregivers over time. In the following chapter, I explain how insights from the life course perspective, role theory, and stress models will be used to move beyond these previously limited understandings of the effect of participation in elder care on the psychological functioning of caregivers.

CHAPTER 3

THEORETICAL FRAMEWORK

The purpose of this chapter is to provide a theoretical framework for this dissertation that will inform the stated hypotheses for research questions presented throughout the chapter (summarized in Tables 1 and 2). I begin by explaining the importance of studying elder care through a life course perspective (Elder 1998). Then, I describe role theory and its utility in considering the social psychological impacts of providing elder care. Next, I explain the stress process model as the dominant perspective in the understanding of psychological distress and well-being. I explain competing perspectives (i.e., adaptation vs. wear-and-tear) regarding the relationship between caregiving and the psychological functioning of caregivers that are specific to the caregiving literature. I then present two broad research questions that suggest different ways of examining the relationship between elder care and psychological functioning over time. I couch expectations and hypotheses for these questions in terms of role theory, the stress process model, and the two perspectives of caregiving. In each of these, I allow for the possibility that psychological functioning may be a multidimensional concept, indicating that caregivers may have the ability to experience both negative and positive outcomes as a result of caregiving.

Life Course Perspective

I conduct this research against the backdrop of life course theory (Elder 1998). The life course perspective suggests that individuals' lives should be studied within the full context of their experiences, as events that occur during different points in the life course have differential effects on people's developmental trajectories. The first principle of the life course perspective

states that historical time and place matter (Elder 1998). An individual's life course is shaped by the historical moments and places in which he/she lives. A clear example of this comes from comparing how the responsibility for elder caregiving has changed over time. In the past, people had more siblings with whom to share the responsibility of elder caregiving. Additionally, family members tended to live closer to one another. So not only were there more children to care for aging parents, there were more children who lived close to their aging parents. As a result, responsibility for elder care could be distributed among several adult children, as opposed to one or two, which is more common today. Thus, trends regarding the average number of adult children with elderly parents in a particular historical moment and where those adult children live in geographical space greatly affect the shared responsibility of elder care and the lived experiences of caregivers.

The second principle of the life course perspective suggests that the timing of a life transition matters because it affects subsequent life transitions (Elder 1998). That is, the impact of a life transition is contingent on when that event occurs in one's life. For example, elder care has taken on new meaning to people as they have delayed childbirth. Having children at later ages (an important life transition) means that people must balance caring for their aging parents while raising their children, resulting in the "sandwich generation" (Abaya 2004). Thus, elder caregiving is an important life transition, but taking a life course perspective allows for the consideration that elder caregiving is particularly important at certain times in the caregiver's life. Specifically, elder caregiving may prove particularly difficult during times when the caregiver must also care for his/her child.

The third principle of the life course perspective states that the fates of a society's members are inextricably linked. People live in a network of shared relationships that are

affected by the geographical and temporal moment in which they live (Elder 1998). The (mis)fortune of one member is shared in the social relationships this member has with others. The entire notion of elder care is grounded in this principle. Many family members need their relatives to care for them as they age. Problems with health are often shared within familial relationships. People who care for aging parents or disabled relatives do so because of the shared relationship they have with family members (Glenn 2010). Thus, taking a life course approach to elder caregiving suggests that when adults reach old age and need care or face disabilities the lived realities of their friends and family members are affected.

Though the life course perspective stresses the importance of social factors in shaping one's life, it is not an entirely top-down perspective. The paradigm allows room for human agency (the fourth principle) by stating that people make their own life course through their choices, though these choices are affected by historical, social, and geographical limitations or opportunities (Elder 1998). Thus, though it is often viewed as a responsibility, the decision to take part in elder care is a choice that individuals make. The choice to care for a disabled spouse, aging parent or other relative certainly affects a caregiver's life trajectory.

Taking the four principles of the life course perspective together shows that individuals' lives are dynamic. Studies of the life course must take this into account. With regard to the relationship between elder care and psychological functioning, insights from the life course perspective suggest the importance of studying how the involvement in elder care over time and the transition into a new caregiving role may affect caregivers' psychological functioning. Outside of the life course perspective, there is an entire field dedicated to the study of roles and psychological functioning. In the following section, I describe this theoretical tradition (role theory) and its competing approaches. Later, I use insights from role theory that are set against a

backdrop of the life course perspective to suggest how involvement in a role over time and transitioning into a role affects psychological functioning.

Role Theory

Role theory (e.g., Parsons 1951) is a social psychological theory that suggests that individuals act out various socially defined categories or positions (i.e., mother, elder caregiver). A social role is a set of expectations, norms, and behaviors associated with acting out a position. One of the main structural-functionalist ideas behind role theory is that the division of labor in society often takes place between people enacting various roles. From a functionalist view, these roles help society to remain stable by making sure work is done and increasing the predictability of social interaction. According to the theory, people conform to role requirements in anticipation of either rewards or punishments or simply due to the satisfaction that comes with prosociality.

A key insight of this theory is that as people enact multiple roles, there is a potential for role conflict, wherein performing the duties of one role precludes a person from successfully accomplishing the expectations associated with another role. This *role conflict hypothesis*, or *scarcity approach*, rests on the assumption that the totality of a person's roles are over-demanding and, as a result, stress occurs (Goode 1960). In this conceptualization, no role conflict occurs when people are able to fulfill role obligations and comply with the expectations of two different roles. Alternatively, when individuals are unable to fulfill role expectations due to conflicts between these roles, anxiety and guilt often follow (Barnett and Baruch 1985). In Goode's (1960) conceptualization there are two sources of role conflict. First, role conflict can stem from the incompatibility of role demands and individuals' inability to be in two places at once. Second, role conflict can emerge beyond time and place constraints and instead may be a

result of competing salience across roles. Goode (1960) argues that as people take on more roles, they must prioritize one over the other, and one role may be seen as more important than another. Often, role conflict stems from both of these sources. For example, Suitor and Pillemer (1994) find that husbands can be unsupportive when wives begin elder caregiving, as this new role increases the number of time and place conflicts (i.e., wives may not be able to cook dinner for their husbands if they are tending to an aging parent's health needs) and also leads wives to prioritize their caregiving role over their spousal role. The long-term consequences of role conflict include poor physical health (Grandey and Cropanzano 1999), decreased job satisfaction (e.g., Boles, Howard and Donofrio 2001, Kim, Murrmann and Lee 2009), increased psychological distress (e.g., Pomaki, Supeli and Verhoeven 2007), and decreased well-being (e.g., Jones, Norman and Wier 2010).

The scarcity approach is challenged by two extensions of role theory. First, the *role accumulation hypothesis* (Sieber 1974) suggests that in addition to the costs of enacting multiple roles, there are also benefits, and these benefits tend to outweigh the costs. Benefits of multiple roles include status enhancement, status security, ego gratification, and role privileges. Second, the *role expansion hypothesis* also suggests that multiple roles can be beneficial (Marks 1977) provided that people are committed to those roles. People are likely to be stressed as a result of the enactment of multiple roles when they must perform roles that they are not committed to and do not enjoy. Thus, according to the role expansion hypothesis, stress may occur as a result of not being committed to a role, but stress is not expected to occur if a person is committed. Thus, the role accumulation and expansion hypotheses suggest benefits of multiple roles but through different mechanisms. The role accumulation hypothesis suggests that multiple roles may be beneficial due to the resources one could potentially acquire from them. The role expansion

hypothesis, in turn, suggests that the benefits of multiple roles are a result of a person's commitment to them. Both the role accumulation and role expansion perspectives are unique in that they suggest potential benefits of multiple roles instead of only disadvantages, as the scarcity approach hypothesizes.

People engage in a variety of roles throughout the life course. The early life course sets the stage for the enactment of certain roles. Traditional gender role socialization, for example, teaches young girls caregiving skills, while young boys are encouraged to develop skills useful in the labor market. Women then become more likely to participate in a variety of caregiving roles than men, as societal expectations for gender roles and caregiving roles are inherently interconnected. That is, women are expected to participate in caregiving roles when needed, and there is the assumption that those occupying caregiving roles are women. Therefore, men's and women's experiences in caregiving are qualitatively different (e.g., Long and Harris 2000, Russell 2007). Men who participate in care may have to learn a new caregiving skillset, as they have not been socialized to do so, while caregiving for women may compound with other forms of gender inequality (i.e., less earning and political power relative to men) to reproduce gender hierarchies (Nancy 2001). In either case, stress may be a likely result. In order to consider how stress emanates from caregiving, I rely upon insights from the stress process model, explained below.

Stress Process Model

The stress process model (Pearlin et al. 1981) dominates the sociological research on mental health and mental illness. The model conceptualizes how social stress influences health outcomes while considering the importance of the social context and resources of individuals. Social stress stems from people's social environments and relationships with others. Therefore,

social stress is a direct result of an individual's time and place in history (i.e., life course) and the social roles they occupy. A key component of the stress process model is the notion of a stressor. Stressors are events that trigger pressures or strains in an individual's life. Stressors can be specific life events (i.e., moving to a new city) or more long-lasting events (i.e., chronic illness, trauma, etc.). It is notable that Pearlin et al. (1981) specifically mentioned "being drawn into a demanding caregiving role" as an example of an enduring stressor (206). The effect of stressors on outcomes of interest (i.e., psychological functioning) depends on the individual's social context and resources.

In the example of caregiving, a host of context factors regarding the caregiving situation, the caregiver and/or care recipient are associated with elevated levels of caregiver stress. These context factors suggest that the effect of a stressor on an outcome is not the same for all people, and that research regarding the relationship between stressors and psychological functioning needs to include contextual factors that may influence this relationship (i.e., caregiver gender). For a review of these context factors, see Chapter 2. According to the stress process model, context factors are important to consider as they are often related to caregiver resources. In the case of caregiving, women may have more deleterious outcomes than men as a result of their limited economic resources (Pearlin et al. 1990). As physical health can be a resource that provides people with the ability to perform acts of caregiving more easily, younger caregivers may have fewer harmful outcomes than older caregivers. Additionally, social support is a resource on which many caregivers rely to help alleviate the burden of care. Therefore, caregivers who perceive less social support may be less able to cope with their caregiving role than caregivers who report high levels of social support. Therefore, based on the stress process

model, a person's ability to cope with a stressor is patterned by a host of contextual factors that are often related to their resources.

Wear-and-Tear Perspective

Specific studies of caregiving often rely upon two competing hypotheses that predict the effect of caregiving on caregivers' psychological functioning. The "wear-and-tear hypothesis" of caregiving (Haley and Pardo 1989, Pearlin et al. 1990) suggests that the longer a caregiver provides care, the more psychologically straining the care will be. This hypothesis assumes that caregiving is inherently stressful and that there are few benefits for providing care. These deleterious effects of caregiving are thought to accumulate over time to create deleterious outcomes for caregivers in terms of their psychological distress levels. Cross-sectional support for the wear-and-tear hypothesis has been documented by studies that show harmful psychological outcomes for caregivers relative to non-caregivers (e.g., George and Gwyther 1986a, Pruchno and Resch 1989, Talkington-Boyer and Snyder 1994). A better test of the wear-and-tear hypothesis, however, comes from longitudinal studies that follow caregivers over time, as these studies are able to track changes in caregiver's psychological functioning as care increases. Several of these studies support this hypothesis---psychological distress increases for caregivers over time (Bookwala 2009, Gaugler et al. 2000, Goode et al. 1998).

Adaptation Perspective

Other studies, however, find modest (if any) effects of caregiving on distress. These studies suggest that people are able to create coping strategies that enable them to manage the stressors associated with caregiving. These studies are based on what is known as the "adaptation hypothesis" (Lazarus and Folkman 1984, Olson et al. 1983, Silver and Wortman 1980). This hypothesis suggests that a new process (such as caregiving) can be initially stressful,

but ultimately people are resilient and able to adapt quickly to a new situation. They learn ways to manage stress, and as a result, their new role as a caregiver has little impact on their levels of psychological functioning. There are several cross-sectional studies and longitudinal studies (e.g., Arai et al. 2002, Johnson and Catalano 1983, Liu and Dupre 2014, Townsend et al. 1989) that show caregiving is associated with little or no effects on caregiver's psychological functioning, which supports the adaptation hypothesis.

Current Study

This study aims to add to the literature on the relationship between elder care and caregiver psychological functioning by asking two research questions. These questions are based in the life course perspective, which suggests examining an individual's life within the full context of his/her experiences (i.e., longitudinally). I provide competing expectations and hypotheses for these questions that are informed by role theory, the stress process model, the wear-and-tear hypothesis of caregiving, and the adaptation hypothesis of caregiving. I will test these expectations and hypotheses through two unique methodologies (explained more thoroughly in the following chapter). Broadly, I ask the following two research questions:

> Research Question 1: How do patterns of elder care affect trajectories of caregiver psychological functioning?
>
> Research Question 2: How do transitions into different forms of filial caregiving affect a caregiver's psychological functioning over time?[2]

Both of these research questions incorporate insights from the stress process model and role theory into the life course paradigm. The life course perspective suggests that being a

[2]It is notable that I will be examining elder care in different ways to address these research questions. For the first question, I will consider elder care broadly by focusing on the time people spend caring for aging parents, spouses, and other relatives. For the second research question, I will focus on a specific type of elder care---filial care. The measures used to answer the first research question preclude me from examining the relationship between the caregiver and the care recipient, but I am able to do so for the second research question.

caregiver can be viewed as a potentially stressful role that people may spend different amounts of time in during their lives. As such, both research questions are informed by the life course perspective by considering the need to understand caregiving over time. The first research question, in particular, seeks to establish patterns of elder care, rather than assuming it to be a static process. To date, no research has documented patterns of care, which from a life course perspective is important to do, as Elder (1998) suggests understanding individuals' life experiences throughout their lives and contexts of experiences, rather than at a single point in time. Following life course principles, it is important to understand that the consequences of caregiving on psychological functioning are likely connected to a host of other social roles (i.e., gender) and developmental timing, or what stress process models term a context factor. Thus, each research question will have expectations or hypotheses (described below) that aim to understand the impact of gender on the relationship between caregiving and psychological functioning.

Patterns of Elder Care and Caregiver Psychological Functioning

The first research question aims to understand how patterns of filial care are related to trajectories of caregivers' psychological functioning. To answer this question, I will use a unique method, group-based trajectory modeling, to document patterns of caregiving and psychological functioning over time. I will then use multinomial logistic regression to show the effects of membership in patterns of elder care on the likelihood on membership in patterns of psychological functioning. The group-based approach allows for the identification of subpopulations of caregivers within the data. Typical statistical models regress individuals toward the mean, thereby rendering different experiences as a relatively homogeneous one that

best fits the data. The novelty of the group-based approach is that many different patterns of a social process (in this case filial caregiving and psychological functioning) can be identified.

This is the first study of its kind to examine trajectories of both elder care and caregiver psychological functioning. To date, three studies have identified trajectories of caregiver psychological distress over time. Choi et al. (2012) identify trajectories of psychological distress of people who provide care to relatives with malignant brain tumors. They find two trajectories of depressive symptoms: caregivers who have high levels of depression initially that decrease over time and people who have consistently low levels of depressive symptoms. With regard to anxiety, Choi et al. (2012) find a high-decreasing and a low-decreasing pattern. In terms of burden, Choi et al. (2012) show high, moderate, and low-decreasing burden trajectories. Caregivers are more likely to belong to the high depressive symptom trajectory when they have lower income, younger age, and less social support than when they have higher income, older age, and more social support. Younger caregivers and caregivers with less social support are more likely to belong in the high anxiety trajectory than older caregivers and caregivers with more social support respectively. Overall, Choi et al. (2012) argue that their results are supportive of the adaptation hypothesis, as caregivers in the study typically followed a trajectory of decreasing distress.

In contrast, Lambert et al. (2012) use group-based trajectory modeling to identify patterns of adjustment for caregivers of cancer survivors. These researchers track caregivers from six months after the cancer diagnosis to two years after the diagnosis. They identify three patterns of anxiety trajectories (no anxiety, chronic/borderline anxiety, and chronic/clinical anxiety), and three depression trajectories (no depression, sustained depression, and chronic depression). Overall, their results suggest that most caregivers maintained their baseline levels of anxiety or

depression. They find that higher emotional/informational support is predictive of membership in the no anxiety and no depression trajectories. These results are in line with the stress process model of caregiving that suggests that the relationship between caregiving and stress is largely explained by social support (see also Bigatti et al. 2011, Nijboer et al. 2001)

Tang et al. (2013) identify trajectories of depressive symptoms for caregivers providing end-of-life care to a terminally ill family member using latent class analysis. They find four distinct trajectories: endurance, resilience, moderately symptomatic, and chronic. The endurance trajectory is characterized by individuals who did not score as "clinically depressed" on the Center for Epidemiological Studies Depression Scale. Depression scores for members of the resilience trajectory are curvilinear; they were at a high level 180 days prior to the patient's death, lowered after that, and then rose again within 90 days of the patient's death. In both the moderately symptomatic and chronic trajectories, depression scores increased steadily over the course of the study, with the chronic trajectory having higher depression scores than the moderately symptomatic. These results suggest that some caregivers are able to adapt, while others experience the wear-and-tear of caregiving. One of the main differences between these groups is their levels of psychological resources in terms of meaningfulness of providing care and the manageability of care. Having low levels of psychological resources predict membership in the moderately symptomatic and chronic trajectories. Overall, the results from these three studies are inconclusive: one supports the adaptation hypothesis, one supports the wear-and-tear hypothesis, and one identifies trajectories that support each hypothesis. Thus, more work needs to be done in this arena to help elucidate trajectories of psychological functioning, while also considering elder care as a dynamic phenomenon that has patterns as well. Therefore, I ask:

> Research Question 1: How are patterns of elder caregiving related to patterns of psychological functioning?

The relationship between elder care and psychological functioning differs by gender of the caregiver. Women perform significantly higher amounts of caregiving than do men. They are also more likely than men to care for people with severe disabilities. As a result, women often experience more deleterious effects in terms of their psychological functioning as a result of their participation in caregiving than do men (e.g., Vitaliano, Zhang and Scanlan 2003). Men, in turn, are not socialized to provide care. Therefore, participating in a caregiving role may be particularly stressful for men. Therefore, men's and women's caregiving experiences may be qualitatively different and as such, they should be examined separately. As such, I ask the following two questions:

> Research Question 1a: How are patterns of elder caregiving related to patterns of psychological functioning differently for female caregivers compared to female non-caregivers?
>
> Research Question 1b: How are patterns of elder caregiving related to patterns of psychological functioning differently for male caregivers compared to male non-caregivers?

This project is unique in that it is the first study of its kind to establish the empirical realities of caregiving. Asking these questions will necessitate discovering patterns of both elder care and psychological functioning for both men and women. Since these patterns have not been identified for these data yet, it is impossible to make formalized hypotheses about these relationships. Instead, I will suggest expectations for what I might discover. These expectations will combine insights from the life course perspective, role theory, and the stress process model.

Expected Patterns of Elder Care

I expect that there will be several patterns of care. First, I expect that there will be a large group of respondents who do not participate in elder care across the study period. I also suggest that there will be a group of people who spend consistently low amounts of time in elder care.

For example, these people may spend an hour or two a week helping their aging relatives with tasks like yard work and house repairs. I also expect that there will be a group of people who increase their time spent in elder care throughout the course of the study period. This is congruent with many people's experiences in care---they begin providing small amounts of care and as the health of the care recipient deteriorates, their time in care increases. Another pattern that may emerge is a group of people who begin the study providing moderate amounts of care, and this time spent in care may increase over time (perhaps due to the health needs of the care recipient).

I also think that there may be a group of people whose time spent in elder care decreases over time. This could be due to three factors. First, time spent in elder care may decrease over time if the health of the care recipient improves. For example, an elder who breaks his hip may need considerable care, but as his physical well-being improves, the need for care declines. Second, a caregiver's time spent in elder care may decline as a result of the entrance of the care recipient into a formal caregiving arrangement (i.e., nursing home). Third, the time one spends in elder care may decline over time due to the death of the elder.

Expected Patterns of Psychological Functioning

Based on previous research, I expect to find several patterns of psychological distress and psychological well-being. For example, Choi et al. (2012) document that there are some caregivers who have high levels of depression at the onset of the study, and these levels decrease over time. They also show that there is a group of people who have consistently low levels of depressive symptoms. Based on this study, I expect that there will be a variety of patterns of distress and well-being---some that fluctuate over time and some that remain stable over time. For example, some people may have increasing levels of psychological distress or well-being

over time, while others may have consistently high or low levels of distress or well-being over time.

Expected Relationships between Patterns of Elder Care and Psychological Functioning

The *wear-and-tear perspective* of caregiving suggests that the more care a person provides, the more distressed he/she should be. Based on this approach, people who participate in the patterns of elder care that are associated with the most amount of care given may have the highest rates of membership in deleterious patterns of psychological functioning. As the *adaptation hypothesis* suggests, however, it is possible that membership in any caregiving pattern will not be associated with higher or lower probabilities of membership in any given pattern of psychological functioning, relative to the non-caregiving pattern. Put differently, it is possible that the probability of membership in any pattern of psychological functioning will be the same across all patterns of caregiving (including non-caregivers), as well as for men and women separately.

Insights from the *life course perspective* and *role theory* suggest that when a person acquires a new social role, he/she internalizes the expectations that are associated with the social position for that point in history. Thus, based on this approach, women who are caregivers may not have more deleterious consequences associated with their psychological functioning than women who are not caregivers because being a woman is associated with the expectations for those who provides care. In contrast, male caregivers may have more deleterious consequences (relative to male non-caregivers) for their levels of psychological functioning, as they do not fit in the societal expectations of those who will provide care. Alternatively, the *stress process model* suggests that women in particular have few resources (as a result of their low status position as a function of their historical and geographic place) to help them cope with the

stressors that come from providing care. Based on this perspective, it is possible that women in any pattern of caregiving will have a higher likelihood of being in a detrimental pattern of psychological functioning than women who never participate in filial caregiving over time.

Based on insights from extensions of role theory, the stress process model, and the life course perspective, I have presented competing hypotheses regarding the effect of patterns of elder care on patterns of psychological functioning. I now turn to considering a different way of examining the effect of filial caregiving on psychological functioning of caregivers over time. Rather than considering differences in psychological functioning between patterns of elder care, this approach will allow me to identify changes in psychological functioning that occur as a result of taking on a caregiving role.

Transitions to Elder Care and Caregiver Psychological Functioning

Another unique way of understanding the relationship between elder caregiving and caregiver psychological functioning is to examine how transitions into elder care affect caregiver psychological functioning over time, especially as the transition to care differs based on the perceived responsibility of the caregiver (i.e., main or shared) and the residential status of the care recipient (i.e., lives with caregiver or lives elsewhere). The group-based trajectory approach described above will be used to identify patterns of elder caregiving (i.e., some people never participate, some people start off providing small amounts of care and this increases over time, while others begin providing large amounts of care and this stays consistent over time). This approach will allow for comparisons of psychological functioning *between* members of particular patterns. Another way of examining the relationship between caregiving and psychological functioning is to consider what happens when people make life transitions from not being a caregiver to being a caregiver. This approach would help examine how transitioning

to different types of filial care affects psychological functioning *within* an individual's own life course.

Recent research highlights the importance of transitioning into a caregiving role on several relevant caregiver outcomes. For example, Seltzer and Li (2000) find detrimental consequences for transitioning into elder care, examining spousal care in particular. They find that when women transition to becoming a caregiver for their husbands, their perceptions of marital satisfaction and family quality worsen, and they decrease their participation in leisure activities. This is supportive of the wear-and-tear perspective of caregiving. It also supports suggestions from the stress process model---if participation in leisure activities and perceptions of family quality decline, it is likely that systems of social support that could alleviate the burden of caregiving are ineffective.

Similarly, Marks, Lambert and Choi (2002) find that the transition to caregiving for primary kin (in this case, either a child, spouse, or biological parent) is linked to an increase in depressive symptoms. Choi and Marks (2006) find that this relationship is moderated by marital quality. Specifically, people who transition into caregiving roles for a biological parent or spouse experience a decrease in happiness and an increase in depressive symptomology over time when they report higher levels of marital disagreement. Marks et al. (2008) identify other moderators that impact the relationship between transitioning to care and caregiver physical and mental health outcomes. They find that contextual factors such as gender, marital status, and socioeconomic status pattern the health risks of transitioning to caregiving. Specifically, they find that transitioning into filial care when a person is employed is associated with more depressive symptoms and less psychological wellness for women compared to men. Additionally, transitioning into filial care while unmarried is associated with an increase in

depressive symptoms for men relative to women. This partially supports insights from the stress process model---that a marital partner serves as a resource to buffer depressive symptoms that arise from caregiving. Finally, women with low incomes who transition into filial care have greater declines in physical health than women with high incomes, yet the low-income women report fewer depressive symptoms over time relative to the high-income women. The relationship between transitioning to care and caregiver psychological functioning is not always detrimental. Women who transition to providing care for a nonresidential biological parent report an increased sense of purpose in life over time (Marks, Lambert and Choi 2002).

Thus, extant research shows that transitioning into elder care affects caregivers' psychological functioning, but to date, no study has examined filial caregiving along two dimensions: the perceived responsibility of the caregiver (i.e., main vs. shared) and the residential status of the care recipient (i.e., lives with caregiver vs. lives elsewhere). Therefore, in this section of the dissertation, I employ a life course perspective on roles and stress to answer the following question:

> Research Question 2: How do transitions into various types of filial caregiving affect a caregiver's psychological functioning over time?

Based on the adaptation hypothesis, it is possible that transitioning into filial caregiving will not affect levels of psychological functioning. In essence, this is a null hypothesis. This perspective suggests that people are able to adapt to the stressors of acquiring a new role. Alternatively, based on the wear-and-tear hypothesis, it may be the case that transitioning into any form of filial caregiving is associated with increased levels of psychological distress and decreased levels of psychological well-being over time for caregivers. The scarcity approach suggests a similar prediction---adding a new role is stressful for people. This stress may be seen in two ways: psychological distress and psychological well-being. Ross and Mirowsky (2006) suggest that

psychological functioning is a continuum (i.e., if a person experiences high levels of distress, they are also experiencing a lack of well-being). Therefore, insights gleaned from Ross and Mirowsky's (2006) formulation of psychological functioning as a continuum, the wear-and-tear hypothesis of caregiving, and the scarcity approach suggest:

> Hypothesis 1: People who transition into any form of filial caregiving will have *increased* levels of psychological distress over time.
>
> Hypothesis 2: People who transition into any form of filial caregiving will have *decreased* levels of psychological well-being over time.

While Ross and Mirowsky's (2006) approach suggests that psychological distress and well-being are the opposite ends of a spectrum, the multidimensional approach to psychological functioning suggests that people can experience negative and positive affective states simultaneously. The role accumulation and role expansion hypotheses suggest caregivers may experience negative and positive outcomes for their newly acquired roles. Combining these approaches suggests that while people who transition into filial caregiving may have increased levels of psychological distress over time (consistent with Hypothesis 1), it is also possible that they have increased levels of psychological well-being, as much research has documented the positive outcomes of caregiving (e.g., Kramer 1997). Therefore, based on the multidimensional approach to measuring psychological functioning and the role accumulation and expansion hypotheses, I present the following hypothesis:

> Hypothesis 3: People who transition into any form of filial caregiving will have *increased* levels of psychological well-being over time.

While these hypotheses (1-3) consider the main effect of transitioning into a filial caregiving role on caregivers' psychological functioning, they do not recognize the various ways a person can transition into caregiving, nor do they recognize how these transitions may be influenced by the gender of the caregiver. I am able to examine the effect of transitioning into

one of four different caregiving roles: being a main caregiver to a parent in one's residence, sharing care for a caregiver in one's residence, being a main caregiver to a parent who does not live in one's residence, and sharing care for a parent who does not live in one's residence on changes in caregivers' psychological functioning. In the following section, I present hypotheses that suggest the importance of transitioning into different forms of filial care.

Co-Residential Main Filial Caregiving

Main caregivers, particularly those who co-reside with an aging parent, may have poor outcomes in terms of psychological distress and well-being as they are likely to experience the most "wear" in terms of caregiving. Moreover, main filial caregivers who provide care in their residence may not have people with whom to divide caregiving tasks, which suggests that they do not have a strong network of social support in place to buffer the harmful effect of caregiving on psychological functioning. These suggestions are consistent with Brody's (1989) finding that women taking care of their mothers in their own homes experienced the worst mental and emotional effects of care relative to women who cared for their mothers outside of their home. Based on insights from the stress process model, main filial caregivers may show declines in terms of psychological distress and well-being over, as they do not have a system of social support in place to help manage caregiving tasks. Therefore, combining insights from the stress process model and the wear-and-tear hypothesis of caregiving, the following hypotheses are derived:

> H4: People who transition into being a main caregiver of a parent who lives in their residence will have *increased* levels of psychological distress over time.
>
> H5: People who transition into being a main caregiver of a parent who lives in their residence will have *decreased* levels of psychological well-being over time.

Yet, as the multidimensional approach to psychological functioning suggests, people may simultaneously experience increased levels of distress and also increased levels of well-being. This opposes the idea of psychological functioning as a continuum, which suggests that the experience of psychological well-being, for instance, indicates the lack of psychological distress. The multidimensional approach is complemented by Thoits's (2011, 2012) suggestion regarding the importance of "mattering." Thoits defines mattering as people's belief that they are important to others and that others depend on them for fulfillment of certain needs. Main caregivers who provide care in their residence are likely the people who matter most to care recipients in terms of the fulfillment of daily needs. Therefore, it is possible that people who transition into being main caregivers for parents in their residence to have increased levels of psychological distress as they experience the most "wear" in terms of providing care (consistent with Hypothesis 4). In contrast to Hypothesis 5 however, it is also possible that people who transition to being main caregivers for a parent in their residence may have *increased* levels of psychological well-being over time, as they feel a greater sense of purpose in their lives and people have the ability to experience positive and negative affective states simultaneously. Thus, the following hypothesis is derived from insights rooted in the multidimensional perspective of psychological functioning and Thoits's hypotheses about mattering:

> H6: People who transition into being a main caregiver of a parent who lives in their residence will show *increased* levels of psychological well-being over time.

Co-Residential Shared Filial Care

Becoming a caregiver who shares care for a parent (particularly a parent who resides with the caregiver), may be harmful to a caregiver's psychological functioning for a variety of reasons. First, sharing care may be stressful due to the fact that arranging multiple people's schedules and negotiating divisions of work may be complicated. Second, having to share care

of an aging parent in the caregiver's residence may indicate that the care recipient has major health issues that the respondent cannot attend to alone. The worsening health of the care recipient may be the cause of the caregiver's decline in psychological functioning. Third, sharing care of a parent may be an indicator that a caregiver may be juggling multiple roles (i.e., worker, mother/father, etc.) and does not have the time to devote to being a main caregiver. Thus, role conflict (Goode 1960) may be the reason behind increased distress levels of caregivers who share care for parents (particularly if they are in a co-residential caring situation). Indeed, Mentzakis, McNamee and Ryan (2009) find that co-residential elder care conflicts with time-demanding activities such as childcare and employment. This suggestion is consistent with findings from Martire, Stephens and Townsend (2000) and Stephens et al. (2001) who show that women who balanced multiple roles were likely to report more conflict than women with fewer roles and this led to a reduction in psychological well-being. Therefore, based on these three mechanisms and the scarcity hypothesis, I present the following two hypotheses:

> H7: People who transition into sharing care of a parent who lives in their residence will show *increased* levels of psychological distress over time.
>
> H8: People who transition into sharing care of a parent who lives in their residence will show *decreased* levels of psychological well-being over time.

Sharing residential care, however, may provide psychological benefits for the caregiver (e.g., Kinney and Stephens 1989, Kinney et al. 1995) This finding suggests that psychological functioning may be multidimensional, as it has been shown that caregivers can experience psychological rewards in addition to the distress that comes from providing care. Therefore, it is conceivable that people who transition into sharing care of a parent in their residence may experience increased levels of both psychological distress (as stated in Hypothesis 7) and also

psychological well-being. This hypothesis regarding improved well-being is formally stated below:

> H9: People who transition into sharing care of a parent who lives in their residence will show *increased* levels of psychological well-being over time.

Non-Residential Main Filial Caregiving

While some research suggests that co-residing with a care recipient can be stressful for caregivers as it restricts their activities (Deimling et al. 1989), it has also been shown that people who transition into a non-residential filial caregiving situation have increased levels of depression over time (Marks, Lambert and Choi 2002). These increased depression levels for non-residential caregivers are likely due to a perceived lack of control among these caregivers. As distance may separate adult children from their elderly parents who need care, these caregivers may not be able to make sure that elders are living well (i.e., visiting doctors, taking medication, etc.). Care recipients in these situations may also be unwilling to relinquish control, thereby causing disputes with their adult child caregivers. Additionally, people who transition into non-residential caregiving arrangements may report increased stress levels as this could be their first step into caregiving, and they see a long trajectory of care in their future. Therefore, caregivers who transition into non-residential filial caregiving arrangements (especially those who report that they are the main caregiver, as these caregivers may not be able to split care with other people) may experience a decline in their levels of psychological functioning over time. This suggestion is formally hypothesized below:

> Hypothesis 10: People who transition into being the main caregiver of a parent who does not live with them will show *increased* levels of psychological distress over time.

> Hypothesis 11: People who transition into being the main caregiver of a parent who does not live with them will show *decreased* levels of psychological well-being over time.

A competing hypothesis is that people who transition into a main filial caregiving role outside their residence may experience increased levels of well-being over time. Indeed, studies have shown that caregivers experience positive outcomes such as an increased sense of purpose in life and better self-esteem relative to non-caregivers (Kinney and Stephens 1989, Kinney et al. 1995). These findings support insights from the role expansion and accumulation hypotheses---namely that there are psychological benefits to acquiring a new role. Additionally, the idea that elder care has beneficial consequences for the caregiver is congruent with the notion that psychological functioning can be multidimensional (i.e., that a person can experience distress and well-being at the same time). Based on this notion as well as insights from the role expansion and role accumulation hypotheses, it is possible that transitioning to non-residential filial care can have deleterious (consistent with Hypothesis 10) and also beneficial consequences on the long-term psychological functioning of caregivers. Therefore, I present a competing hypothesis with Hypothesis 11:

> Hypothesis 12: People who transition into being the main caregiver of a parent who does not live with them will show *increased* levels of psychological well-being over time.

Alternatively, another non-residential filial caregiving role that has been under-studied and under-theorized involves sharing care of an aging parent (as opposed to being the main caregiver of a parent who does not reside with the caregiver). Indeed, for many caregivers this is often the first step of caregiving (i.e., bringing over a meal for parents, helping with yard work, etc.). Transitioning to sharing filial care outside of one's residence may be particularly detrimental to the psychological functioning of caregivers as it involves several stressful aspects. First, this newly acquired role could be stressful, as caregivers may see it as the beginning of a long trajectory of care wherein their parent could have worsening physical health and less personal autonomy than before they did before the caregiver acquired the role. Second, sharing

care (residentially or non-residentially) can be stressful as it involves negotiating divisions of care for parents between multiple people, the necessity of which may be a function of the worsening physical health of the care recipient and/or the caregiver's lack of time to devote to the newly acquired role due to conflict with other roles. Sharing care of a parent who lives away from the caregiver may be particularly stressful as it involves these dimensions *and* the lack of control that is associated with not being in close physical proximity to the care recipient. Therefore, transitioning to sharing care of an aging parent who lives away from the caregiver may have harmful consequences on a caregiver's levels of psychological distress and well-being over time. This suggestion is formally stated in the hypotheses below:

> Hypothesis 13: People who transition into sharing care for a parent who does not live with them will show *increased* levels of psychological distress over time.
>
> Hypothesis 14: People who transition into sharing care for a parent who does not live with them will show *decreased* levels of psychological well-being over time.

Conversely, based on the role accumulation and role expansion hypotheses as well as the notion that psychological functioning is multidimensional, it is also possible that there are benefits for caregivers who transition into a role in which they share care for an aging parent who does not live with them. Adding this role to their lives may result in a greater sense of purpose or a perception that they are fulfilling filial obligations. As a result, I suggest that though caregivers who transition into sharing care of a parent who does not live with them may have detrimental consequences in terms of their distress levels (consistent with Hypothesis 13), they may also have beneficial consequences in terms of their psychological well-being, which is counter to the suggestion presented in Hypothesis 14. The idea that transitioning to sharing care of a parent outside of one's residence may have benefits to psychological well-being is formally stated in the following hypothesis:

Hypothesis 15: People who transition into sharing care for a parent who does not live with them will show *increased* levels of psychological well-being over time.

Gender of Caregivers and Transitions to Elder Care

There are a host of factors that may influence the relationship between transitioning to care and a caregiver's psychological functioning over time. In this section, I propose the importance of one factor: the gender of the caregiver. Much research shows that female caregivers have more harmful psychological consequences for providing care than do male caregivers (Pearlin et al. 1990). Insights from the stress process model suggest that female caregivers may have fewer resources (i.e., income) than do male caregivers, thereby limiting female caregivers' ability to cope with the stress of caregiving. Similarly, from a life course perspective, women's lower status position (as a reflection of their historical moment) influences their lived experiences. Therefore, as women have fewer resources than do men (Pearlin et al. 1990), transitioning into filial care may have more harmful effects on women's levels of psychological functioning over time than men's levels. This prediction is formally presented below:

Hypothesis 16: Deleterious consequences associated with transitioning to filial caregiving will be greater for women than they will be for men.

It is also possible, however, that men who transition into filial care have more deleterious outcomes in terms of their psychological functioning than do women. From a life course perspective, the hegemonic masculine role is not associated with enacting caregiving roles (Connell 2005). Furthermore, men are often not socialized to provide care. Therefore, countering these societal norms about who is expected to provide care and entering into a caregiving role without the knowledge of how to successfully perform it may result in worse outcomes for men's psychological functioning over time when they transition into filial care than it will for women. Based on these ideas, the following hypothesis is suggested:

Hypothesis 17: Deleterious consequences associated with transitioning to filial caregiving will be greater for men than they will be for women.

Conclusion

The purpose of this chapter was to provide a theoretical framework for this dissertation and present research questions and hypotheses. I summarize these research questions and hypotheses in Tables 1 and 2. This portion of the dissertation uses insights from life course theory, role theory (and its extensions: the role conflict hypothesis or scarcity approach, the role accumulation hypothesis, and the role expansion hypothesis), the stress process model, the wear-and-tear hypothesis, and the adaptation hypothesis. The overall purpose was to suggest two different ways of thinking about the impact of participating in elder care on caregivers' psychological functioning over time (patterns and transitions), recognizing different conceptualizations of psychological functioning (i.e., as a continuum or as multidimensional). In the following chapter, I discuss how I will measure and model these two ways of viewing elder care through two unique methodological approaches: the group-based trajectory approach and fixed effects regression modeling. I will also explain the data and variables that will be used to answer the research questions presented in this chapter.

Table 1: Summary of Questions and Expectations for Research Question 1

Overarching Research Question 1: How are patterns of elder caregiving related to patterns of psychological functioning?	
Sub-questions: **Research Question 1a:** How are patterns of elder caregiving related to patterns of psychological functioning differently for female caregivers compared to female non-caregivers? **Research Question 1b:** How are patterns of elder caregiving related to patterns of psychological functioning differently for male caregivers compared to male non-caregivers?	
Expectations	
Adaptation Hypothesis	No differences between caregiving and non-caregiving patterns on likelihood of membership in patterns of psychological functioning
Wear-and-Tear Hypothesis	The pattern associated with the most amount of elder care over time will be associated with detrimental patterns of psychological functioning
Stress Process Model	Women involved in any pattern of elder caregiving will have a higher likelihood of membership in detrimental patterns of psychological functioning relative to women who are not elder caregivers.
Life Course Perspective	Men involved in any pattern of caregiving will have a higher likelihood of membership in detrimental patterns of psychological functioning relative to men who are not elder caregivers.

Table 2: Summary of Hypotheses for Research Question 2

Research Question 2: How do transitions into various types of filial caregiving affect a caregiver's psychological functioning over time?			
Transition Type	**Increased Psychological Distress**	**Decreased Psychological Well-Being**	**Increased Psychological Well-Being**
Any transition into filial care	Hypothesis 1	Hypothesis 2	Hypothesis 3
Main Filial Caregiver in Residence	Hypothesis 4	Hypothesis 5	Hypothesis 6
Shares Filial Care in Residence	Hypothesis 7	Hypothesis 8	Hypothesis 9
Main Filial Caregiver not in Residence	Hypothesis 10	Hypothesis 11	Hypothesis 12
Shares Filial Care not in Residence	Hypothesis 13	Hypothesis 14	Hypothesis 15
Gender and the Relationship between Transitions and Psychological Functioning			
Female Caregivers (relative to male caregivers)	Hypothesis 16	Hypothesis 16	---
Male Caregivers (relative to female caregivers)	Hypothesis 17	Hypothesis 17	---

CHAPTER 4

METHODS

The purpose of this chapter is to provide an overview of the data, methods, and measures that I will use to answer the research questions posed in this dissertation. I will describe the dataset I will use, its major strengths, and its characteristics. Then, I will provide an overview of the group-based trajectory approach, which I will use to answer the first research question. I will describe the indicators that will be used to measure psychological functioning and time spent in elder care for this question. Next, I will turn to describing the logic of fixed effects regression and the measures that will be used to answer the second research question. I end by discussing the utility of both approaches and how through using these approaches, I will be able to examine the longitudinal effect of elder care on caregivers' functioning in complementary ways.

Data

Data relevant to the first research questions will come from Waves 2-10 of the Household, Income and Labor Dynamics in Australia (HILDA) Survey, while the second research question will utilize data from Waves 5-10 of this survey. HILDA is a household-based panel study that began in 2001. HILDA collects information about economic and subjective well-being, labor market position, and family dynamics. Interviews are performed annually with adult members of households, and these panel members are tracked over time. In the Wave 2 panel, there were 7,245 responding households and 13,041 individuals surveyed. In the Wave 5 panel, there were 7,125 households and 12,759 persons interviewed. The Wave 10 panel consisted of 7,317 households and 13,526 persons interviewed (9,002 of those were re-interviewed from Wave 1). Between Waves 2 and 3, the attrition rate was slightly more than six

percent. Between Waves 5 and 6, the attrition rate was less than six percent. Similarly, between Waves 9 and 10, the attrition rate was less than 5 percent. HILDA provides weights to help researchers account for attrition bias (Melbourne Institute 2011). The response rate in the first wave of HILDA was 66 percent. Subsequent response rates (calculated as the percentage of previous wave respondents who returned to the study in the next wave) in each wave is over 85 percent. At designated points in time, HILDA "tops-up" the number of respondents to deal with attrition. Response rates of new participants in each wave (excluding Wave 1) is over 70 percent.

HILDA is an appropriate dataset to use for this dissertation, as the longitudinal nature of the data allows me to track patterns of caregiving and transitions into caregiving and the corresponding changes in levels of psychological distress and well-being of caregivers. Because HILDA is an Australian dataset, it would be logical to consider whether processes related to elder caregiving may be different between the U.S. and Australia. Though the Australian health care system is different from that of the U.S., the trends with regard to elder caregiving are largely similar. For a review, please see Chapter 2. Ultimately, the use of a longitudinal Australian dataset will allow me to go beyond the previously discussed findings reported in the U.S. that tend to rely on cross-sectional data. To do this, I will rely upon two modeling strategies: group-based trajectory modeling and fixed effects regression models. I turn now to describing each method, set of measures, and plan of analysis for both results chapters.

Group-Based Trajectory Modeling

Many studies linking elder care to caregivers' psychological functioning rely upon standard ordinary least squares regression models. These models are limited in the study of elder caregiving in that they cannot take into account individual variability in trajectories of

caregiving. These models tend to assume that the experience in caregiving is relatively homogenous. While the use of an "average" caregiving situation is useful for considering what is happening for "typical" caregivers, this approach ignores the fact that there are many potential patterns of elder care. Many people spend no time in elder care, others decrease their time over time, some begin by providing small amounts that increase over time, and others begin their time in care by providing large amounts of care that remain stable over time. Similarly, psychological well-being and psychological distress also have the potential to change over the life course. Thus, it is possible that each of these patterns of elder care may be differentially related to patterns of psychological distress and psychological well-being. To understand how different patterns of caregiving may differentially affect caregivers' patterns of psychological well-being and psychological distress, I turn to the use of group-based trajectory modeling.

Group-based trajectory modeling (GBTM) (Nagin 2009) is a statistical method that is designed to examine processes that change over time. This method has most often been used in the field of criminology wherein scholars have used it to examine criminal offending (Piquero, Farrington and Blumstein 2003), antisocial behavior (Monahan et al. 2009), and delinquency (van der Geest, Blokland and Bijleveld 2009) over time. Outside of criminology, the method has been used to identify different patterns of marital quality (Anderson, Van Ryzin and Doherty 2010), depressed mood from adolescence to early adulthood (Costello et al. 2008), and body mass trajectories through adulthood (Østbye, Malhotra and Landerman 2011). The method is unique in that it allows for the statistical identification of subgroups in a sample (i.e., people who have similar trajectories of a given process).

The aim of group-based trajectory models is to identify clusters of individuals with similar trajectories. Yet, the model's estimated parameters are not a result of a cluster analysis.

Instead, group-based trajectory modeling relies upon maximum likelihood estimation, as the groups (or clusters) are unobserved. The specific form of this likelihood function depends upon the distribution of the data being analyzed (i.e., count, continuous, or dichotomous), but all follow the principles of the underlying likelihood function presented below in Equation 1. Regardless of the distribution of the data, the goal of GBTM is to estimate a set of parameters, Ω, that maximize the probability of a longitudinal sequence of measurements for an individual over a certain amount of time periods. GBTM assumes that individual differences in trajectories can be summarized by a finite set of different polynomial functions of time. Each set corresponds to a trajectory group *j*. The aim of GBTM is to estimate the proportion of the population in each group *j*. It does this through the following likelihood function (Equation 1), which requires the summation of the *J* conditional likelihood functions to estimate the unconditional probability of the data.

Equation 1: Maximum Likelihood Function for Group-Based Trajectory Model

$$P(Y\mathrm{i}) = \sum_{j}^{J} \pi\mathrm{j}\ \mathrm{P}^{\mathrm{j}}(Y_{\mathrm{i}})$$

Wherein:

-$Y_{\mathrm{i}} = (y_{i1}, y_{i2}, y_{i3,\ldots}, y_{iT})$ denotes a longitudinal sequence of measurements of individual *i* over *T* periods.

-P(Y_{i}) denotes the probability of Y_{i}.

-$\mathrm{P}^{\mathrm{j}}(Y_{\mathrm{i}})$=the probability of Y_{i} given membership in group *j*

-π_{j} = the probability of a randomly chosen population member belonging to group *j*

This equation equals the sum across the *J* groups of the probability of Y_{i} given *i*'s membership in group *j* weighted by the probability of membership in group *j* (Nagin 2005).

Group-based trajectory modeling documents trajectories (or patterns) of only one process that evolves over time. It can then model either predictors of membership in various trajectories or the outcomes of membership in the identified trajectories. For example, several scholars have used the GBTM approach to document trajectories of delinquent/criminal behavior. Some scholars use the GBTM approach to see what factors make a person more likely to participate in a given trajectory of delinquency (Evans, Simons and Simons 2014). They found that there are 4 trajectories of delinquency---negligible delinquents, early starter/declining, late starter, and early starter/chronic offenders---and experiencing racial discrimination in early childhood increased the likelihood of being in a trajectory group that is defined by early offending. Other scholars use the GBTM approach to document the effect of membership in an identified trajectory group. For example, Van De Rakt, Nieuwbeerta and De Graaf (2008) identified four trajectories of criminal behavior for fathers: sporadic offenders, low-rate desisters, medium-rate desisters, and high rate persisters. They find that being in the high-rate persister trajectory group significantly increased the number of delinquent acts committed by their children, relative to children of men in the sporadic offending group. I will use GBTM to document patterns of elder care and patterns of psychological functioning. In the following section, I explain the measures that will be used to do so.

Measures for Group Identification

Groups (or patterns) can be identified by examining simply one variable that is measured over time. I will be identifying patterns (also called subgroups or trajectories) for the following three phenomena: psychological distress, psychological well-being, and time spent in elder care. Below, I describe how each of these variables is measured.

Psychological Functioning

To document patterns of psychological functioning, I rely upon the conceptualization that psychological functioning can be multi-dimensional. That is, I will consider both the "positive aspects" (i.e., happiness) and "negative aspects" (i.e., depression, anxiety, etc.) separately. For the group-based trajectory models, I will document the interrelationships between (1) patterns of elder care and patterns of psychological distress and (2) patterns of elder care and psychological well-being. To measure these two dimensions of psychological functioning (psychological distress and psychological well-being), I rely upon questions generated from the Short-Form General Health Survey (SF-36) of HILDA. The SF-36 is a multipurpose health survey that has been shown to have high validity and reliability over time. Some argue that it is the most widely used health measure in clinical studies in the world (see Räsänen et al. 2006 for a review). In this portion of the survey, respondents answer 36 questions about their mental and physical health. For this analysis, I consider the 5 questions that pertain to respondent's mental health. These mental health measures have been widely used to understand a host of social psychological connections including the relationship between mental health and labor market position (Frijters, Johnston and Shields 2010), the feeling of safety and mental health (Green, Gilbertson and Grimsley 2002), and the impact of the physical environment on mental health (Guite, Clark and Ackrill 2006).

To measure *psychological functioning* I will rely upon the indicators of the mental health subscale of the SF-36. This scale consists of five items that measure distress and well-being at each wave. Respondents were given the stem: "These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the

past 4 weeks have you (1) been a happy person; (2) been a nervous person; (3) felt so down in the dumps nothing could cheer you up; (4) felt calm and peaceful; and (5) felt down." Response options for each of these were: (1) all of the time; (2) most of the time; (3) a good bit of the time; (4) some of the time; (5) a little of the time; and (6) none of the time. To measure *psychological distress*, I create a scale of items 2, 3, and 5. To measure *psychological well-being*, I create a scale of items 1 and 4. I reverse code each of these items so that higher values indicate higher levels of distress and higher levels of well-being in each scale.

Patterns of Elder Care

In order to determine patterns of elder care, I will rely on self-reports of time spent caring for aging individuals in Waves 2-10 of HILDA. Respondents were asked at each wave to report how many hours and minutes in a typical week that they spend "caring for a disabled spouse or disabled adult relative, or caring for elderly parents or parents-in-law." Past research shows a positive association between time spent in elder care and caregiver depression (Zhan 2006). Therefore, *time spent in elder care* will be measured continuously at each wave. Respondents can report any amount of time between 0-168 hours. This measure is part of a series of time-use questions, wherein respondents indicate how much time they spend doing several activities (i.e., household labor, childcare) in a typical week. Respondents are reminded that there are 168 hours in the week, and as such, they are encouraged to make sure that the sum of their responses on these time-use questions does not exceed 168. I take the natural logarithm of this value to reduce the skewness of the variable.

Multinomial Logistic Regression

Once I establish patterns of elder care and patterns of psychological functioning, I will use multinomial logistic regression to predict the odds of membership in a pattern of

psychological functioning for members of each elder caregiving pattern, controlling for a host of relevant control variables. In the following section, I describe the control variables that will be used in the multinomial logistic regression models, all of which are measured at Wave 2 of HILDA[3].

In the multinomial logistic regression models, I control for perceptions of *social support*, as caregivers who report higher levels of social support tend to have better psychological outcomes than caregivers who do not perceive they have a strong social support network (e.g., Crespo, López and Zarit 2005). These findings are consistent with hypotheses derived from the stress process model (Pearlin et al. 1990). To measure social support, I create a scale at each wave that consists of the following ten items: (1) People don't come to visit me as often as I would like; (2) I often need help from other people but can't get it; (3) I seem to have a lot of friends; (4) I don't have anyone that I can confide in; (5) I have no one to lean on in times of trouble; (6) There is someone who can always cheer me up with I'm down; (7) I often feel very lonely; (8) I enjoy the time I spent with the people who are important to me; (9) When something's on my mind, just talking with the people I know can make me feel better; and (10) When I need someone to help me out, I can usually find someone. Response options for each question range from 1 ("strongly disagree") to 7 ("strongly agree"). I reverse-coded items 1, 2, 4, 5, and 7 such that higher values on the scale indicate more perceived social support.

Respondents' *income* is also a covariate in the multinomial logistic regression models. Income has been shown to be related to caregivers' psychological functioning, though results are

[3] I follow Li and Hser (2011) by including covariates in a longitudinal analysis that are measured at the beginning of the study period to inform these models. Other scholars (e.g., Hynes and Clarkberg 2005) measure covariates used to predict the odds of group membership during the middle of their survey period. I ran separate models (not presented) that include covariates measured at Wave 6 and then at Wave 10. Results were substantively similar to models that included covariates measured at Wave 2.

inconsistent. Some studies show that low-income caregivers have higher levels of distress than caregivers with higher incomes (Choi et al. 2012). In contrast, other studies have shown that low-income caregivers have better psychological outcomes than caregivers with higher income (Marks et al. 2008). I will measure the total amount of income respondents report in each wave. Multinomial logistic regression models will also include covariates for whether or not the respondent is *employed* at Wave 2. Respondents will be coded as "1" if they are employed and "0" if they are not employed. Models control for employment status, as being employed while caregiving has been shown to minimize the deleterious impact of caregiving on caregiver's psychological functioning (Brody et al. 1987, Miller 1989, Skaff and Pearlin 1992, Stoller and Pugliesi 1989).

I will also consider respondent's *education* as a control variable. Caregivers with less than a high school education report higher levels of emotional distress than caregivers with a high school degree or beyond (Cameron et al. 2002). I will measure education dichotomously (1=has a high school degree or beyond, 0=does not have a high school degree) at Wave 2. Additionally, I will include respondent's marital status as a covariate. In addition to the general benefits of marital status on psychological functioning (Waite and Gallagher 2002), research finds that married individuals who provide elder care have lower levels of psychological distress than single individuals (Brody et al. 1992). I will measure marital status dichotomously, wherein respondents who are coded as "1" report that they are married or partnered. Respondents will be coded as "0" if they are single, divorced/separated, or widowed.

Respondent's *number of siblings* will be included as a covariate when I document the odds of membership in a pattern of psychological functioning based on membership in a pattern of elder care. Having more siblings may ease the burden of elder care as there are more people

with whom to share the care of an aging relative, particularly a parent (see Li, Seltzer and Greenberg 1997). Additionally, analyses will include *number of children* as another covariate. Some research shows that elder caregivers who are also parents have more deleterious outcomes in terms of their psychological functioning than elder caregivers who are not parents (Brody 1985), while other studies do not show deleterious consequences for caregivers who are also parents (Dautzenberg et al. 1999). Due to this inconsistency, the number of children a respondent has needs to be included as a covariate when considering psychological functioning. Both of these variables will be measured continuously.

Experiencing any one of a host of *negative life events* will be included as a covariate in the multinomial logistic regression models. I use these as a covariate because negative life events are labeled as stressors in the stress model approach and are likely to result in high levels of distress unless the person who experiences them has many resources and successful coping strategies (Pearlin et al. 1990). Respondents are asked if they experienced any of the following events in the past year: an injury, the death of a loved one, physical violence, property crime victimization, jail-time, or the loss of one's job. I create a variable that indicates whether the respondent experienced any of these events (1=experienced at least one negative life event, 0=did not experience any negative life event).

The documentation of each pattern will also be informed by gender and Aboriginal status. As women spend more time in elder care than do men (Pinquart and Sorensen 2006) and also report higher levels of psychological distress than do men (American Psychological Association 2010, Zimet et al. 1988), gender is an important covariate to consider. Gender will be coded such that 1=female and 0=male. In addition to gender, Aboriginal status will also be used as a covariate in the identification of patterns of elder care and psychological distress. In Australia,

people of Aboriginal status who provide elder care often experience high levels of stress as a result of a lack of community support surrounding their participation in care (Bell, Lindeman and Reid 2015). Therefore, it is necessary to include Aboriginal status as a relevant covariate. Aboriginal status will be coded such that 1=of Aboriginal Status and 0=not of Aboriginal status.

Plan of Analysis Linking Patterns of Elder Care and Patterns of Psychological Functioning

This analysis will proceed in three main steps. First, I will describe and display the dominant patterns of elder care and patterns of psychological distress and well-being for the entire sample using group-based trajectory modeling. I will rely upon the use of the Bayesian Information Criterion to inform the number and shape of these patterns. Second, I will examine the bivariate relationship between patterns of elder care and patterns of psychological distress/well-being. Third, I will use multinomial logistic regression to predict the odds of membership in a pattern of psychological functioning based on membership in a pattern of elder care. This approach will expound upon the second step described above, as it will allow for the inclusion of relevant covariates in the model. In each of these steps, I will consider the importance of gender by conducting several sets of analyses with subsets of the data (i.e., men only and women only). By documenting the interrelationships between patterns of elder care and psychological functioning, the group-based trajectory approach and multinomial logistic regression allow for understanding the multidimensional and dynamic associations between the two outcomes of psychological functioning across several social groups of caregivers. I turn now to considering another form of longitudinal data analysis that will allow me to examine the relationship between elder care and psychological functioning in a different way. In this section, I will show how transitions into a particular type of elder care (filial care) are related to within-person changes in psychological functioning over time rather than considering the differences in

psychological functioning between different patterns of participation in elder care, as the group-based approach does.

Fixed Effects Regression Models

Fixed effects regression models are used when researchers are interested in understanding the relationship between predictor and outcome variables that vary over time within a given entity (i.e., a country, company, or in this study, an individual). When using fixed effects regression, there is the assumption that time-varying characteristics of entities may impact the predictor and/or outcome variables and that these need to be controlled in the model. Fixed effects regression is unique, however, in that it removes the effect of time-invariant characteristics (i.e., race, gender) that may affect the predictor and/or outcome variables. As these models examine within-entity changes, if there is a variable that does not change within an entity, it is impossible for that variable to bring about a change within that entity over time. Another assumption of the fixed effects model is that time-invariant characteristics are unique to individuals and are not correlated with other individual characteristics. Each entity is unique, so an entity's error term and constant should not be correlated with other entities' error terms and constants. A Hausman test will be used to ensure fixed effects regression (as opposed to random effects models) is the appropriate modeling strategy. The formula for the fixed effects model is displayed in Equation 2 below (Allison 2009) :

Equation 2: Formula for Fixed Effects Regression Models

$$Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it}$$

Where

– α_i (i=1….n) is the unknown intercept for each entity (n entity-specific intercepts).

– Y_{it} is the dependent variable where i = entity and t = time.

– X_{it} represents an independent variable[4],

– β_1 is the coefficient for that independent variable,

– u_{it} is the error term

Before turning to describing the measures that will be used for the fixed effects models, I will explain how fixed effects models differ from the group-based trajectory analysis. Fixed effects models show how change in an independent variable is associated with a change in a dependent variable within an entity (i.e., person) over time. In this case, I will be examining how a change in caregiving status (i.e., transitioning from not being a caregiver to caring for an aging parent) is related to a change in a person's psychological functioning over time. The group-based trajectory approach, in turn, documents subgroups of a phenomenon of interest. I will document patterns of caregiving and patterns of psychological functioning. I will then see how membership in one of the patterns of caregiving is related to the probability of membership in a pattern of psychological functioning (i.e., examining whether people who are in an increasing pattern of caregiving have a greater probability of membership in a detrimental pattern of psychological functioning than people who are in a non-caregiving pattern). Therefore, the fixed effects approach will allow me to see *within-person* changes in psychological functioning over time, while the group-based trajectory approach (used in conjunction with multinomial logistic regression analyses) will allow me to see the differences in patterns of psychological functioning *between* different groups of caregivers. I turn now to considering the measures that the fixed effects models will use to test Hypotheses 1-19.

[4] Models can include multiple independent variables. For the sake of brevity, I only include one in the fixed effects regression formula.

Main Dependent Variable: Caregiver Psychological Functioning

Similar to the group-based trajectory models, I will rely upon a multidimensional conceptualization of psychological functioning (i.e., considering psychological distress and well-being separately) from the Short Form-36. To measure *psychological distress*, I create a scale of items of the following three items: "How much of the time during the past four weeks have you (1) been a nervous person; (2) felt so down in the dumps nothing could cheer you up; and (3) felt down." Response options for each of these measures in this scale are: (1) all of the time; (2) most of the time; (3) a good bit of the time; (4) some of the time; (5) a little of the time; and (6) none of the time. I will reverse-code the items in each scale such that higher values indicate higher levels of psychological distress. To measure *psychological well-being*, I create a scale of the following two items: "How much of the time during the past four weeks have you (1) been a happy person; and (2) felt calm and peaceful." Consistent with the psychological distress scale items, response options for each of these measures in the psychological well-being scale are: (1) all of the time; (2) most of the time; (3) a good bit of the time; (4) some of the time; (5) a little of the time; and (6) none of the time. I will reverse-code the items in this scale such that higher values on each indicate higher levels of psychological well-being.

Main Independent Variable: Caregiver Status

The main independent variable for the fixed effects regression models will be *transitions to filial care*. This will be measured as a five category dummy variable. Respondents are asked in Waves 5-10 if they provided care to their parents. If so, respondents are then asked whether the care recipient lives with them or lives elsewhere. Respondents are also asked whether they are the main caregiver in this caregiving relationship or if they share care with other people. Based on these questions, I create the following five category dummy variable that captures

changes in caregiving status: (1) does not participate in filial care[5]; (2) is a main caregiver for a parent who lives with the respondent; (3) shares caregiving responsibilities for a parent who lives with the respondent; (4) is a main caregiver for a parent who does not live with the respondent and; (5) shares caregiving responsibilities for a parent who does not live with the respondent. In each model, the reference category is comprised of respondents who do not provide care to a parent, parent-in-law, spouse, adult child, or any other aging relative at any wave (category 1 above).

To ensure that results capture the effect of filial care alone, respondents are excluded from analysis if they have other elder care responsibilities in addition to their participation in filial care (i.e., if they also provide care for a spouse/partner). This fixed effects regression model will examine the within-person changes in psychological functioning that people experience as a result of a change in caregiving status. As not transitioning into filial care is the reference category, models will measure the transition from not caregiving to caregiving in any of the four categories described above. If a transition type is significant, it will indicate that there is a change in psychological functioning for respondents who made that transition that is not due to chance.

Control Variables

As fixed effects regression models remove the effect of time-invariant characteristics, only relevant time-varying control variables need to be included in the models. I will control for changes over time in the following time-varying variables in the models: hours spent in elder

[5] I also excluded anyone who participated in any other form of care (i.e., spousal care, the care of an adult child, etc.) to ensure that the transition the fixed effects models will measure is the transition from *not* providing filial care (or any other form of care of an adult) to providing the caregiving type of interest. This excluded 3,755 person-waves from the analysis.

care, perceptions of social support, education level, whether a respondent moved, marital status, experiencing pregnancy or childbirth (or having a spouse/partner who did), total number of children, number of resident children under age four, number of resident children between ages five to fourteen, retirement, receiving a promotion, changing jobs, having one's finances worsen, and experiencing a negative life event. Below, I describe the measurement and coding of each of these variables.

The amount of time a person spends in elder care has been shown to be related to his/her levels of psychological functioning. Specifically, an increase in the number of hours a person participates in caring for aging relatives is positively associated with burden and depression and negatively associated with subjective well-being for the caregiver (Pinquart and Sorensen 2006). Including time spent in elder care as a control variable in these fixed effects models will allow me to see the effect of transitioning into filial care net of the effect of the hours a person spends in that role. It is possible that the role in and of itself is not stressful, but rather that spending many hours in filial care causes stress. Therefore, I measure *time spent in elder care* as the amount of time a person reports caring for a disabled spouse or disabled adult relative, or caring for elderly parents or parents-in-law. I take the natural logarithm of this variable in order to reduce skew and tuck in the tails of the distribution.

I also control for perceptions of *social support* in the fixed effects models, as people who perceive high levels of social support typically have lower levels of psychological distress than people who perceive low levels of social support (e.g., Ergh et al. 2002). As previously described, I create a scale of perceptions of social support with the following ten items: (1) People don't come to visit me as often as I would like; (2) I often need help from other people but can't get it; (3) I seem to have a lot of friends; (4) I don't have anyone that I can confide in;

(5) I have no one to lean on in times of trouble; (6) There is someone who can always cheer me up with I'm down; (7) I often feel very lonely; (8) I enjoy the time I spent with the people who are important to me; (9) When something's on my mind, just talking with the people I know can make me feel better; and (10) When I need someone to help me out, I can usually find someone. Response options for each question range from 1 ("strongly disagree") to 7 ("strongly agree"). I reverse-coded items 1, 2, 4, 5, and 7 such that higher values on the scale indicate more perceived social support.

I control for changes in *education level* because caregivers' highest level of education is associated with their psychological functioning (Cameron et al. 2002). I measure education level dichotomously. Respondents who are designated as a "1" have a college degree or more. Respondents coded as "0" have less than a college degree. The fixed effects models will examine how earning a college degree relates to changes in a person's levels of psychological functioning over time.

Models also include a control variable for whether or not the respondent *moved* since the previous wave of data collection (1=moved , 0=did not moved). Moving has been shown to be a significant life stressor. Furthermore, people may move in order to take care of their aging parent, and the move itself (not the care) could cause psychological distress. Therefore, it is possible that the relationship between transitioning to filial care and psychological functioning could be spurious and may be explained away once moving is taken into account. As such, I control for this variable in all models.

I control for changes to the respondent's *marital status* during the survey period for two reasons. First, marital status is related to psychological functioning, wherein people who are married report higher levels of happiness and lower levels of depression than their single,

widowed, and divorced/separated counterparts (Waite and Gallagher 2002). Second, marital quality has been shown to exacerbate the deleterious relationship between transitioning to care and caregiver depression (Choi and Marks 2006). In the case of caregiving, it is possible that having a spouse/partner eases the burden of care, as married people have a built-in support network to which they can turn. This may reduce levels of psychological distress for married individuals relative to people who are not married (see Brody et al. 1992). Respondents are coded as "1" if they are married and "0" if they are single, divorced, or widowed. The coefficient for this variable will indicate how becoming married is related to changes in a respondent's psychological functioning over time.

Models also include several control variables that concern children. Specifically, I create two dummy variables for whether the respondent (or respondent's partner) *became pregnant* (1=respondent or partner became pregnant, 0=respondent or partner did not become pregnant) or *gave birth* (1=respondent or partner gave birth, 0=respondent or partner did not give birth) since the previous wave of the survey. For example, a respondent will be coded as "0" on this variable if they did not give birth or did not have a partner who gave birth at Wave 5. If in between Wave 5 and Wave 6, they or their partner gave birth, they are coded as "1" for giving birth for Wave 6. Then they would be coded as "0" at Wave 7 if they did not give birth between Waves 6 and 7. Models also include control variables that measure how many *children* the respondent has. This will be measured continuously. I also include control variables for the count of resident children under the age of four, as well as the number of resident children between the ages of five and fourteen. These two variables will also be measured continuously.

I also control for a host of variables that surround a person's position in the labor market. Extant research has shown that changes in people's jobs and employment status are associated

with their psychological functioning (Warr 1987, Wilhelm et al. 2004). In the fixed effects models, I control for whether the respondent *retired* (1=retired, 0=did not retire), *received a promotion* (1=received a promotion, 0=did not receive a promotion), or *changed jobs* (1=changed jobs, 0=did not change jobs). For each of these variables, respondents are asked at each wave whether they experienced retirement, promotion, or a job change since the previous wave. The fixed effects approach will model how changes in these labor market variables are related to changes in the respondent's psychological functioning over time. Furthermore, as low income is a substantial predictor of anxiety, depression, and other components of psychological functioning, I also control for whether or not the respondent's *finances worsened* over time (1=finances worsened, 0=finances did not worsen).

Finally, I control for whether or not the respondent experienced at least one of several *negative life events*, as these events are related to psychological distress. These events include experiencing an injury, the death of a loved one, physical violence, property crime victimization, jail-time, or losing one's job. These questions are asked in each wave of HILDA. Respondents who are coded as "1" have experienced at least one of these negative life events in that particular wave. Respondents coded as "0" have not experienced any of these negative life events in a particular wave. For example, a person could experience the death of a loved one in Wave 5, so for that point, they would be coded as "1." In Wave 6, this person may not experience any negative life events, so he/she would be coded as "0." If he/she experienced property crime victimization in Wave 7, he/she would be coded as a "1." The fixed effects model will capture how moving from not experiencing a negative life event to experiencing a negative life event affects a person's psychological functioning over time.

To control for any temporal variation in the dependent variables, I will include a set of dummy variables that model the year of the survey. Waves 5-10 took place annually from 2006-2010. I create a six dummy variables for each year, wherein a value of "1" indicates that the observation occurred in that year, and a value of "0" indicates that it occurred in another year. The year 2006 will be the omitted reference category. This is standard in fixed effects models, as it will capture any effect of a change in the dependent variable that occurs due to time rather than the explanatory variables in the model.

Plan of Analysis for Fixed Effects Regression Models

The analyses for Research Question 2 will proceed in three main steps. First, I will describe how many respondents transitioned into filial care between Waves 5-10 (Table 18). I will also show descriptive statistics for the rest of the variables in this analysis (Tables 19-21). Second, I will proceed to multivariate analyses (Tables 22-23). In order to test Hypotheses 1-17, I will used fixed effects regression analyses, with psychological distress and psychological well-being as the dependent variables and the dummy variables for filial care transitions as the main independent variables. All models will include time-varying control variables. In each of these models, I will ensure that fixed effects are the appropriate modeling strategy using a Hausman test.

If all transition types show significant deleterious effects, Hypotheses 1-2 will be supported. If all transition types show improvement in psychological well-being, Hypothesis 3 will be supported. Hypotheses 4-15 suggested that particular transitions into filial care will significantly impact a caregiver's psychological functioning over time. The third step of the multivariate analyses involves testing whether the relationship between transitioning into filial care and psychological functioning differs between certain groups. If there are any significant

consequences associated with transitioning to filial care, I will test whether gender impacts the relationship between transitioning to filial care and changes in psychological functioning to test Hypotheses 16 and 17. To do this, I will create an interaction term that will contain the significant transition type and gender (1=female, 0=male) to examine whether the impact of transitioning into filial care is more or less harmful for men or women. If multiple transitions have a significant effect on caregiver's psychological functioning, I will only enter one interaction term per model to avoid collinearity.

Conclusion

The purpose of this chapter was to provide an overview of the data, methods, and measures I will use to answer the two main research questions. I will use data drawn from the Household, Income, and Labor Dynamics in Australia survey, a longitudinal, nationally representative dataset. I will utilize group-based trajectory modeling (in conjunction with multinomial logistic regression analysis) as well as fixed effects regression modeling to analyze the impact of patterns of elder care and transitions into filial care on caregivers' psychological distress and well-being over time. This dataset and these two approaches are unique, as many studies of elder care rely on non-representative samples using cross-sectional data. These limitations make results non-generalizable to the population, and researchers are also unable to draw causal conclusions from their results.

The use of these two methodologies addresses these limitations and also brings a more nuanced perspective to the study of filial care---it suggests that participation in elder care is dynamic, in that it can take many different forms. The data also allow me to understand several types of transitions into filial care, rather than assuming that all transition types are equally predictive of caregiver's psychological functioning. These approaches complement each other in

that the group-based approach will allow me to make comparisons of psychological functioning *between* different patterns of elder care, while the fixed effects strategy will allow me to see within-person changes in psychological functioning that occur as result of transitioning into caregiving. In the following chapter, I document patterns of filial care and psychological functioning. Then, I examine the probability of membership in a given pattern of psychological functioning based on one's membership in a given pattern of filial care.

CHAPTER 5

RESULTS

The purpose of this chapter is to examine how patterns of elder care are related to patterns of psychological functioning. To do so, I will use group-based trajectory modeling to identify patterns of time spent in elder care and patterns of psychological distress and psychological well-being. This analysis will proceed in four main steps. First, I will provide descriptive statistics of time spent in elder care and levels of psychological distress/well-being for the sample (Table 3). Second, I will identify patterns of elder care (Figures 1-3), psychological distress (Figures 4-6), and psychological well-being (Figures 7-9) for the full sample and for men and women separately. This portion of the analysis involves selecting the appropriate number of patterns (or subgroups) of each phenomenon, guided by the use of theory and statistical methods (see Table 4). Third, I will examine the relationship between patterns of elder care and patterns of psychological distress at two levels. At the bivariate level, I present the percentage of respondents who are members of patterns of psychological distress conditional on their membership in patterns of elder care for the full sample (Table 5) and also for women and men separately (Tables 6 and 7, respectively). For ease of interpretation, I graph these percentages in Figures 10-12. At the multivariate level, I present results from a series of multinomial logistic regression analyses that show the predicted probability of membership in a pattern of psychological distress based on membership in a pattern of elder care, controlling for a host of covariates. Descriptive statistics for these covariates are presented in Table 8, and Tables 9-11 show the multivariate results for distress models. Fourth, I examine the relationship

between patterns of elder care and patterns of psychological well-being at the bivariate level (Tables 12-14 and Figures 13-15) and the multivariate level (Tables 15-17). I end by summarizing the main findings of this chapter.

Descriptive Statistics

Table 3 displays descriptive statistics for hours spent in elder care, psychological distress, and psychological well-being across Waves 2-10 of HILDA. Respondents were included in the sample if they had values for all three of these variables in all waves. Respondents report spending anywhere from 0-168 hours in elder care in a typical week, though the modal response is spending zero hours in care. On average, people spend between one and two hours in elder care in a typical week. At each wave, women spend more time in elder care than do men. For example, in Wave 2, the average amount of time that women spent in elder care in a typical week was 1.74 hours, compared to .72 for men. A t-test of mean difference shows that this difference is statistically significant ($p<.001$).

The scales of psychological distress and psychological well-being range from 1-6, with higher values indicating higher levels of distress or well-being, respectively. For the full sample, the average psychological distress score ranged from 1.78-1.89 across the survey period. Across all waves, women had significantly higher mean levels of psychological distress than did men. For example, in Wave 4, the average psychological distress score for women was 1.90, while the average score for men was 1.79. A t-test of mean difference reveals that these two means differ significantly from one another ($p<.001$). The average psychological well-being score ranged from 4.24-4.30 across all nine waves of the study period. On average, women reported significantly lower psychological well-being scores than did men. For example, in Wave 6, the

average psychological well-being score for women was 4.23, while the average score for men was 4.33, and these means differed significantly from one another ($p<.001$).

Model Specification

I use the variables described above to identify patterns of elder care, psychological distress, and psychological well-being. In order to determine the number of distinct patterns of time spent in elder care, psychological distress, and psychological well-being, I estimated a series of group-based trajectory models. This modeling strategy assumes that there are distinct subgroups within the sample, each exhibiting a particular growth trajectory (Jones, Nagin and Roeder 2001, Muthén 2004). Models are estimated based on the distribution of the data. For example, in the models determining groups for time spent in elder care, I used a zero-inflated poisson (ZIP) transformation, as most respondents do not provide elder care across the study period. In contrast, psychological distress and psychological well-being scores follow a more normal distribution. Therefore, I chose the censored-normal (CNORM) transformation when determining the number of patterns of these phenomena.

In order to determine the number of groups, I relied upon the use of the Bayesian Information Criterion (BIC) and the Akaike Information Criterion (AIC). Statistically, the best-fitting model is the one with the lowest absolute value of BIC/AIC. These values are presented for each phenomenon in Table 4. For each phenomenon, I compared BIC/AIC statistics for models with 2-6 subgroups. For example, the two-group model of time spent in elder care for the full sample has a BIC value of -9459.93. The BIC value of the four-group model improves to -8742.50. When estimating a six-group model, however, the BIC value worsens slightly to -8758.34. Therefore, I selected the four-group model as the appropriate model for time spent in elder care for the full sample.

Comparing BIC/AIC values for 2-6 subgroup models for psychological distress and psychological well-being shows that for each subgroup added, the value of the BIC/AIC improves. Yet, when examining respondents' posterior probabilities of membership in each of these groups (i.e., the number of respondents in each pattern or subgroup), there often were not enough respondents to warrant the identification of an additional subgroup. In these cases, I chose the models with the lowest absolute BIC/AIC, provided that each trajectory group had at least 50 respondents. This meant that there were four patterns of psychological distress in the full sample, while women had three patterns and men had four. The best-fitting model of psychological well-being had five subgroups (or patterns) for the full sample and four subgroups for both men and women.

Once I determined the best-fitting number of groups, I turned to choosing the correct polynomial term for each group. I began by fitting all polynomial terms as the intercept term (i.e., 0). Next, I set all polynomial terms in the third order (i.e., cubic function).[6] I then proceeded to try every combination of polynomial terms possible for each set of groups (i.e., 0, 0, 0, 1, then 0, 0, 0, 2, etc). I selected the polynomial terms based on the lowest absolute value of the BIC, ensuring that these polynomial terms were statistically significant (results available from author). I turn now to describing the patterns of each of these phenomena in more detail.

Description of Trajectory Groups

In this section, I will describe the trajectory groups (or patterns) for time spent in elder care, levels of psychological distress, and levels of psychological well-being that I identified

[6] When attempting to fit above the third-order polynomial terms, models did not converge. Therefore, I did not consider quartic or cubic polynomial terms.

through group-based trajectory analysis. I will also describe how these trajectory groups differ based on gender. These patterns are exhibited in Figures 1-9.

Patterns of Time Spent in Elder Care

As stated in the theoretical framework chapter, I expected a variety of patterns of elder care. I suggested that a large portion of the sample would never participate in elder care over the course of the study period. I also predicted that there would be a group of people whose time spent in elder care increased over time, as well as a group whose time spent in elder care decreased over time. I also suggested that there would be two patterns of care wherein the number of hours spent in elder care were stable over time. First, I expected that there would be a group of people who provided minimal amounts of care (i.e., one or two hours per week) throughout the course of the study period. Second, I also predicted that there would be a small group of individuals who provided large amounts of care (i.e., 20-30 hours per week) throughout the nine waves of data. Below, I describe the patterns of care that I identified through the group-based modeling approach.

Figures 1-3 display patterns of time spent in elder care for the full sample, women, and men, respectively. As expected, there is a sizable group that never provides elder care across all waves. For the full sample, 77 percent of respondents fall into this pattern. Women's patterns of elder care mirror that of the full sample. I identified an "increaser" pattern for women and the full sample. In the full sample, 11 percent of respondents follow the "increaser" pattern. This is composed of a group of people who begin the sample providing no elder care, but over time, they take on more elder care. Conversely, there is also a "decreaser" pattern for the full sample and women. Members of this pattern begin the study period by providing elder care, but through the course of the study period, their hours spent in elder care decrease. Roughly six percent of

the full sample falls into this pattern. I term the final pattern of care for women and the full sample "high increasers." In this pattern, respondents start off providing about five hours of care in a typical week, and this amount increases to almost ten hours of care per week by Wave 7. After Wave 7, the amount of time spent in elder care decreases slightly.

Men's patterns deviate from those of the full sample. As Figure 3 shows, men have three patterns of time spent in elder care. While many men do not provide care (consistent with women and the full sample), they do not have a similar "increasing" or "decreasing" pattern, as do women and the full sample. Unlike women and the full sample, men have a pattern of elder care that I term "low-levels of care." Roughly 15 percent of men in the sample fall into this pattern. In it, men start off providing an hour or two of care per week, and this remains stable over the course of the study. Men's third pattern, which I term "moderate increasers," resembles the "high increasing" pattern of women and the full sample, in that they start off providing care, increase their time spent in care through Waves 6-7 and then their time spent in care declines slightly. I term this pattern for men "moderate" instead of "high," as the average amount of time in elder care at Wave 2 for men is between two and three hours of care in this pattern, compared to women whose time in elder care in "high increasing" pattern begins at roughly five hours of care per week and increases from there.

Therefore, there is support for the expectations regarding patterns of elder care I presented in Chapter 3. I expected there to be a large group of people who did not provide care over the study period. Indeed, there was a "non-caregiving" pattern that comprises the majority of the sample. I also expected that some people would increase or decrease their time spent in elder care over time. This was only true for women. Men, in contrast, showed the pattern of consistently low-levels of care that I predicted, though women did not. Finally, a pattern

emerged for both men and women that I did not predict: moderate and high increasers, respectively. The "moderate increaser" and "high increaser" patterns were curvilinear in shape---respondents in each of these patterns began the study period providing care, their amount of time spent in care increased over time, and then decreased near the end of the study period. I turn now to considering the patterns of psychological distress and psychological well-being.

Patterns of Psychological Distress

As stated in the theoretical framework chapter, I expected a number of trajectory groups for psychological distress based in upon previous studies of trajectories of psychological functioning (e.g., Choi et al. 2012). I expected some people's psychological distress would improve (i.e., decrease) over time, while others would worsen (i.e., increase). I also suggested that in addition to these patterns, there would be some people whose psychological distress remained stable over time. There is only support for the latter option---I identified several stable patterns of psychological distress.

For the full sample, there are four patterns of psychological distress, which suggests that there are various groups who experience different levels of distress (i.e., people who have low levels of distress or people who have high levels of distress). The slope of each pattern, however, is flat, indicating that most people report the same psychological distress scores over time (i.e., the people who report high levels of distress at Wave 2 report high levels of distress in subsequent waves). For the full sample and men, there are four patterns of psychological distress: low levels of distress, mid-low levels of distress, moderate levels of distress, and high levels of distress. For women, Figure 5 shows that there are three patterns of psychological distress: low levels of distress, moderate levels of distress, and high levels of distress. For all of these patterns, distress levels remain roughly consistent over time. Thus, the group-based

trajectory approach models different subgroups of psychological distress, though these subgroups display little variability in their distress levels over time.

Patterns of Psychological Well-Being

Figures 7-9 display trajectories of psychological well-being for the full sample, women, and men, respectively. Consistent with expectations regarding patterns of psychological distress, I suggested that there would be several patterns of psychological well-being: people whose psychological well-being increased over time, decreased over time, and stayed the same across time. The group-based trajectory models show groups of people have different levels of psychological well-being, but these levels remain relatively consistent over time. For example, I identified five patterns of psychological well-being for the full sample: low levels of well-being, mid-low levels of well-being, moderate levels of well-being, mid-high levels of well-being, and high levels of well-being. Over 70 percent of the sample fall into either the "moderate" or "mid-high" pattern of well-being. The shape of all identified patterns remained flat over time, indicating that if a person reported high levels of well-being at Wave 2, he/she was likely to report high levels of well-being at Wave 10. Men's and women's patterns of well-being took a similar shape as the full sample, though there were four patterns instead of five identified for both men and women: low levels of well-being, mid-low levels of well-being, moderate levels of well-being, and high levels of well-being. Half of all women and half of all men fell into the "moderate" pattern of psychological well-being.

Summary of Patterns

The purpose of this section was to provide descriptive statistics and identify patterns of elder care, psychological distress, and psychological functioning. I identified four patterns of elder care for women and the full sample (no elder care, increasers, decreasers, and high

increasers) and three patterns of care for men (no elder care, low-levels of care, and moderate increasers). I also presented four patterns of psychological distress for the full sample and men (low levels of distress, mid-low levels of distress, moderate levels of distress, and high levels of distress), and three patterns of psychological distress for women (low levels of distress, moderate levels of distress, and high levels of distress). Additionally, I showed five patterns of psychological well-being for the full sample (low levels of well-being, mid-low levels of well-being, moderate levels of well-being, mid-high levels of well-being, and high levels of well-being) and four patterns for men and women (low levels of well-being, mid-low levels of well-being, moderate levels of well-being, and high levels of well-being). I explained that there was little variation in either psychological distress or psychological well-being within each pattern. Rather, levels of psychological distress/well-being were consistent over time. In the following sections, I will show how participation in elder care is related to patterns of psychological distress/well-being. The descriptive patterns I presented above suggest that there may be little individual variation in patterns of psychological functioning, though membership in a high or low pattern of distress/well-being may be predicted by a pattern of caregiving. Now, I turn to describing the interrelationships between patterns of time spent in elder care and psychological distress/well-being at the bivariate level.

Relationship between Patterns of Elder Care and Psychological Distress

Summary of Expectations

In the theoretical framework chapter, I presented several expectations about the relationships between patterns of elder care and psychological distress. Now that I have identified patterns of elder care, psychological distress, and psychological well-being, I can elucidate these expectations to include the language of the identified patterns. Insights from the

adaptation perspective suggest that there would be similarities in the probability of membership in a given pattern of psychological distress for the different patterns of elder caregiving. Based on the wear-and-tear perspective of caregiving, people in patterns of caregiving who provided the most amount of care over time (i.e., "moderate increasers" and "high increasers") would be expected to have the highest probability of membership in the "high" pattern of psychological distress. Insights gleaned from the stress process model suggest that women who provided care would have a higher probability of being in the "high" patterns of psychological distress than women who did not provide care, while men who gave care would not have different odds of membership in patterns of psychological functioning than men who did not give care. In contrast, based on the societal norm that men are not socialized to provide care, men who provided care would be expected to have a higher probability of being in the "high" pattern of psychological distress than men who did not provide elder care, while women would not have such outcomes. I turn now to showing results from bivariate associations and multinomial logistic regression models that show the odds of membership in patterns of psychological distress for members of different patterns of elder care to see if these expectations are supported.

Bivariate Results between Patterns of Elder Care and Patterns of Psychological Well-Being

Table 5 displays the percentage of membership in a pattern of psychological distress given membership in a pattern of elder care for the full sample. Put differently, this table shows the percentage distribution of membership in each distress trajectory group for all patterns of elder care. As such, each row sums to 100. For example, 24 percent of respondents in the "no elder care" pattern are in "low level" of distress pattern, while 54 percent are in the "mid-low" pattern, 19 percent are in the "moderate" pattern, and almost three percent are in the "high" pattern. While the highest percentage of membership in a pattern of distress for all elder care

patterns is the "mid-low" distress pattern, it is notable that "decreasers" and "high increasers" have higher percentages of their members in the moderate level of distress category (25 and 33 percent, respectively) than do the members of the "no elder care" pattern. Additionally, five percent of "high increasers" are in the "high" distress pattern, while the other caregiving patterns have lower percentages of their members in the "high" distress pattern. I performed Pearson chi-square tests of the frequencies between patterns of elder care and patterns of psychological distress to measure whether the association between these two categorical variables is likely to occur in the population. The significant chi-square value indicates that the relationship between patterns of elder care and patterns of psychological functioning is likely not due to chance and (X^2=31.02, p<.001). These findings are represented graphically in Figure 10.

Tables 6 and 7 show the percentage of membership in a pattern of psychological distress given membership in a pattern of elder care for women and men, respectively. The logic of each of these tables mirrors that of Table 5. For ease of interpretation, results from these tables are represented in bar charts in Figures 11 and 12, respectively. For women, Table 6 and Figure 11 show that "increasers" and have roughly the same percentage of members in each pattern of psychological distress as the "no elder care" pattern. For "decreasers" and "high increasers" however, there is a greater percentage of member in the "high" level of distress pattern than there is for "increasers" and respondents in the "no elder care" pattern. The Pearson chi-square statistic examining the association between these two variables is not significant.

For men, Table 7 displays that 21 percent of men in the "no elder care" pattern are in the "low" distress pattern, compared with only 16 percent of men in the "low level of care" pattern and 13 percent of men in the "moderate increaser" pattern. While most men in the "no elder care" and "low level of care" patterns are in the "mid-low" pattern of distress, 41 percent of men

in the "moderate increaser" pattern care are in the "moderate" pattern of distress. Additionally, men in the "moderate increaser" pattern of care have a higher percentage of members in the "high" level of distress pattern than men in the "no elder care" and "low level of care" patterns. Results from a Pearson chi-square test show that the association between men's patterns of care and patterns of psychological distress are statistically significant (X^2=25.84, p<.001).

In summary, most women are members of the "moderate" distress pattern. Yet, women who are "high increasers" have a higher percentage of membership in the pattern of "high" levels of psychological distress than women in any other caregiving pattern. The most likely pattern of psychological distress for men in the "no elder care," and "low levels of care" patterns is the mid-low pattern of psychological distress. For men who are "moderate increasers" the most likely pattern of psychological distress is a less advantageous one: the "moderate" level of psychological distress. These findings suggest that some people are able to adapt to their caregiving situation and experience low levels of psychological distress over time, while other people (men and women in the moderate/high increasing pattern) have deleterious outcomes in terms of psychological distress, likely as a result of the large amounts of time that they spend in elder care. This is supportive of the wear-and-tear perspective of caregiving, which suggests that the more care a person provides, the worse their psychological distress will be. I turn now to considering the multivariate relationship between patterns of elder care and psychological distress.

Multivariate Results for the Relationship between Patterns of Elder Care and Patterns of Psychological Distress

In order to test the likelihood of membership in a pattern of psychological distress based on a pattern of elder care beyond the bivariate level, I turn to multinomial logistic regression

(Tables 9-11). This form of regression is appropriate when the dependent variable is nominal and has more than two categories. Coefficients for these models will be exponentiated to provide odds ratios (i.e., e^b). An odds ratio is a measure of association between an independent and dependent variable. It represents the odds that an outcome will occur given a particular independent variable, relative to a base category. To interpret an odds ratio, simply calculate $100(e^b - 1)$. This indicates the percentage change in the odds of membership in the category of the dependent variable (relative to the base category) for a one-unit change in the independent variable (Allison 2012).

Each table has two models: Model 1 examines the effect of patterns in elder care on the odds of membership in a pattern of psychological distress without any control variables. Model 2 steps in relevant covariates to examine whether or not the relationship between patterns of elder care and patterns of psychological functioning exists net of important socio-demographic characteristics. In the section below, I provide a brief overview of the descriptive statistics for these covariates (Table 8). Then, I provide an overview of significant control variables before describing how patterns of elder care affect membership in patterns of psychological distress for the full sample (Table 9), women only (Table 10) and men only (Table 11).

Descriptive Statistics of Wave 2 Covariates

Table 8 displays results of descriptive statistics for covariates that will be used in the multivariate analyses linking patterns of elder care to patterns of psychological functioning. Each of these covariates is measured at Wave 2 of HILDA. The average respondent perceives high levels of social support (mean=5.45, range=1-7). The average weekly income of respondents is less than 500 Australian dollars at Wave 2. Women's average weekly pay is less than that of men (290 Australian dollars to 585 Australian dollars, respectively). The average

respondent has around two children and three siblings. Over half the sample is married or partnered at Wave 2. Around 65 percent have at least a high school degree and over half of all respondents are employed. A small percentage of respondents (less than two percent) are of Aboriginal status. Slightly over half of the respondents (54 percent) are women. I turn now to describing how these variables affected the odds of membership in a pattern of psychological distress.

Overview of Significant Controls for Distress Models

For the full sample, a one unit increase in the scale of social support is associated with a decrease in the odds of membership of being in the "mid-low," "moderate," and "high" patterns of psychological distress relative to the "low" pattern of psychological distress (ex.: for the models predicting membership in the "mid-low" pattern see Table 9, Panel A, Model 2, b=-.55, O.R.=.58, p<.001). Put differently, social support is associated with a reduction in one's odds of being in patterns of distress that are associated with higher levels of distress than the pattern with the lowest level of distress. These results are consistent with models that analyzed men and women separately. Being employed is associated with an increase in one's odds of membership in the "mid-low" and "moderate" patterns of psychological distress relative to the "low" pattern of distress. For example, women who are employed are nearly twice as likely as women who are not employed to be in the "moderate" level of distress pattern than the "low" level of distress pattern (Table 10, Panel A, Model 2, b=.67, O.R.=1.95, p<.001). Yet, being employed at Wave 2 is associated with a 62 percent reduction in the odds of membership in the "high" pattern of distress, relative to the "low" pattern of distress for the full sample (Table 9, Panel C, Model 2, b=-.96, O.R.=.38, p<.01) as well as men.

Having children and/or being in a romantic relationship has benefits for psychological distress levels. An additional child is associated with a reduction in the odds of membership in the "mid-low," "moderate," or "high" patterns of psychological distress relative to the "low" pattern of psychological distress for the full sample. People who are married or partnered have lower odds of being in the "moderate" or "high" patterns of psychological distress relative to the "low" patterns of psychological distress. For example, women who are married or partnered at Wave 2 have 41 percent lower odds of being in the "high" pattern of psychological distress than the "low" pattern of distress, relative to their single, widowed, or divorced counterparts (Table 10, Panel B, Model 2, b=-.53, O.R.=.59, p<.01). There is a positive relationship between number of siblings and membership in the "moderate" pattern of distress. For example, each additional sibling that men have is associated with a seven percent increase in the odds of membership in the "moderate" pattern of distress relative to the "low" pattern of distress (Table 11, Panel B, Model 2, b=.07, O.R.=1.07, p<.10). For women, having a high school degree or more at Wave 2 is associated with a reduction in the odds of being in the "moderate" or "high" patterns of psychological distress. Women tend to experience poor outcomes in terms of membership in distress patters relative to men. Women have higher odds of membership in the "mid-low," "moderate," and "high" patterns of distress, relative to the "low" level of distress pattern than do men. Women are almost twice as likely as men to be in the "high" pattern of distress than the "low" pattern of distress (Table 9, Panel C, Model 2, b=.59, O.R.=1.80, p<.05).

Multivariate Relationship between Patterns of Elder Care and Patterns of Psychological Distress

For the full sample, people in the "decreaser" and "high increaser" patterns of elder care had a higher likelihood of membership in the "moderate" level of distress pattern (relative to membership in the "low" level pattern of distress) than people who did not provide elder care.

For example, “high increasers” were twice as likely as people who did not provide elder care to be in the “moderate” level pattern of distress than the “low” level pattern of distress (Table 9, Panel B, Model 2, b=.74, O.R.=2.10, p<.10). The marginally significant positive effect of membership in the “decreaser” on the likelihood of membership in the “high” pattern of psychological distress (relative to the “low” pattern of distress) went away once relevant covariates were added to Model 2 in Panel C of Table 9. The significant effect of membership in the “high increaser” pattern on the odds of membership in the “high” pattern of distress was reduced to marginal significance once control variables were added to the model (Table 9, Panel C, Model 2, b=.83, O.R.=2.29, p<.10). Women in the “high increaser” pattern were twice as likely as women who did not participate in elder care to be in the “high” level of distress pattern relative to the “low” level of distress pattern (Table 10, Panel B, Model 2, b=.83, O.R.=2.29, p<.01).

Men in the “low levels of care” pattern had higher odds of membership in the “mid-low” and “moderate” patterns of psychological distress than men who did not provide care (relative to membership in the “low” pattern of distress). For example, men who provided low levels of elder care over time were almost twice as likely as men who did not provide care to be in the “moderate” pattern of distress relative to the “low” pattern of distress (Table 11, Panel B, Model 2, b=.53, O.R.=1.70, p<.05). Men in the “high increaser” patterns had higher odds of membership in the “moderate” patterns of distress than men who did not provide care, relative to the “low” level pattern of distress. For example, men who were “high increasers” were almost three times as likely as men who did not provide care to be in the “moderate” pattern of psychological distress than they were to be in the “low” level pattern of distress (Table 11, Panel B, Model 2, b=1.06, O.R.=2.89, p<.05). Patterns of elder care did not significantly predict

men's membership in the pattern of "high" levels of distress (relative to the "low" level of distress).

Summary of Results of Relationship between Patterns of Elder Care and Psychological Distress

Overall, participation in certain patterns of elder care significantly predicted membership in patterns of distress that were associated with disadvantageous levels of distress. For example, women in the "high increaser" patterns were more likely than women who did not provide care to be members of the "high" pattern of distress relative to the low pattern of distress. Similarly, men who were in either the "low level" or "moderate increaser" pattern of care were more likely than men who did not participate in elder care to experience moderate levels of distress than low levels of distress. These findings suggest that women who are in the "increaser" or "decreaser" patterns of elder care are able to adapt to the stressors of caregiving, while women in the "high increaser" pattern and men in the "low level" and "moderate increaser" patterns experience the "wear-and-tear" of caregiving in terms of distress. I turn now to presenting the results of models that analyze the relationship between patterns of elder care and patterns of psychological well-being. The sequence of these results mirrors that of the psychological distress models. I begin by providing a summary of expectations. Then, I turn to explaining the bivariate relationship between patterns of elder care and psychological well-being before examining results at the multivariate level.

Relationship between Patterns of Elder Care and Psychological Well-Being

Summary of Expectations

I couched expectations for the interrelationships between patterns of elder care and patterns of psychological well-being in terms of the adaptation perspective and wear-and-tear perspective of caregiving. The adaptation perspective of caregiving suggests that although

caregiving may be initially stressful, caregivers learn to manage this stress and do not experience deleterious outcomes over time relative to non-caregivers. Other perspectives, in contrast, suggest that caregiving may be associated with increased levels of distress. While these perspectives do not make explicit predictions regarding psychological well-being, some scholars suggest that psychological well-being is the opposite of psychological distress (Ross and Mirowsky 2006). According to this perspective, if a person is experiencing more psychological distress, he/she is necessarily experiencing lower levels of well-being. Based on this conceptualization, people who gave care should have a higher probability of membership in the "low" pattern of well-being. There may also be gender differences wherein women who are caregivers experience higher probabilities of membership in the "low" pattern of psychological well-being relative to women who are not caregivers, as female caregivers have limited resources. Alternatively, male caregivers may show higher probabilities of membership in disadvantageous patterns of well-being relative to men who are not caregivers, as men are not socialized to provide care and doing so may be particularly harmful to men's psychological well-being.

In the theoretical framework chapter, I also suggested, however, that there is a debate in the literature regarding the conceptualization of psychological functioning. While some scholars suggest that it is the opposite end of the spectrum from psychological distress, others argue that it is a multidimensional concept and people can experience high levels of distress and well-being simultaneously. This dovetails with findings in the caregiving literature that in addition to the stress of being caregiver, there are also psychological benefits to providing care (Kramer 1997). If this perspective is supported, then respondents who participate in elder care will have a higher probability of membership in the "high" pattern of well-being than respondents who do not

provide care. I turn now to describing the results of models that examine the interrelationships between patterns of elder care and patterns of psychological well-being.

Bivariate Results between Patterns of Elder Care and Patterns of Psychological Well-Being

Results regarding the bivariate relationship between patterns of elder care and patterns of psychological well-being are presented for the full sample, women, and men in Tables 12, 13, and 14 respectively. For ease of interpretation, results from these tables are presented in bar graphs in Figures 13-15. Each table shows the percentage of membership in a pattern of psychological distress, conditional upon membership in a pattern of elder care. For the full sample, Table 12 and Figure 13 show that among those in the "no elder care" pattern, seven percent are in the "low" level pattern of well-being, 17 percent are in the "mid-low" pattern, 30 percent are in the "moderate" pattern, 41 percent are in the "mid-high" pattern, and four percent are in the "high" level pattern of psychological well-being. The most likely pattern of psychological well-being for a member of the "increaser" pattern of elder care to experience is the "mid-high" pattern of well-being (42.5 percent). While the greatest percentage of membership for patters of psychological well-being for each pattern of elder care is the "mid-high" pattern, it is notable that among the "high increasers," the percentage of respondents in the "low level" of psychological well-being pattern is 19 percent, which is twice the amount that members of other elder care patterns have for being in this group. This suggests that while there is a substantial number of people who experience mid-high levels of well-being, the group of people who spend the most time in elder care have a disproportionate number of its members in the "low level" pattern of well-being. Results of Pearson chi-square test show that the patterns of elder care and patterns of psychological well-being for the full sample are significantly associated with one another (X^2=39.45, p<.001)

The interrelationships between patterns of elder care and patterns of psychological well-being for women are presented in Table 13. This table is represented graphically in Figure 14. Table 13 shows that the most likely pattern of well-being for all patterns of elder care is the "moderate" pattern of well-being. The decreasing pattern has the largest percentage of its membership in the "high" level pattern of psychological well-being, compared to the other patterns of care. Alternatively, the "high increasers" have a greater percentage of its members in the "low-level well-being" pattern, relative to the other patterns of care.

The interrelationships between patterns of elder care and patterns of psychological well-being for men are shown in Table 14 and Figure 15. Table 14 shows that within each caregiving pattern, the greatest percentage of members belong to the "moderate" pattern of psychological well-being. Only five percent of men who are members of the "low-level" pattern of care are in the "high" pattern of psychological well-being, while 16 percent of men in the "low level" pattern of care are in the "low level" pattern of well-being (compared to 13 percent of men in the "no elder care" pattern). These findings are even more pronounced for men in the "moderate increaser" pattern of care. Almost 30 percent of men who are in the "moderate increaser" pattern of elder care are in the "low level" pattern of well-being and less than two percent of these men are in the "high level" pattern of well-being. The association between patterns of elder care and patterns of well-being for men is marginally significant (X^2=12.25, p<.10)

In summary, the most likely pattern of psychological well-being for all patterns of elder care for both men and women (including the non-caregiving pattern) is the "moderate" pattern of well-being. Women's "high increaser" pattern has a higher percentage of its members in the "low level" pattern of well-being than any other caregiving pattern. The same is true for men. Men's and women's participation in elder care (particularly in the pattern of caregiving that

involves the most care over time) is associated with low-levels of well-being. These findings support the wear-and-tear perspective, which suggests that more time in elder care is associated with deleterious consequences for caregiver's mental health. I turn now to examining the multivariate relationship between patterns of elder care and patterns of psychological well-being.

Multivariate Analyses for Well-Being Models

Overview of Significant Controls for Well-Being Models

Multivariate models capturing the odds of membership in patterns of psychological well-being control for a host of covariates. All of these were measured at Wave 2. These covariates are the same as those presented in the multivariate psychological distress models. For an overview, see Table 8. In general, an increase in the scale of social support is associated with an increase in the odds of patterns of well-being that are associated with better psychological functioning. For example, a one-unit increase in the scale of social support is associated with a 36 percent increase in one's odds of membership in the membership in the "mid-low" pattern of well-being relative to the "low" pattern of well-being (Table 15, Panel A, Model 2, b=.31, O.R.=1.36, p<.001). The advantages of social support apply to both women and men. Being married is associated with a higher likelihood of membership in "moderate" patterns of well-being than "low" patterns for women. For example, women who are married have almost 40 percent higher odds than their single, widowed, and divorced counterparts of being in the pattern of "moderate" well-being relative to the "low level" of well-being pattern (Table 16, Panel B, Model 2, b=.33, O.R.=1.39, p<.10).

Being employed is associated with higher levels of well-being than not being employed. For example, employed respondents are twice as likely to be members of the "moderate" well-being pattern than the "low" well-being pattern as their non-employed respondents (Table 15,

Panel B, Model 2, b=.70, O.R.=2.01, p<.001). Women have a higher chance of membership in the "mid-low" and "moderate" level patterns of well-being (relative to the "low" pattern) than do men, though women have lower odds of membership in the "mid-high" (relative to the "low" pattern) pattern than do men. For women, an additional child is associated with a nearly 30 percent increase in the odds of membership in the "moderate" pattern of well-being relative to the "low" pattern of well-being (Table 16, Panel B, Model 2, b=.25, O.R.=1.28, p<.001). For men, an increase in the number of siblings is associated with a reduction in the odds of membership in the "high" pattern of well-being relative to the "low" pattern of well-being (Table 17, Panel C, Model 2, b=-.11, O.R.=.90, p<.10).

Multivariate Relationship between Patterns of Elder Care and Patterns of Psychological Well-Being

In general, participation in patterns of elder care was associated with deleterious consequences for the odds of membership in patterns of well-being that are defined by high levels of well-being. For example, in the full sample, respondents in the "decreasing" pattern had 60 percent lower odds than respondents who did not provide care of being in the "high" level of well-being pattern relative to the "low" level of well-being pattern (Table 15, Panel D, Model 2, b=-.92, O.R.=.40, p<.05). Women in the "high increaser" pattern of caregiving had deleterious consequences in terms of their membership in patterns of psychological well-being. For example, women who are "high increasers" had lower odds than women who did not provide care of being in the "mid-low," "moderate" and "high" level patterns of well-being (relative to the "low" pattern of well-being), net of the effects of relevant covariates. Additionally, women who increased their time in elder care over time had lower odds of membership in the "high" level of well-being pattern (relative to the "low" level of well-being pattern) than women who

did not provide care (Table 16, Panel C, Model 2, b=-1.38, O.R.=.25, p<.05). Men who are member of the "moderate increaser" pattern of elder care had lower odds of membership in the "mid-low" and "moderate" patterns of well-being (relative to the "low" pattern of well-being) than men who did not provide care. For example, men who were "moderate increasers" had 56 percent lower odds of membership in the "moderate" pattern of well-being relative to the "low" pattern of well-being than men who did not provide care (Table 17, Panel B, Model 1, b=-.82, O.R.=.44, p<.05).

Summary of Multivariate Findings for Well-Being Models

Overall, participation in certain patterns of elder care was associated with lower levels of psychological well-being. In particular, women who participated in the "high increaser" pattern and men who participated in the "moderate increaser" pattern had lower odds of membership in the patterns well-being that were associated with more advantageous levels of psychological well-being over time, relative to women and men who did not participate in care. Additionally, women who increased their time spent in elder care over time had lower odds of membership in the "high" pattern of well-being (relative to the "low" pattern) than did women who did not provide care. Women's membership in the "decreasing" pattern of elder care did not significantly predict their levels of psychological well-being nor did men's participation in the "low level" pattern of care. This indicates that some groups are able to adapt to their caregiving arrangements, while other groups (particularly those that spent the most amount of time in elder care) experience the "wear-and-tear" of caregiving.

Conclusion

The purpose of this chapter was to examine the interrelationships between patterns of elder care and psychological distress, as well as patterns of elder care and psychological well-

being. I identified several patterns of care, patterns of psychological distress, and patterns of psychological well-being for the full-sample and women and men separately. Overall, I found four patterns of care for women and the full sample: a large group of people who never provide elder care from Waves 2-10, a group whose time in care is minimal at the start of the study period and increases over time, a group whose time in care is large at the beginning of study period and minimal by the end, and a group that starts off providing care, and this time increases then decreases slightly over time. For men, I identified three patterns of elder care: a group of non-caregivers, a group that provides consistently small amounts of care over time, and a group that starts off proving care and this amount increases then decreases slightly over time. I identified multiple patterns of psychological distress and psychological well-being. The most notable aspect of all of these patterns is that they are relatively flat. There are different levels of psychological distress and psychological well-being, but people in these patterns have relatively consistent distress and well-being scores over time.

Overall, I found that certain patterns of caregiving were not significantly related to patterns of psychological distress/well-being while others were. For example, women's membership in the "decreaser" or "increaser" patterns of care did not significantly predict their membership in patterns of distress or well-being. Moreover, men's membership in the "low level" pattern of care did not significantly impact their likelihood of membership in patterns of well-being. These results indicate that men and women in these groups showed no differences in psychological functioning relative to non-caregivers. This suggests that some groups were able to adapt to caregiving, while other groups experience deleterious outcomes. For example, men who were members of the "low level" or "moderate increaser" pattern of care and women who were in the "high increaser" pattern had a greater likelihood of membership in distress patterns

that were associated with higher levels of distress than men and women who did not participate in care. Additionally, women in the "high increaser" pattern and men in the "moderate increaser" pattern were less likely to be members of the patterns of well-being that were associated with advantageous levels of psychological well-being.

Therefore, participation in certain caregiving patterns was associated with higher distress levels and lower levels of well-being relative to not participating in care. It is notable that the patterns of care that were associated with the most disadvantageous outcomes were those that were defined by the highest amount of time spent in elder care. Thus, insights from the wear-and-tear perspective are supported for people who spend many hours in caregiving over time. When people spend small amounts of time in elder care over time, they are able to adapt. This insight points to the utility of the group-based trajectory approach in the study of elder care, as different caregiving groups experience dissimilar outcomes in terms of psychological functioning. In the following chapter, I use a different methodological technique to examine the relationship between elder care and caregivers' psychological functioning. Instead of examining differences in levels of psychological functioning between various types of caregiving patterns as I did in this chapter, I use fixed effects regression modeling to determine within-individual changes in psychological functioning that are associated with transitioning into a filial caregiving role.

Table 3: Descriptive Statistics for Variables in Group-Based Dual Trajectory Models

	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 7	Wave 8	Wave 9	Wave 10
	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)
Full Sample (n=2,756)									
Time Spent in Elder Care	1.27 (8.11)	1.23 (7.71)	1.06 (5.95)	1.45 (8.84)	1.38 (8.09)	1.65 (9.55)	1.75 (9.51)	1.66 (8.61)	1.69 (8.45)
Psychological Distress	1.89 (.86)	1.86 (.84)	1.84 (.83)	1.85 (.82)	1.82 (.83)	1.81 (.83)	1.81 (.81)	1.78 (.81)	1.80 (.80)
Psychological Well-being	4.30 (1.03)	4.28 (1.00)	4.28 (1.01)	4.26 (1.00)	4.27 (1.01)	4.26 (1.01)	4.24 (1.02)	4.26 (1.01)	4.24 (1.02)
Women Only (n=1,490)									
Time Spent in Elder Care	1.74*** (9.75)	1.49* (8.11)	1.27* (6.35)	1.82** (10.37)	1.92*** (10.20)	1.94* (10.49)	2.02+ (10.33)	1.84 (8.87)	1.90+ (8.65)
Psychological Distress	1.95*** (.89)	1.90** (.85)	1.90*** (.84)	1.88* (.81)	1.87*** (.83)	1.84** (.82)	1.84** (.81)	1.83*** (.83)	1.85*** (.82)
Psychological Well-being	4.23*** (1.03)	4.23* (.98)	4.24* (1.00)	4.23+ (.99)	4.23** (1.00)	4.22* (1.01)	4.20* (1.01)	4.23+ (1.01)	4.20* (1.01)
Men Only (n=1,266)									
Time Spent in Elder Care	.72 (5.54)	.92 (7.20)	.81 (5.45)	1.01 (6.58)	.76 (4.39)	1.31 (8.31)	1.44 8.43)	1.46 (8.27)	1.45 (8.20)
Psychological Distress	1.81 (.83)	1.81 (.82)	1.79 (.81)	1.81 (.82)	1.77 (.82)	1.77 (.80)	1.76 (.81)	1.72 (.77)	1.75 (.79)
Psychological Well-being	4.36 (1.02)	4.32 (1.02)	4.32 (1.02)	4.29 (1.02)	4.33 (1.02)	4.30 (1.01)	4.28 (1.03)	4.30 (1.01)	4.28 (1.02)

Notes: Time spent in elder care is presented here as the raw number to ease interpretation. In the group-based dual trajectory model, the values of this variable are logged to reduce skewness.

+ indicates that women's mean values significantly differ from men's values at the .10 level within that wave; one-tailed tests

* indicates that women's mean values significantly differ from men's at the .05 level within that wave; one-tailed tests

** indicates that women's mean values significantly differ from men's at the .01 level within that wave; one-tailed tests

*** indicates that women's mean values significantly differ from men's at the .001 level within that wave; one-tailed tests

Table 4: Goodness of Model Fit: Bayesian Information Criterion (BIC) and Akaike Information Criterion (AIC)

	Hours in Elder Care		Psychological Distress		Psychological Well-being	
	BIC	AIC	BIC	AIC	BIC	AIC
Number of Trajectory Groups Full Sample (N=2,756)						
2	-9459.93	-9451.05	-28680.90	-28669.06	-31463.78	-31451.93
3	-8815.83	-8801.03	-26933.54	-26915.77	-30131.74	-30113.98
4	-8742.50	-8721.77	-26218.28	-26194.59	-29657.51	-29633.83
5	-8750.52	-8723.77	-25790.37	-25760.76	-29393.18	-29363.57
6	-8758.34	-8725.77	-25645.20	-25609.67	-29295.51	-29259.98
Number of Trajectory Groups Women Only (n=1,490)						
2	-5840.45	-5832.49	-15785.04	-15774.42	-17169.82	-17159.21
3	-5474.78	-5461.51	-14916.68	-14900.76	-16535.53	-16519.61
4	-5434.48	-5415.90	-14481.23	-14460.00	-16291.71	-16270.48
5	-5441.78	-5417.00	-14276.99	-14250.46	-16172.01	-16145.47
6	-5449.09	-5419.90	-14206.27	-14174.44	-16129.45	-16097.61
Number of Trajectory Groups Men Only (N=1,266)						
2	-3614.40	-3606.68	-12861.56	-12851.27	-14254.75	-14244.46
3	-3340.98	-3328.12	-12004.25	-11988.82	-13580.08	-13564.65
4	-3348.12	-3330.12	-11676.41	-11655.84	-13349.96	-13329.39
5	-3323.12	-3299.97	-11506.41	-11480.69	-13215.24	-13189.53
6	-3330.28	-3301.99	-11434.62	-11403.76	-13169.36	-13138.50

Table 5: Percentage of Respondents in Patterns of Psychological Distress Conditional on Membership in Pattern of Elder Care for Full Sample

Patterns of Elder Care	Patterns of Psychological Distress			
	Low-Levels of Distress	Mid-Low Levels of Distress	Moderate Levels of Distress	High Levels of Distress
No Elder Care	24.27%	53.66%	19.21%	2.86%
Increasers	24.38%	55.00%	17.50%	3.13%
Decreasers	18.36%	51.80%	25.90%	3.93%
High Increasers	17.20%	44.59%	33.12%	5.10%

Pearson Chi-Square: 31.02***
Note: n=2,756; ***p<.001

Table 6: Percentage of Respondents in Patterns of Psychological Distress Conditional on Membership in Pattern of Elder Care for Women Only

Patterns of Elder Care	Patterns of Psychological Distress		
	Low Levels of Distress	Moderate Levels of Distress	High Levels of Distress
No Elder Care	28.61%	56.15%	15.24%
Increasers	26.29%	58.86%	14.86%
Decreasers	23.46%	56.79%	19.75%
High Increasers	23.21%	50.89%	25.89%

Pearson Chi-Square: 10.53, non-significant
Note: n=1,490

Table 7: Percentage of Respondents in Patterns of Psychological Distress Conditional on Membership in Pattern of Elder Care for Men Only

Patterns of Elder Care	Patterns of Psychological Distress			
	Low-Levels of Distress	Mid-Low Levels of Distress	Moderate Levels of Distress	High Levels of Distress
No Elder Care	20.69%	52.02%	19.41%	7.88%
Low-Levels of Care	15.71%	52.36%	25.65%	6.28%
Moderate Increasers	13.33%	31.67%	41.67%	13.33%

Pearson Chi-Square: 25.84***
Note: n=1,266; p<.001

Table 8: Descriptive Statistics for Covariates in Multinomial Logistic Regression Models

	Wave 2		
	Full Sample	Women Only	Men Only
	Mean (Std. Deviation)	Mean (Std. Deviation)	Mean (Std. Deviation)
Social Support	5.45 (.96)	5.58 (.97)	5.30 (.92)
Income	424.86 (567.56)	290.09 (396.37)	584.96 (686.45)
Number of Children	1.85 (1.53)	1.85 (1.52)	1.84 (1.55)
Number of Siblings	2.88 (2.24)	2.88 (2.24)	2.88 (2.24)
		Percentages	
% Married or Partnered	60.96%	58.26%	65.14%
% High School Degree or Beyond	65.14%	59.03%	72.33%
% Employed	60.52%	54.09%	68.09%
% Aboriginal	1.27%	1.46%	1.04%
N	2, 756	1,490	1,266

Table 9: Multinomial Logistic Regression Predicting Odds of Membership in Pattern of Psychological Distress for Full Sample (n=2,756)

Panel A: Pattern of Mid-Low Level of Distress vs. Pattern of Low Level of Distress

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.02	1.02	0.05	1.05
Decreasers	0.24	1.27	0.20	1.22
High Increasers	0.16	1.17	0.12	1.13
Wave 2 Covariates				
Social Support	---	---	-0.55	0.58 ***
Income	---	---	0.00	1.00
Education[b]	---	---	0.04	1.04
Marital Status[c]	---	---	-0.05	0.95
Employment Status[d]	---	---	0.33	1.39 **
Number of Children	---	---	-0.16	0.85 ***
Number of Siblings	---	---	0.02	1.02
Aboriginal Status[e]	---	---	1.17	3.22
Female	---	---	0.60	1.82 ***

Panel B: Pattern of Moderate Level of Distress vs. Pattern of Low Level of Distress

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	-0.10	0.90	-0.07	0.93
Decreasers	0.58	1.79 **	0.49	1.63 *
High Increasers	0.89	2.44 ***	0.74	2.10 **
Wave 2 Covariates				
Social Support	---	---	-1.27	0.28 ***
Income	---	---	0.00	1.00 *
Education[b]	---	---	-0.18	0.84
Marital Status[c]	---	---	-0.38	0.68 **
Employment Status[d]	---	---	0.18	1.20
Number of Children	---	---	-0.20	0.82 ***
Number of Siblings	---	---	0.06	1.06 *
Aboriginal Status[e]	---	---	1.31	3.71
Female	---	---	0.89	2.44 ***

Panel C: Pattern of High Level of Distress vs. Pattern of Low Level of Distress

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.08	1.08	-0.07	0.93
Decreasers	0.60	1.82 +	0.56	1.75
High Increasers	0.92	2.51 *	0.83	2.29 +
Wave 2 Covariates				
Social Support	---	---	-1.76	0.17 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.13	0.88
Marital Status[c]	---	---	-0.33	0.72
Employment Status[d]	---	---	-0.96	0.38 **
Number of Children	---	---	-0.32	0.73 ***
Number of Siblings	---	---	0.05	1.05
Aboriginal Status[e]	---	---	2.61	13.60 **
Female	---	---	0.59	1.80 *

Notes: a: Reference category is no elder care pattern; b: Reference category is no high school degree; c: Reference category is not married or partnered; d: Reference Category is not employed; e; Reference category comprises people who are not of Aboriginal status; +p<.10, *p<.05, **p<.01, ***p<.001

Table 10: Multinomial Logistic Regression Predicting Odds of Membership in Pattern of Psychological Distress for Women Only (n=1,490)

Panel A: Pattern of Moderate Level of Distress vs. Pattern of Low Level of Distress

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.13	1.14	0.10	1.11
Decreasers	0.21	1.23	0.38	1.46
High Increasers	0.11	1.12	0.23	1.26
Wave 2 Covariates				
Social Support	---	---	-0.52	0.59 ***
Income	---	---	0.00	1.00 **
Education[b]	---	---	-0.24	0.79 +
Marital Status[c]	---	---	-0.26	0.77 +
Employment Status[d]	---	---	0.67	1.95 ***
Number of Children	---	---	-0.17	0.84 ***
Number of Siblings	---	---	0.03	1.03
Aboriginal Status[e]	---	---	-0.17	0.84

Panel B: Pattern of High Level of Distress vs. Pattern of Low Level of Distress

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.06	1.06	0.06	1.06
Decreasers	0.46	1.58	0.51	1.67
High Increasers	0.74	2.10 **	0.83	2.29 **
Wave 2 Covariates				
Social Support	---	---	-1.23	0.29 ***
Income	---	---	0.00	1.00 ***
Education[b]	---	---	-0.22	0.80 ***
Marital Status[c]	---	---	-0.53	0.59 **
Employment Status[d]	---	---	0.31	1.36
Number of Children	---	---	-0.31	0.73 ***
Number of Siblings	---	---	0.09	1.09 *
Aboriginal Status[e]	---	---	1.33	3.78 +

Notes: a: Reference category is no elder care pattern; b: Reference category is no high school degree; c: Reference category is not married or partnered; d: Reference Category is not employed; e; Reference category comprises people who are not of Aboriginal status; +p<.10, *p<.05, **p<.01, ***p<.001

Table 11: Multinomial Logistic Regression Predicting Odds of Membership in Pattern of Psychological Distress for Men Only (n=1,266)

	Model 1		Model 2	
Panel A: Pattern of Mid-Low Level of Distress vs. Pattern of Low Level of Distress				
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Low Levels of Care	0.28	1.32	0.34	1.40 +
High Increasers	-0.06	0.94	-0.13	0.88
Wave 2 Covariates				
Social Support	---	---	-0.58	0.56 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.07	0.93
Marital Status[c]	---	---	-0.22	0.80
Employment Status[d]	---	---	0.27	1.31
Number of Children	---	---	-0.15	0.86 **
Number of Siblings	---	---	-0.02	0.98
Aboriginal Status[e]	---	---	0.73	2.08
Panel B: Pattern of Moderate Level of Distress vs. Pattern of Low Level of Distress				
	Model 1		**Model 2**	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Low Levels of Care	0.55	1.73 *	0.53	1.70 *
High Increasers	1.20	3.32 **	1.06	2.89 *
Wave 2 Covariates				
Social Support	---	---	-1.30	0.27 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.07	0.93
Marital Status[c]	---	---	-0.16	0.85
Employment Status[d]	---	---	0.14	1.15
Number of Children	---	---	-0.20	0.82 **
Number of Siblings	---	---	0.07	1.07 +
Aboriginal Status[e]	---	---	1.26	3.53
Panel C: Pattern of High Level of Distress vs. Pattern of Low Level of Distress				
	Model 1		**Model 2**	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Low Levels of Care	0.05	1.05	0.02	1.02
High Increasers	0.97	2.64 +	0.77	2.16
Wave 2 Covariates				
Social Support	---	---	-1.78	0.17 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.44	0.64
Marital Status[c]	---	---	-0.45	0.64
Employment Status[d]	---	---	-0.28	0.76
Number of Children	---	---	-0.08	0.92
Number of Siblings	---	---	0.00	1.00
Aboriginal Status[e]	---	---	1.53	4.62

Notes: a: Reference category is no elder care pattern; b: Reference category is no high school degree; c: Reference category is not married or partnered; d: Reference Category is not employed; e; Reference category comprises people who are not of Aboriginal status; +p<.10, *p<.05, **p<.01, ***p<.001

Table 12: Percentage of Respondents in Patterns of Psychological Well-Being Conditional on Membership in Pattern of Elder Care for Full Sample

Patterns of Elder Care	Patterns of Psychological Well-Being				
	Low Levels of Well-Being	Mid-Low Levels of Well-Being	Moderate Levels of Well-Being	Mid-High Levels of Well-Being	High Levels of Well-Being
No Elder Care	7.26%	17.20%	30.32%	41.33%	3.89%
Increasers	4.38%	20.00%	30.00%	42.50%	13.13%
Decreasers	11.80%	19.34%	29.51%	37.05%	2.30%
High Increasers	19.11%	16.56%	24.84%	36.31%	3.18%

Pearson Chi-Square: 39.45***
Note: n=2,756; p<.001

Table 13: Percentage of Respondents in Patterns of Psychological Well-Being Conditional on Membership in Pattern of Elder Care for Women Only

Patterns of Elder Care	Patterns of Psychological Well-Being			
	Low Levels of Well-Being	Mid-Low Levels of Well-Being	Moderate Levels of Well-Being	High Levels of Well-Being
No Elder Care	9.45%	35.03%	49.47%	6.06%
Increasers	11.43%	39.43%	47.43%	1.71%
Decreasers	9.88%	35.80%	46.91%	7.41%
High Increasers	21.43%	26.79%	48.21%	3.57%

Pearson Chi-Square: 23.88**
Note: n=1,490; p<.01

Table 14: Percentage of Respondents in Patterns of Psychological Well-Being Conditional on Membership in Pattern of Elder Care for Men Only

Pattern of Elder Care	Patterns of Psychological Well-Being			
	Low Levels of Well-Being	Mid-Low Levels of Well-Being	Moderate Levels of Well-Being	High Levels of Well-Being
No Elder Care	13.40%	29.46%	52.51%	4.63%
Low-Levels of Care	16.23%	30.89%	47.64%	5.24%
Moderate Increasers	28.33%	26.67%	43.33%	1.67%

Pearson Chi-Square: 12.25+
Note: n=1,266; +p<.10

Table 15: Multinomial Logistic Regression Predicting Odds of Membership in Pattern of Psychological Well-Being for Full Sample (n=2,756)

	Model 1		Model 2	
Panel A: Pattern of Mid-Low Level of Well-Being vs. Pattern of Low Level of Well-Being				
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.66	1.93	0.71	2.03
Decreasers	-0.37	0.69	-0.38	0.68
High Increasers	-1.01	0.36 ***	-1.08	0.34 ***
Wave 2 Covariates				
Social Support	---	---	0.31	1.36 ***
Income	---	---	0.00	1.00
Education[b]	---	---	0.32	1.38 +
Marital Status[c]	---	---	0.16	1.17
Employment Status[d]	---	---	0.51	1.67 *
Number of Children	---	---	-0.09	0.91
Number of Siblings	---	---	0.06	1.06
Aboriginal Status[e]	---	---	-0.47	0.63
Female	---	---	0.62	1.86 ***
Panel B: Pattern of Moderate Level of Well-Being vs. Pattern of Low Level of Well-Being				
	Model 1		**Model 2**	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.49	1.63	0.62	1.86
Decreasers	-0.51	0.60 *	-0.48	0.62 *
High Increasers	-1.16	0.31 ***	-1.12	0.33 ***
Wave 2 Covariates				
Social Support	---	---	0.85	2.34 ***
Income	---	---	0.00	1.00
Education[b]	---	---	0.06	1.06
Marital Status[c]	---	---	0.25	1.28
Employment Status[d]	---	---	0.70	2.01 ***
Number of Children	---	---	0.01	1.01
Number of Siblings	---	---	0.02	1.02
Aboriginal Status[e]	---	---	-0.42	0.66
Female	---	---	0.30	1.35 +
Panel C: Pattern of Mid-High Level of Well-Being vs. vs. Pattern of Low Level of Well-Being				
	Model 1		**Model 2**	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.53	1.70	0.63	1.88
Decreasers	-0.59	0.55 **	-0.49	0.61 *
High Increasers	-1.10	0.33 ***	-0.97	0.38 ***
Wave 2 Covariates				
Social Support	---	---	1.33	3.78 ***
Income	---	---	0.00	1.00
Education[b]	---	---	0.13	1.14
Marital Status[c]	---	---	0.01	1.01
Employment Status[d]	---	---	0.45	1.57 *
Number of Children	---	---	0.13	1.14 *
Number of Siblings	---	---	0.03	1.03
Aboriginal Status[e]	---	---	-0.52	0.59
Female	---	---	-0.26	0.77 ***

Panel D: Pattern of High Level of Well-Being vs. vs. Pattern of Low Level of Well-Being				
	Model 1		**Model 2**	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	0.28	1.32	0.26	1.30
Decreasers	-1.01	0.36 *	-0.92	0.40 *
High Increasers	-1.16	0.31 *	-1.13	0.32 *
Wave 2 Covariates				
Social Support	---	---	1.68	5.37 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.47	0.63 +
Marital Status[c]	---	---	0.16	1.17
Employment Status[d]	---	---	0.16	1.17
Number of Children	---	---	0.18	1.20 *
Number of Siblings	---	---	-0.04	0.96
Aboriginal Status[e]	---	---	-0.16	0.85
Female	---	---	-0.37	0.69

Notes: a: Reference category is no elder care pattern; b: Reference category is no high school degree; c: Reference category is not married or partnered; d: Reference Category is not employed; e; Reference category comprises people who are not of Aboriginal status; +p<.10, *p<.05, **p<.01, ***p<.001

Table16: Multinomial Logistic Regression Predicting Odds of Membership in Pattern of Psychological Well-Being for Women Only (n=1,490)

	Model 1		Model 2	
Panel A: Pattern of Mid-Low Level of Well-Being vs. Pattern of Low Level of Well-Being				
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	-0.07	0.93	-0.11	0.90
Decreasers	-0.02	0.98	0.13	1.14
High Increasers	-1.09	0.34 ***	-1.03	0.36 ***
Wave 2 Covariates				
Social Support	---	---	0.43	1.54 ***
Income	---	---	0.00	1.00
Education[b]	---	---	0.44	1.55 *
Marital Status[c]	---	---	0.19	1.21
Employment Status[d]	---	---	0.07	1.07
Number of Children	---	---	0.07	1.07
Number of Siblings	---	---	0.00	1.00
Aboriginal Status[e]	---	---	-0.87	0.42
Panel B: Pattern of Moderate Level of Well-Being vs. Pattern of Low Level of Well-Being				
	Model 1		**Model 2**	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	-0.23	0.79	-0.30	0.74
Decreasers	-0.10	0.90	0.02	1.02
High Increasers	-0.84	0.43 **	-0.85	0.43 ***
Wave 2 Covariates				
Social Support	---	---	1.04	2.83 ***
Income	---	---	0.00	1.00
Education[b]	---	---	0.12	1.13
Marital Status[c]	---	---	0.33	1.39 +
Employment Status[d]	---	---	0.08	1.08
Number of Children	---	---	0.25	1.28 ***
Number of Siblings	---	---	-0.02	0.98
Aboriginal Status[e]	---	---	-0.14	0.87
Panel C: Pattern of High Level of Well-Being vs. Pattern of Low Level of Well-Being				
	Model 1		**Model 2**	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Increasers	-1.45	0.23 *	-1.38	0.25 *
Decreasers	0.16	1.17	0.38	1.46
High Increasers	-1.35	0.26 *	-1.28	0.28 *
Wave 2 Covariates				
Social Support	---	---	1.51	4.53 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.02	0.98
Marital Status[c]	---	---	-0.22	0.80
Employment Status[d]	---	---	-0.16	0.85
Number of Children	---	---	0.29	1.34 **
Number of Siblings	---	---	0.00	1.00
Aboriginal Status[e]	---	---	0.09	1.09

Notes: a: Reference category is no elder care pattern; b: Reference category is no high school degree; c: Reference category is not married or partnered; d: Reference Category is not employed; e; Reference category comprises people who are not of Aboriginal status; +p<.10, *p<.05, **p<.01, ***p<.001

Table 17: Multinomial Logistic Regression Predicting Odds of Membership in Pattern of Psychological Well-Being for Men Only (n=1,266)

Panel A: Pattern of Mid-Low Level of Well-Being vs. Pattern of Low Level of Well-Being

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Low Levels of Care	-0.14	0.87	-0.08	0.92
Moderate Increasers	-0.85	0.43 *	-0.83	0.44 *
Wave 2 Covariates				
Social Support	---	---	0.67	1.95 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.27	0.76
Marital Status[c]	---	---	0.09	1.09
Employment Status[d]	---	---	0.72	2.05 **
Number of Children	---	---	-0.06	0.94
Number of Siblings	---	---	-0.01	0.99
Aboriginal Status[e]	---	---	-0.04	0.96

Panel B: Pattern of Moderate Level of Well-Being vs. Pattern of Low Level of Well-Being

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Low Levels of Care	-0.29	0.75	-0.23	0.79
Moderate Increasers	-0.94	0.39 **	-0.82	0.44 *
Wave 2 Covariates				
Social Support	---	---	1.32	3.74 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.18	0.84
Marital Status[c]	---	---	-0.12	0.89
Employment Status[d]	---	---	0.33	1.39
Number of Children	---	---	0.06	1.06
Number of Siblings	---	---	0.00	1.00
Aboriginal Status[e]	---	---	-0.22	0.80

Panel C: Pattern of High Level of Well-Being vs. Pattern of Low Level of Well-Being

	Model 1		Model 2	
	b	**Odds Ratio**	**b**	**Odds Ratio**
Pattern of Elder Care[a]				
Low Levels of Care	-0.07	0.93	-0.10	0.90
Moderate Increasers	-1.77	0.17 +	-1.60	0.20
Wave 2 Covariates				
Social Support	---	---	1.65	5.21 ***
Income	---	---	0.00	1.00
Education[b]	---	---	-0.53	0.59
Marital Status[c]	---	---	-0.10	0.90
Employment Status[d]	---	---	0.04	1.04
Number of Children	---	---	0.13	1.14
Number of Siblings	---	---	-0.11	0.90 +
Aboriginal Status[e]	---	---	0.50	1.65

Notes: a: Reference category is no elder care pattern; b: Reference category is no high school degree; c: Reference category is not married or partnered; d: Reference Category is not employed; e; Reference category comprises people who are not of Aboriginal status; +p<.10, *p<.05, **p<.01, ***p<.001

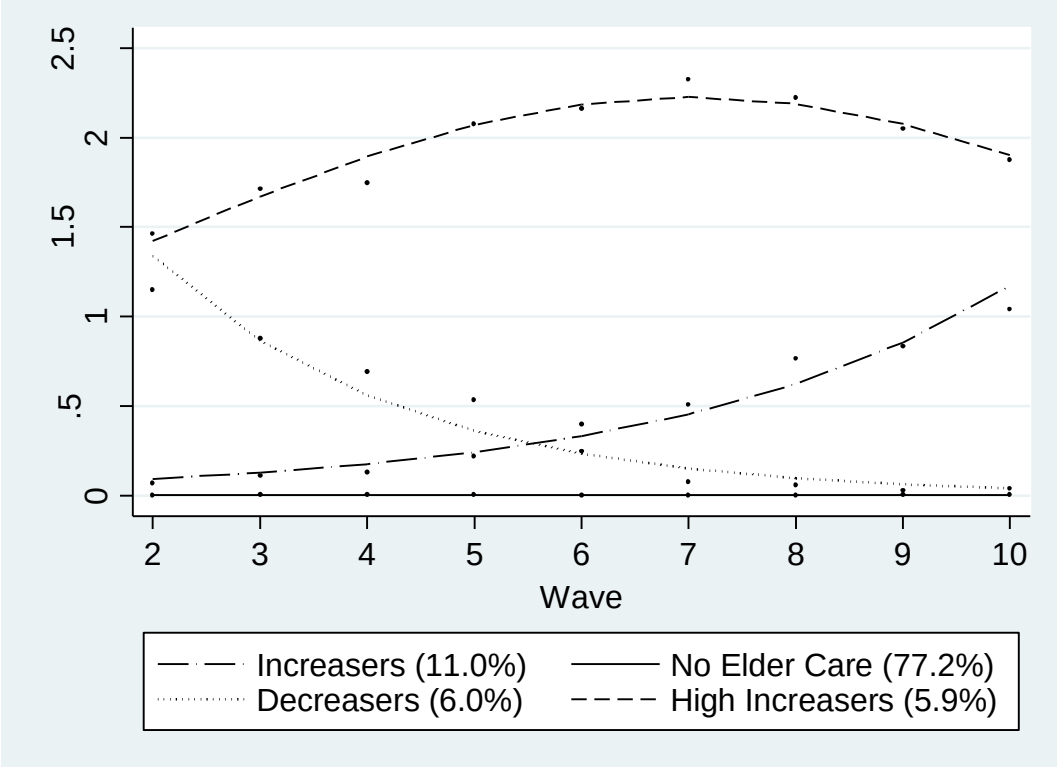

Figure 1: Patterns of Elder Care for Full Sample

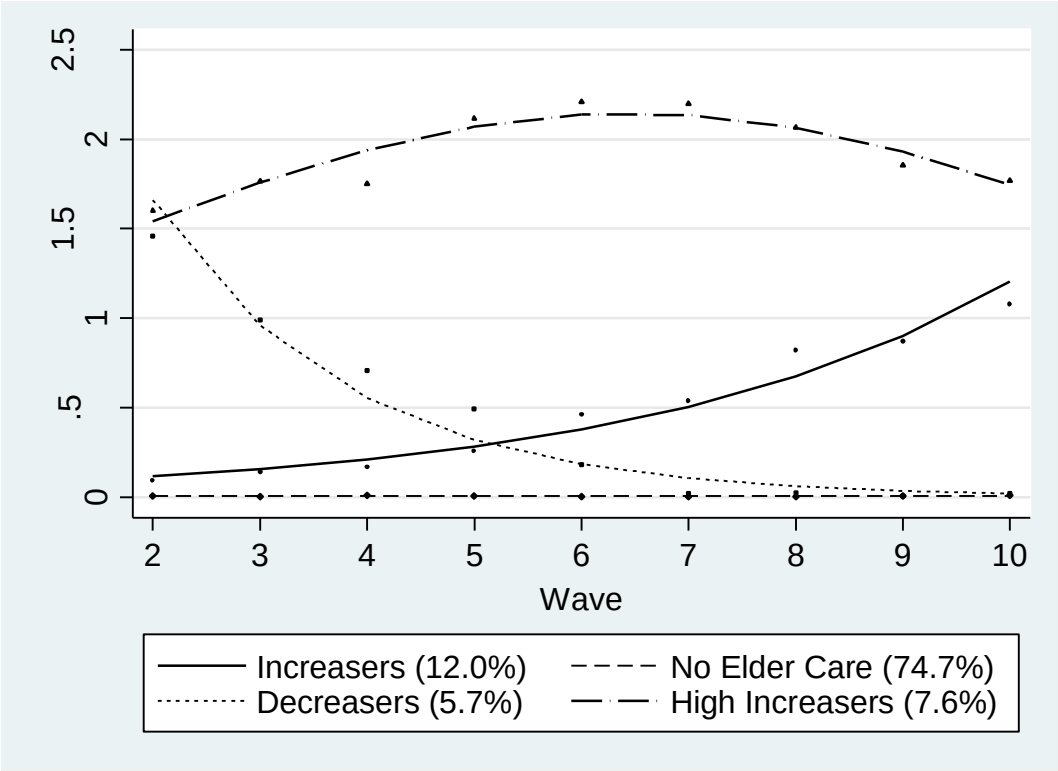

Figure 2: Patterns of Elder Care for Women

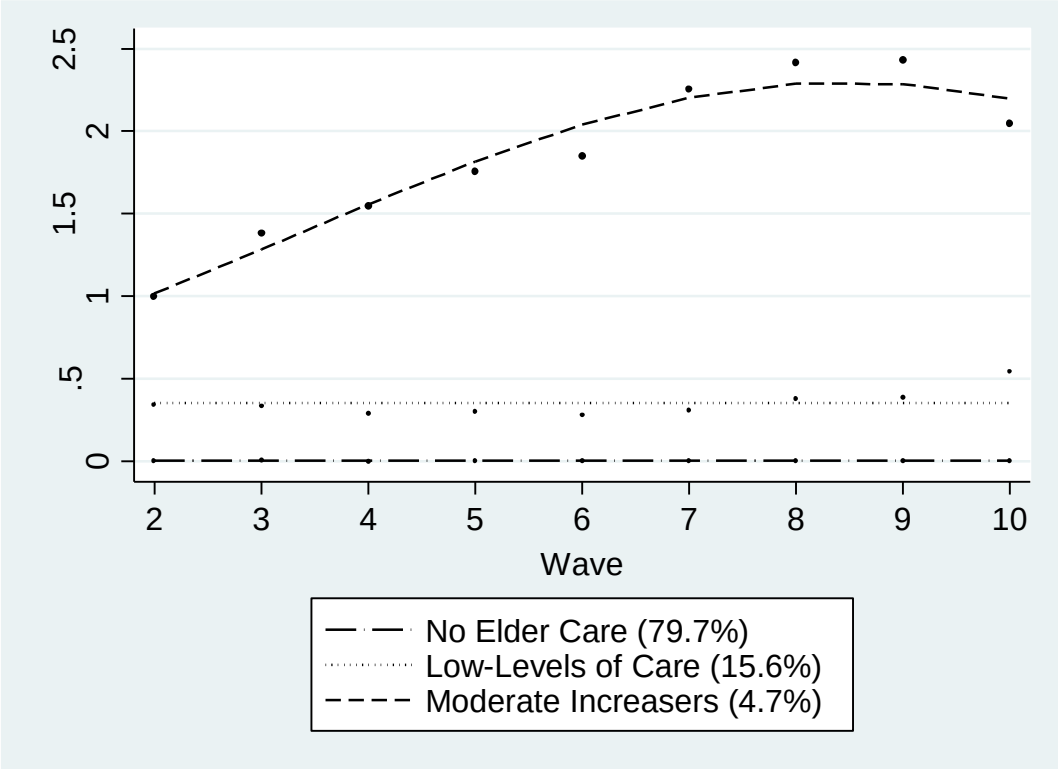

Figure 3: Patterns of Elder Care for Men

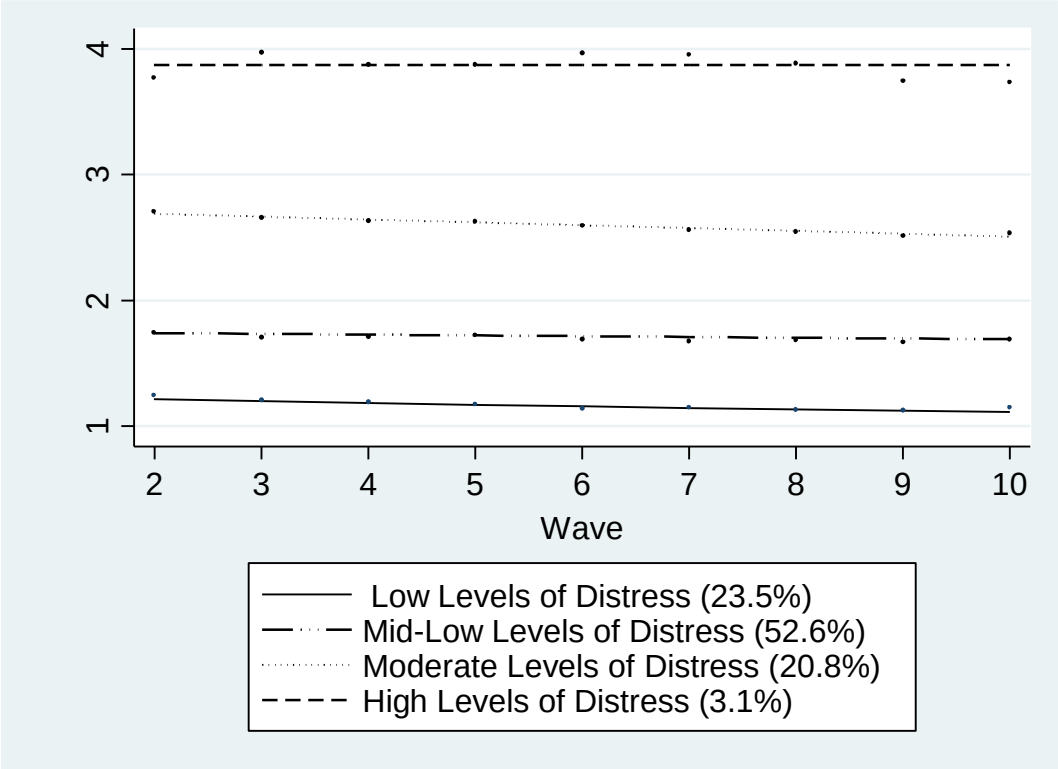

Figure 4: Patterns of Psychological Distress for Full Sample

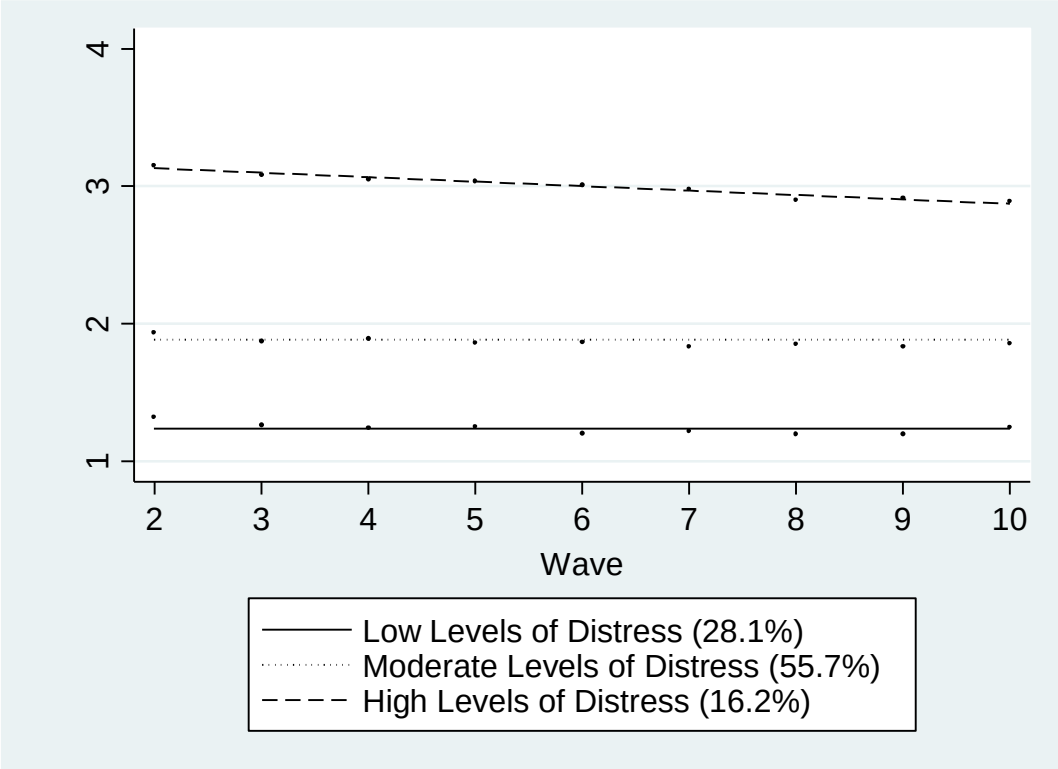

Figure 5: Patterns of Psychological Distress for Women

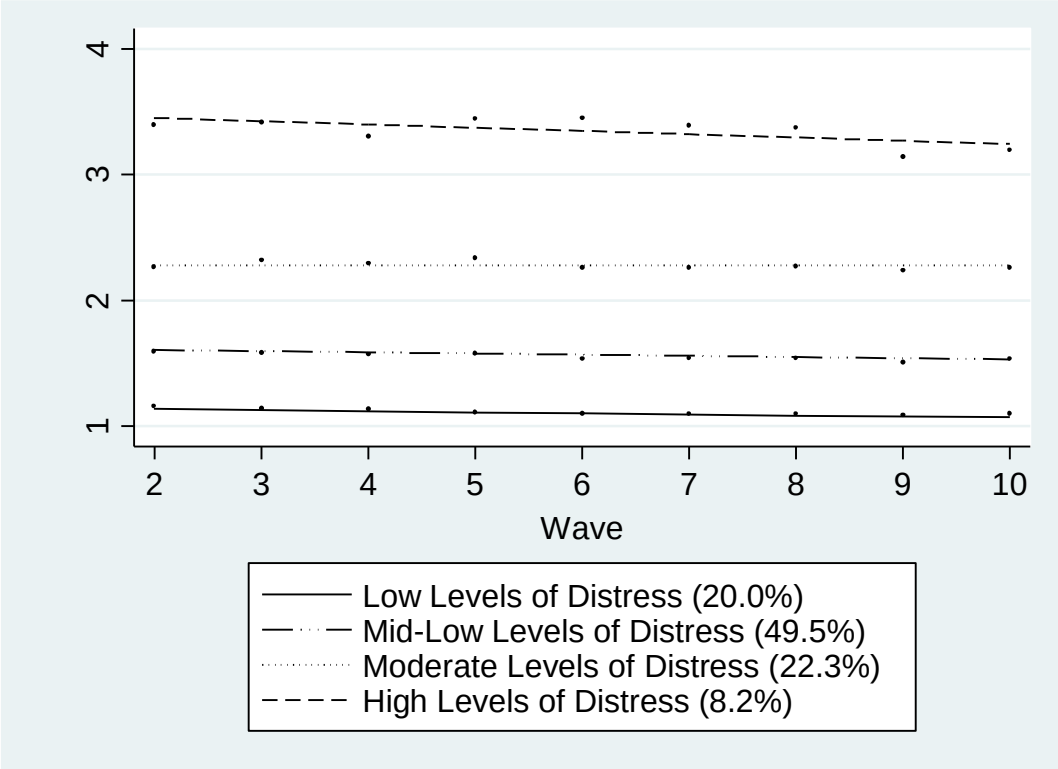

Figure 6: Patterns of Psychological Distress for Men

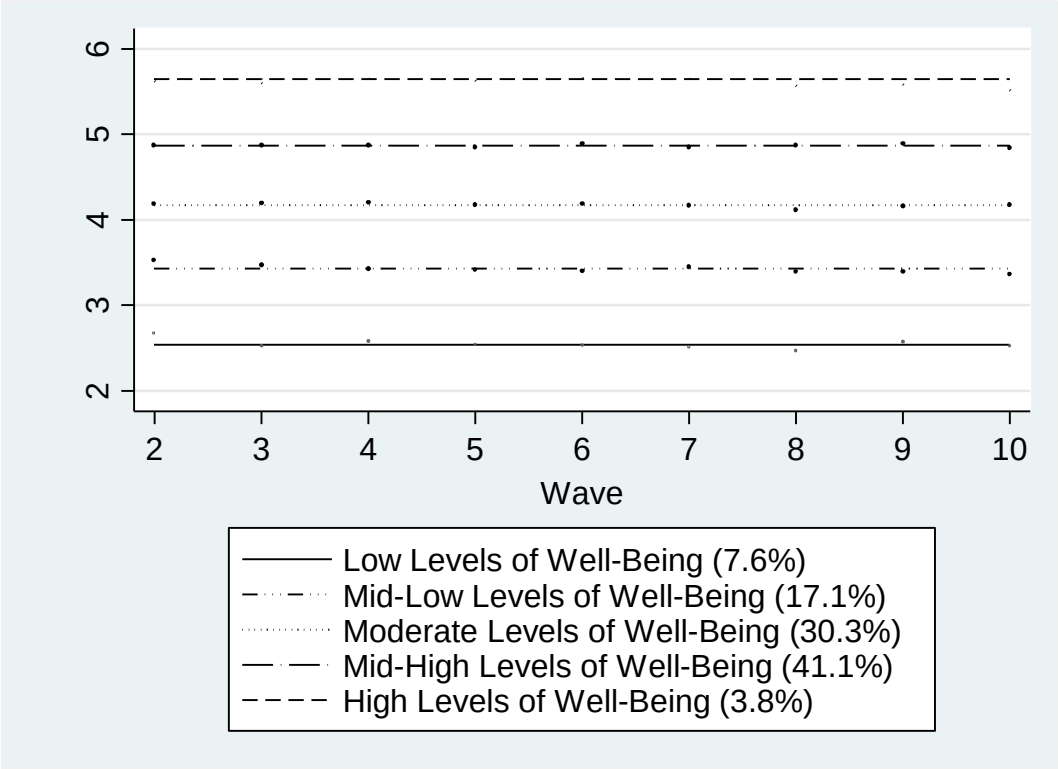

Figure 7: Patterns of Psychological Well-Being for Full Sample

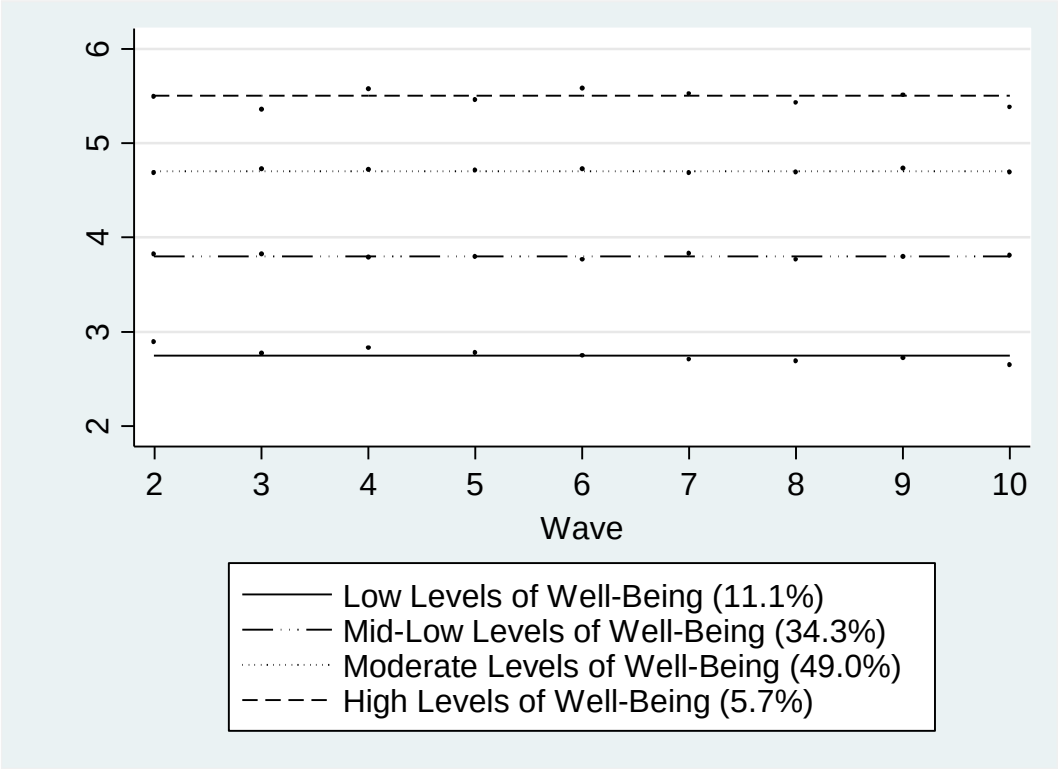

Figure 8: Patterns of Psychological Well-Being for Women

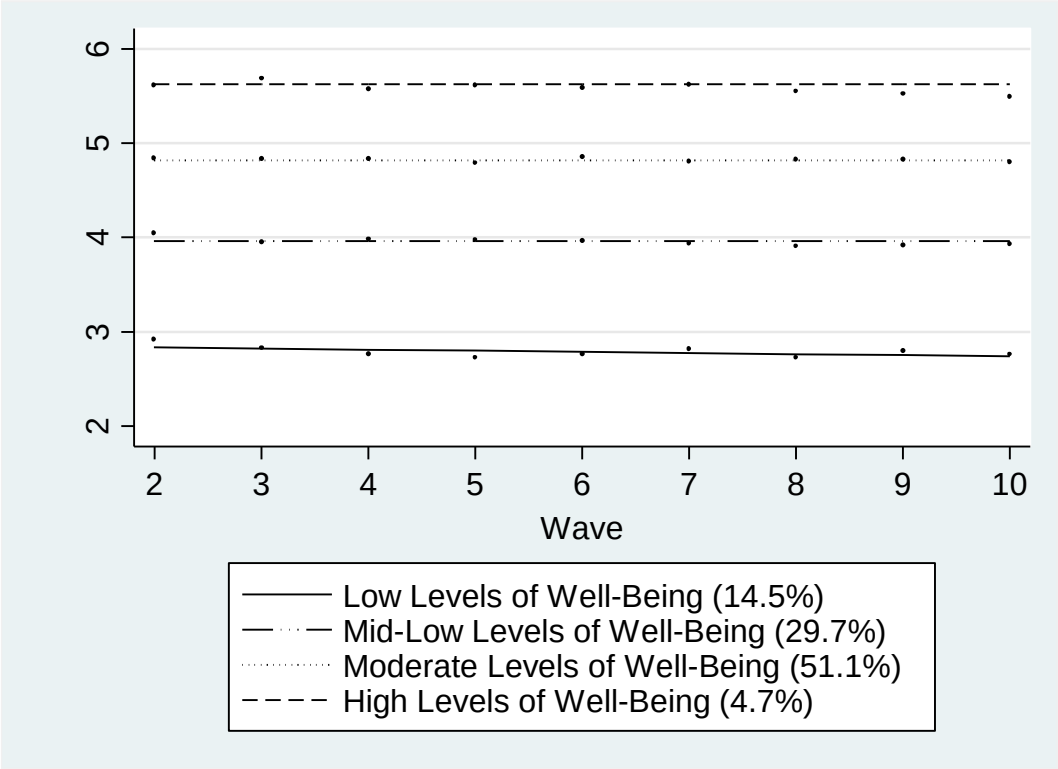

Figure 9: Patterns of Psychological Well-Being for Men

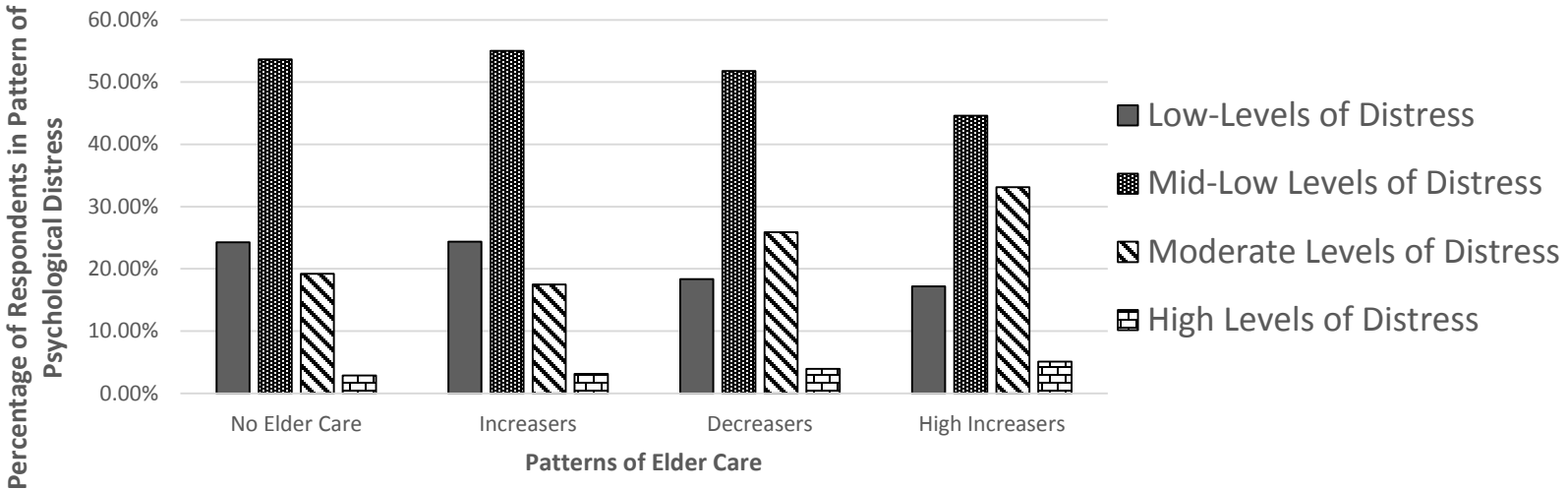

Figure 10: Percentage of Respondents in Patterns of Psychological Distress Conditional on Membership in Pattern of Elder Care for Full Sample

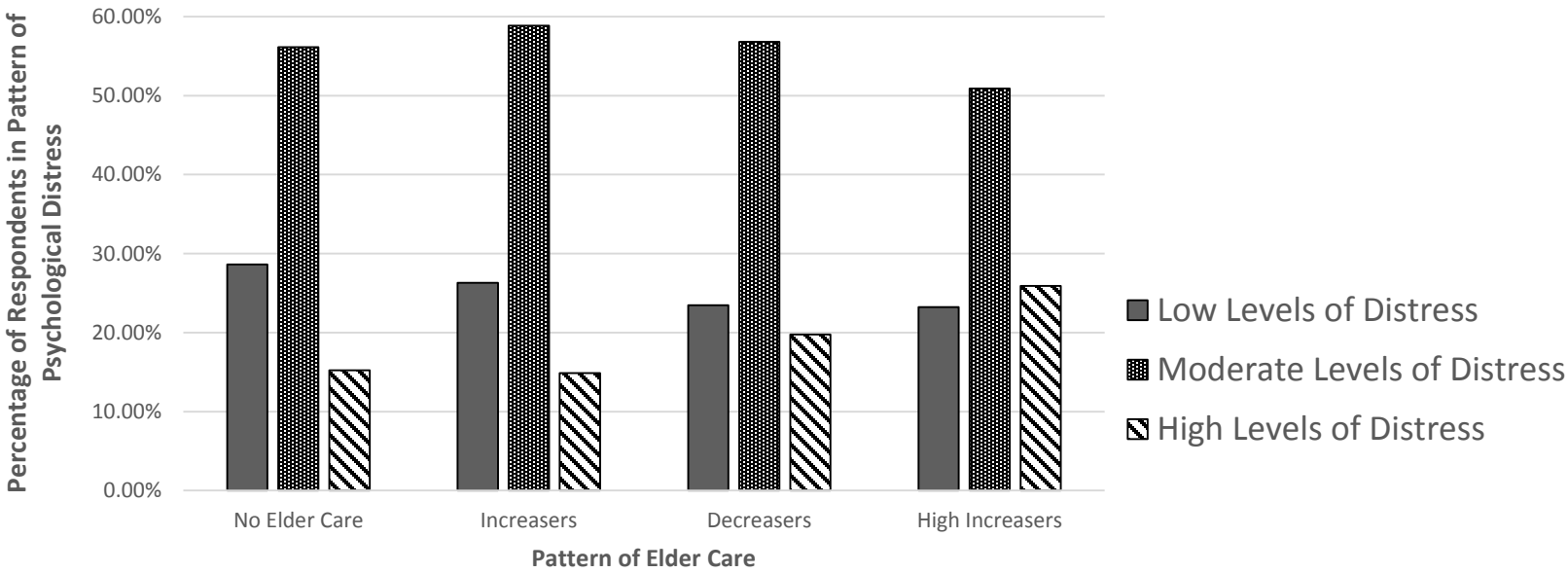

Figure 11: Percentage of Respondents in Patterns of Psychological Distress Conditional on Membership in Pattern of Elder Care for Women Only

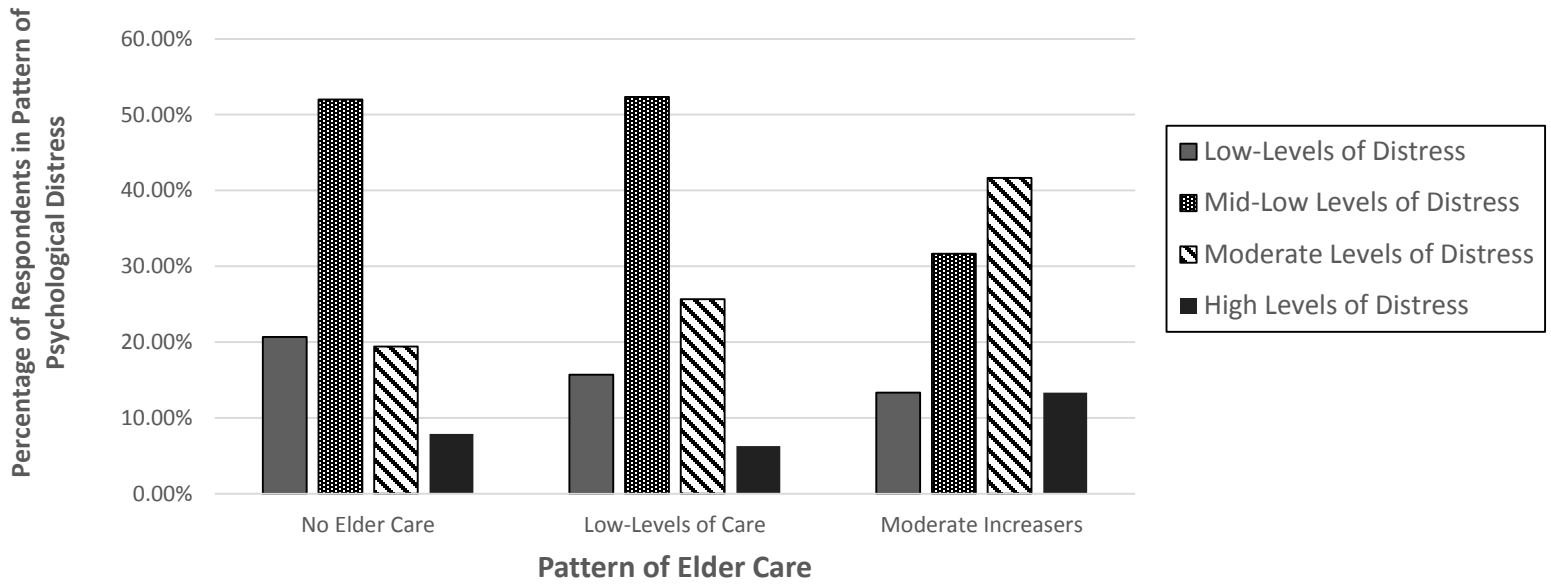

Figure 12: Percentage of Respondents in Patterns of Psychological Distress Conditional on Membership in Pattern of Elder Care for Men Only

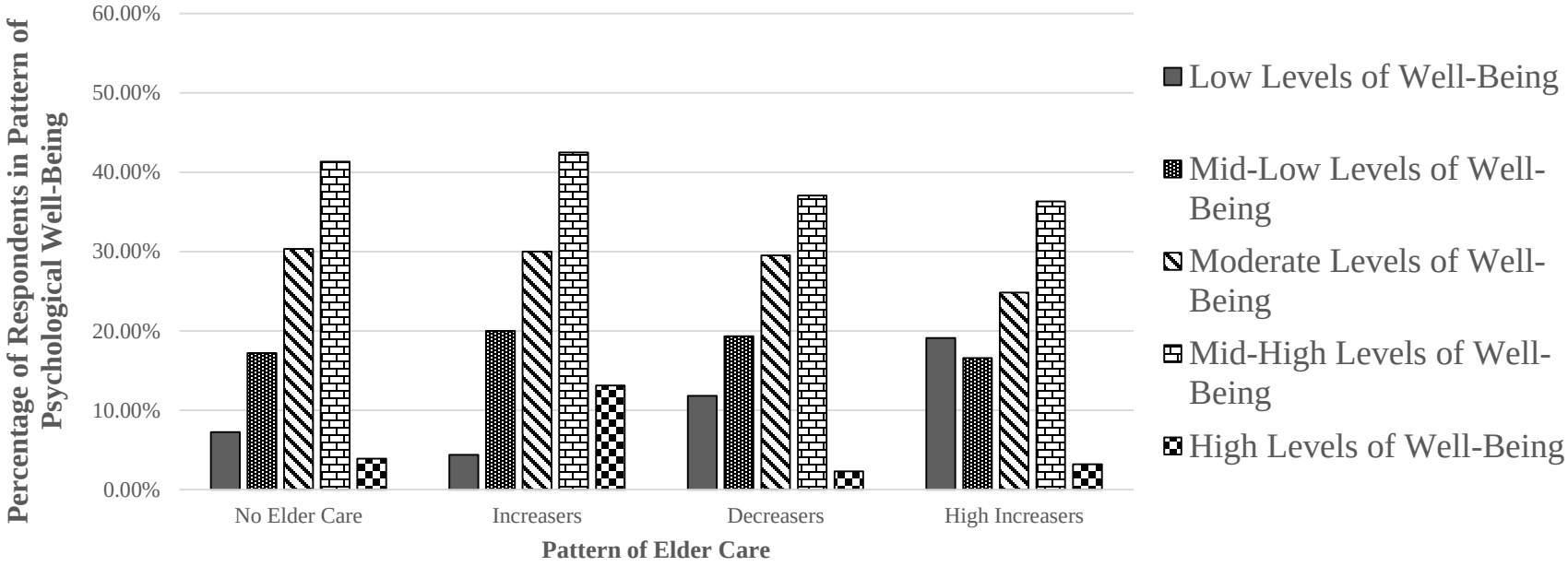

Figure 13: Percentage of Respondents in Patterns of Psychological Well-Being Conditional on Membership in Pattern of Elder Care for Full Sample

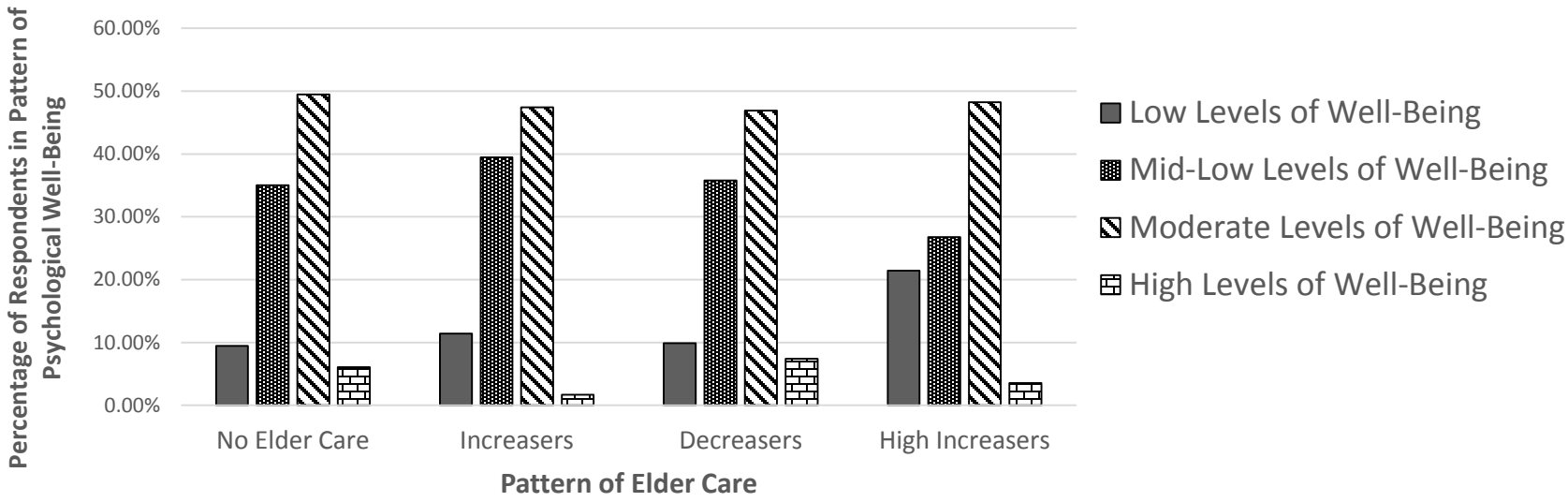

Figure 14: Percentage of Respondents in Patterns of Psychological Well-Being Conditional on Membership in Pattern of Elder Care for Women Only

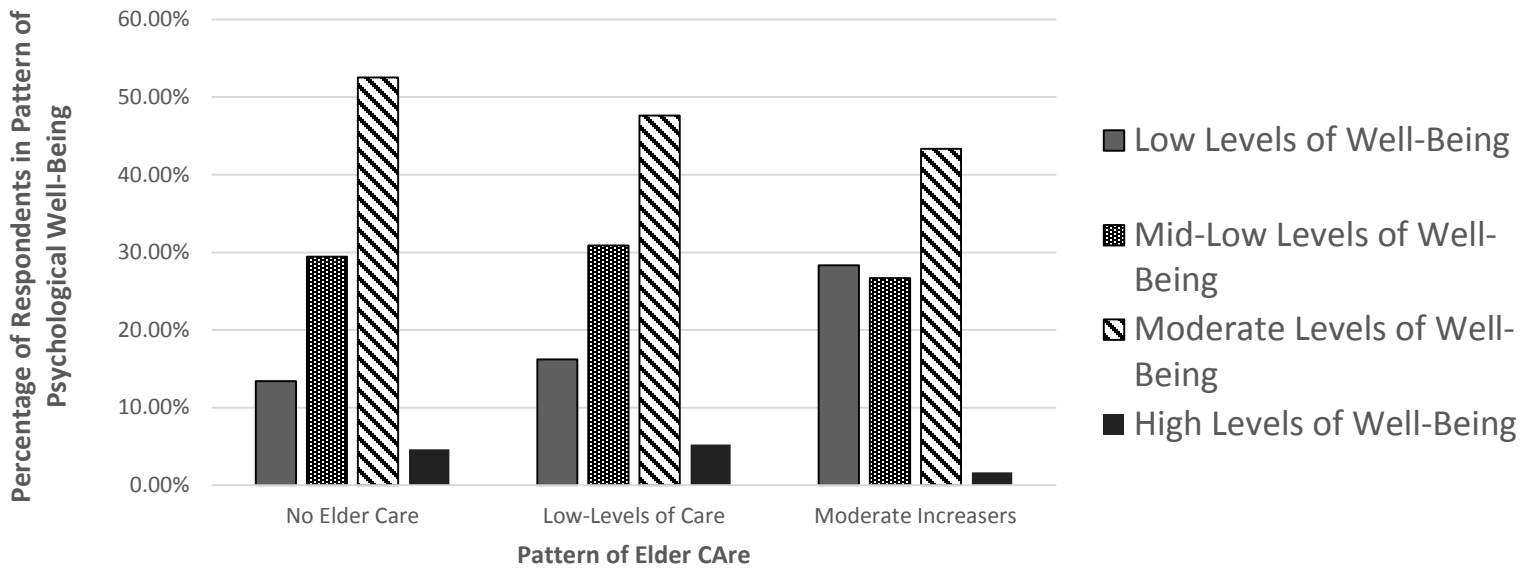

Figure 15: Percentage of Respondents in Patterns of Psychological Well-Being Conditional on Membership in Pattern of Elder Care for Men Only

CHAPTER 6

RESULTS

The purpose of this chapter is to examine how transitioning into filial care is related to within-person changes in psychological functioning over time. In these analyses, I allow for the possibility that psychological functioning is a multidimensional concept by examining the impact of transitioning into caregiving on levels of both psychological distress and well-being. This chapter is divided into three main parts. First, I begin by providing a host of descriptive statistics (Tables 18-23). These include the number of respondents who ever participated in filial care (Table 18), as well as the number of respondents in the sample who transitioned into caregiving, broken down by gender (Table 19). I also include a descriptive table (Table 20) that shows the number of respondents who experienced major life events during the survey period (i.e., married, retired, etc.). The final descriptive table analyzes the means and standard deviations of the continuous variables at each wave (Table 21). Second, I present results of fixed effects regression models that examine the effect of transitioning into care on a caregiver's levels of psychological functioning over time (Tables 22 and 23). In this section, I test competing hypotheses from role theory, the stress process model, and the wear-and-tear perspective of caregiving. I also consider how the relationship between transitioning into filial care and caregiver psychological functioning may be influenced by the gender of the caregiver (Table 23). Third, I conclude by providing a summary of the results.

Descriptive Statistics

In this section, I provide four forms of descriptive statistics: (1) the number of person-waves in which filial care was ever reported and the number of respondents who ever experienced filial care during the study (Table 18); (2) the number of respondents who transitioned into filial care during the course of the study period (Table 19); (3) the number of respondents who experienced major life events during the study period (Table 20); and (4) means and standard deviations for continuous variables measured at each wave (Table 21).

Experience in Filial Care

Fixed effects regression models analyze entities at various time points. For this dissertation, the entity is the individual and the time point is the wave. I create a strongly balanced dataset in which most entities have responses at each time point. Therefore, there are multiple data points to analyze, known as "person-waves" in this case (i.e., one person has a value for each variable of interest at each wave). Table 18 shows the number of person-waves and respondents in which filial care was ever reported. Overall, there were 53,700 person-waves in which no filial care was reported. This translates to 15,292 respondents who identified at any point as not providing care to a parent. While not identifying as a caregiver is the most common response option, there are many respondents who identified as participating in filial care in at least one wave. For example, there are 122 respondents who report that they ever identified as a main caregiver to a parent in their own residence. Most experience with filial care took place outside respondents' homes. For example, 373 respondents reported that they ever shared care for a parent outside of their home. With the exception of sharing care for a parent in one's home, more women reported providing filial at any point than did men.

Transitions into Filial Care

While the statistics presented in Table 18 are useful in that they show the number of respondents who ever reported participation in filial care, they do not capture the fact that people can transition in and out of these roles. The total number of respondents analyzed for Table 18 is 15,387. Yet, the total number of respondents who ever identify with any of the caregiving statuses (including not providing care) is 16,050. This indicates that there are a number of respondents who reported not providing filial care at one wave (i.e., they ever participated in not providing care) and then providing care in a subsequent wave (i.e., they ever participated in providing care). Put differently, there are a number of respondents who transition into filial care during the study period. Table 19 displays the number of respondents who transitioned into filial care by respondent's gender.[7]

Overall, 48 respondents transitioned from not caring for an aging parent to being the main caregiver for their parent in their residence, while 46 respondents took on sharing care for their parent in their residence. More respondents made transitions into caring for their aging parents outside of their residence than inside of their residence. For example, 226 respondents transitioned to sharing care for a parent outside of their residence, as compared to 46 respondents who transitioned to sharing care for a parent who lived with them. A greater number of respondents transitioned into sharing care for a parent than into being a main caregiver of a parent. For example, considering only people who transitioned to providing care outside of their

[7] The purpose of this dissertation is to examine how transitions into filial care are related to changes in psychological functioning over time. It is also possible to examine people who transition *out* of filial care. For example, there were 364 respondents who provided filial care in one wave and did not identify as a filial caregiver in a subsequent wave. There are also a small number of respondents (n=109) who transition between various types of filial caregiving (i.e., moving from being a caregiver who shares care of a parent out of their residence to being a main caregiver of a parent within their residence). These transitions are outside of the scope of this dissertation.

residence, 226 shared the responsibilities of caregiving, while 114 transitioned to being a main caregiver of a parent outside of their residence. In terms of gender, women made more transitions than did men. For example, 28 women transitioned to being a main caregiver to a parent in their residence, compared to 20 men. Similarly, 87 women became a main caregiver to a parent outside of their residence, compared to 27 men. Likewise, 147 women transitioned into sharing care for a parent outside of their residence, while 79 men did the same. More men, however, transitioned into sharing care of a parent within their residence than did women (28 men compared to 18 women).

Major Life Events

Table 20 displays descriptive statistics for the covariates that are measured categorically.[8] These transitions are representative of major life events. The total number of person-waves for this analysis is 54,855. Many respondents experienced major life events during the course of the survey period. For example, 10,512 respondents reported having a high school degree or more during the study period, while 1,144 respondents (3.42% of the sample) earned a high school degree (or equivalent) during this time. Many respondents reported moving residences at some point between Waves 5-10 of HILDA. There are 4,315 respondents who reported that they did

[8] The number of transitions in Table 20 represent respondents who report not having experienced the event in one wave to experiencing the event in a subsequent wave (i.e., they are "0" in one wave and then "1" in a later wave). This explains why the numbers in the first column of Table 20 are larger than the numbers in the second column. The numbers in the first column represent respondents who ever reported experiencing that event. For example, there are 10,900 respondents who ever reported experiencing a negative life event. There are only 6,111 respondents, however, who reported *not* experiencing a negative life event in one wave and then experiencing any other negative life event in a following wave. The difference here could be due to two factors: (1) respondents reporting that they experienced a negative event at each wave (i.e., they were coded as "1" at each wave) would be included in column 1 but not column 2 as no transition occurred or (2) respondents reported experiencing a negative event at the first time point but not experiencing the event in following wave. The latter option is a different type of transition (i.e., moving from experiencing the event to *not* experiencing the event) than the type of transition I am interested in modeling (i.e., moving from *not* experiencing the event to experiencing the event).

not move in one wave but moved the next wave. While almost 10,000 respondents ever reported being married or partnered as their relationship status, 788 respondents became married during the survey period. Many respondents reported not experiencing pregnancy or birth in one wave but becoming pregnant (n=1,027) or giving birth (n=1,073) or having a partner who did so in a subsequent wave.[9]

There were also several life transitions that took place in terms of respondents' labor market status. Almost 1,000 respondents reported ever having retired during the study period, though 585 respondents transitioned into retirement during the study period. Moreover, 1,492 respondents reported not receiving a promotion in one wave and then receiving a promotion in a subsequent wave. Many respondents (n=5,021) reported having ever changed jobs, while 2,720 respondents said that they did not change jobs in one wave but changed jobs in a subsequent wave. A small number of respondents (n=704) experienced their finances worsening. A large number of respondents (n=6,111) did not experience a negative life event (i.e., property crime victimization, death of a loved one, etc.) in one wave but experienced such an event in the next wave.

Descriptive Statistics of Continuous Variables

Table 21 displays the means and standard deviations of the continuous variables that will be used in the fixed effects analyses at each wave. The psychological distress scale ranges from

[9] Fixed effects regression models capture change within an entity over time. As such, in the multivariate models, the coefficient associated with variables like giving birth or having a child will capture the amount of change in psychological distress or well-being that occurs as a result of not giving birth in one wave and then giving birth the next wave. If a person gives birth in one wave and then again in the next wave, she would be coded as "1" in each wave. The coefficient value for giving birth would therefore not apply to this person, as she has not experienced a change in giving birth over time. While this person is likely to have experienced quite a bit of change in her life as a result of having another birth experience, she would fall outside of the ability of fixed effects models to capture this change. This logic also applies to any of the other variables that measure life transition (i.e., a respondent who has moved every wave) (Allison 2009).

1-6, wherein higher values indicate higher levels of distress. Across each wave, the average psychological distress score ranges from 1.91-1.95, indicating low levels of distress for the typical respondent. Conversely, the average psychological well-being score (measured wherein higher values indicate higher levels of well-being) ranges from 4.18-4.21 across Waves 5-10 of HILDA. The average amount of time spent in elder care in a typical week is about an hour and a half during each wave. The typical respondent perceives high levels of social support, ranging from 5.41-5.48 across all the waves of the study period. The average respondent has one child. When examining the average number of resident children under age four or between the ages of five and fourteen, Table 21 shows that the averages of these are low (.15 and .33 at Wave 5 respectively), though there are roughly 3,000 respondents who ever have at least one resident child under four and almost 5,000 respondents who ever have at least one resident child between the ages of five and fourteen.

Summary of Descriptive Statistics

The purpose of this section was to provide a description of the variables that will be used in the multivariate analyses. Overall, there are a number of respondents who experience life transitions. Of importance to the following analyses, over 400 respondents transition into some form of filial care, and women make these transitions more often than do men. Many respondents experience other life transitions, such as getting married or changing jobs. Changes in these variables will be used to assess corresponding changes in psychological distress and well-being. For the average respondent, psychological distress scores are fairly low and psychological well-being scores are high. I turn now to describing the results of fixed effects regression models that examine the effect of transitioning into filial care on caregiver's psychological functioning over time.

Multivariate Analyses

Tables 22 and 23 display the results of fixed effects regression models that examine the effect over time of transitioning into filial care on a caregiver's levels of psychological distress and well-being, respectively. I initially ran each model twice, once using fixed effects regression and once using random effects regression. I then compared the results of each two models using a Hausman test, which tests whether the unique errors (u_i in Equation 2) are correlated with the regressors. The null hypothesis of this test is that the unique errors are not correlated with the regressors, in which case a random effects model would be appropriate. All Hausman tests rejected the null hypothesis and showed that fixed effects regression is the appropriate modeling strategy. For the distress models, the adjusted R-squared value is .61, which indicates that roughly 60 percent of the variation is explained by the predictor variables. The rho values in each model represent the share of the estimated variance of the overall error that is accounted for by the individual effect.

Overview of Relevant Control Variables

I begin by describing the effects of relevant control variables on levels of psychological distress and psychological well-being over time. As Table 22 shows, a one-unit increase in perceptions of social support is associated with a within-individual decrease of .21 on the scale of psychological distress over time (Table 22, Model 1, b=-.21, p<.001). Similarly, an increase in perception of social support over time is associated with a within-individual increase in psychological well-being (Table 23, Model 1, b=.27, p<.001). Earning a high school degree is associated with a slight increase in a respondent's psychological distress scores over time (Table 22, Model 1, b=.01, p<0.5). Becoming married or partnered is associated with a decrease in psychological distress (Table 22, Model 1, b=-.06, p<.001) and an increase in psychological

well-being over time (Table 23, Model 1, b=.06, p<.01). Alternatively, becoming separated is associated with a within-person increase in psychological distress over time (Table 22, Model 1, b=.18, p<.001) and a within-person decrease in psychological well-being (Table 23, Model 1, b=-.16, p<.001). Respondents who become pregnant experience a decline in distress scores over time (Table 22, Model 1, b=-.08, p<.001) and an increase in psychological well-being scores over time (Table 23, Model 1, b=.05, p<.05). A one-unit increase in the respondent's number of resident children aged four and under is associated with a decline in psychological distress (Table 22, Model 1, b=-.06, p<.001), and an increase in the number of resident children aged five to fourteen is also associated with a drop in psychological distress scores over time (Table 22, Model 1, b=-.03, p<.01).

Additionally, labor market variables are significantly related to changes in psychological distress and psychological well-being over time. People who changed jobs from one wave to the next experienced an increase in well-being over time (Table 23, Model 1, b=.04, p<.001). Respondents who did not experience a promotion in one wave but experienced a promotion in a subsequent wave showed a drop in distress scores over time (Table 22, Model 1, b=-.03, p<.05). These respondents also showed an increase in well-being scores over time (Table 23, Model 1, b=.03, p<.001). Having one's finances worsen over time was associated with a within-person increase in psychological distress (Table 22, Model 1, b=.25, p<.001) and a within person decrease in psychological well-being (Table 23, Model 1, b=-.23, p<.001). Finally, respondents who did not experience a negative life event in one wave and experienced such an event in a subsequent wave showed an increase in distress scores (Table 22, Model 1, b=.08, p<.001) and a decrease in well-being scores over time (Table 23, Model 1, b=-.08, p<.001). I turn now to testing the hypotheses stated in the theoretical framework chapter that propose the impact of

transitioning into filial care on a caregiver's levels of psychological distress and well-being over time.

Effects of Transitioning into Filial Care on Psychological Functioning

Testing Hypotheses 1-3

Hypotheses 1 and 2 suggested that all of the transitions into caregiving would significantly predict an increase in within-person levels of distress and a decrease in within-person levels of well-being over time. These hypotheses were rooted in the notion that psychological functioning is a spectrum, wherein higher values of distress indicate lower levels of well-being and vice versa. These hypotheses were derived from the scarcity approach, which suggests that adding a new role is stressful due to the potential for role conflict. Additionally, Hypotheses 1-2 drew from the wear-and-tear perspective that suggests that the acts of caregiving are inherently stressful and therefore detrimental to one's psychological functioning. Hypothesis 3, in turn, conceptualized psychological functioning as multidimensional, in that people can experience high levels of distress and well-being simultaneously. Therefore, this hypothesis suggested that any transition would be associated with higher levels of well-being over time, due to the possibility that people may experience a sense of fulfilling filial obligations. None of these hypotheses is supported, as the effects of the transitions on well-being and distress are not all significant.[10]

Testing Hypotheses 4-15

Hypotheses 4-6 suggested that the transition into main filial caregiving roles in one's residence would be associated with changes in one's psychological well-being over time.

[10] Subsequent models (not presented) that examined filial care as a two-category dummy variable ("0"=does not participate in filial care, "1"=participates in any form of filial care) showed similar results. The overall transition into filial care was not associated with a change in a caregiver's levels of psychological distress or well-being.

Specifically, Hypotheses 4 and 5 were rooted in the wear-and-tear perspective which suggests that greater amounts of caregiving lead to more distress (and thereby less well-being). Furthermore, insights from the stress process model suggest that people who experience this transition type may do so as a result of not having stress-buffers (i.e., other people to help alleviate the burden of caregiving). As such, Hypotheses 4 and 5 suggested that transitioning into a main filial caregiving role co-residentially would be associated with increased levels of distress and decreased levels of well-being, respectively, over time. Model 1 in Table 22 shows that Hypothesis 4 was not supported (b=-.08, p=.19) and Model 1 in Table 23 shows that Hypothesis 5 was not supported (b=-.11, p=.14). Hypothesis 6, in turn, relied upon the notion that psychological functioning can be multidimensional. Drawing insights from Thoits's (2009) perspective on "mattering," Hypothesis 6 suggested that people who transition into a main filial caregiving role in their residence might have increased levels of well-being over time, as they feel like they matter the most to the care recipient. As the effect of transitioning into a main filial caregiving role in one's residence did not significantly predict changes in caregiver well-being over time, this hypothesis is not supported (Table 23, Model 1, b=-.11, p=.14).

Hypotheses 7-9 stated that the transition into sharing filial care in one's residence would significantly predict changes in a caregiver's levels of psychological distress and well-being. In particular, Hypotheses 7 and 8 suggested that people who transition into sharing care of an aging parent in their residence would have increased levels of distress and lower levels of well-being over time (respectively), due to three potential reasons. First, sharing care may be particularly stressful in that it involves negotiating a variety of people's schedules and duties. These acts of negotiation may cause increased levels of distress and lower levels of well-being over time. Second, respondents may transition into sharing filial care due to the health needs of their aging

parent. That is, respondents may transition into sharing care (rather than transitioning into main caregiving) as the health needs of their parents necessitate help from others (i.e., a home health aide or hospice worker). Third, respondents who transition into sharing care co-residentially may do so as a result of having to juggle multiple roles. That is, they may want to be the main caregiver of their aging parent, but due to the fact that they have to perform other roles (i.e., employee, parent), they may experience too much role conflict and are unable to be sole caregiver. Thus, due to role conflict, transitioning into sharing care co-residentially may be particularly detrimental to caregivers' psychological functioning.

Hypothesis 7 stated that respondents who transition into sharing care of their aging parent co-residentially would experience increased psychological distress over time. This hypothesis is not supported (Table 22, Model 1, b=.03, p=.66). While Hypothesis 7 suggested that respondents who transition into sharing care of an aging parent in their own homes would have increased levels of psychological distress, Hypothesis 8 suggested that these caregivers would show reduced levels of psychological well-being. Model 1 of Table 23 shows that respondents who transition into sharing care of their parents experience a decrease in their psychological well-being over time (Model 1, b=-.16, p<.05). This finding supports Hypothesis 8 and refutes Hypothesis 9, which stated that people who transitioned into filial care in their residence would have *increased* levels of psychological well-being over time. Hypothesis 9 allowed for the idea that people can experience high levels of distress and well-being simultaneously.

Respondents who transition into sharing care of their aging parents within their residence show a decrease in their psychological well-being but not an increase in terms of their psychological distress. It is notable that the significant effect of transitioning into sharing care for a parent co-residentially on a caregiver's psychological well-being over time remains

significant (though at the $p<.10$ level) when hours spent in elder care is added into Model 2 in Table 23. An increase in time spent in elder care is associated with a slight reduction in the level of a respondent's psychological well-being over time (Table 23, Model 2, b=-.03, $p<.01$), though the effect of transitioning into sharing care co-residentially remains significant (Table 23, Model 2, b=-.15, $p<.10$). This finding shows that transitioning into this caregiving role is associated with a reduction in caregiver's psychological well-being, net of the effect of the time spent in elder care. Put differently, there is something about transitioning into sharing care of a parent co-residentially that reduces well-being above and beyond the amount of time spent in that role.

Hypotheses 10-12 suggested that people who transitioned into main filial caregiving roles outside of their residence would show significant changes in terms of their psychological distress and well-being. In particular, Hypotheses 10 and 11 stated that respondents who transitioned into main filial caregiving roles outside of their homes would experience increased levels of distress and decreased levels of well-being (respectively) over time. These hypotheses were derived from in the wear-and-tear perspective, as main caregivers are likely to experience the most "wear" in terms of the responsibilities of caregiving. Additionally, Hypotheses 10 and 11 state that people who transitioned into care for parents who did not live with them may experience detrimental changes in terms of psychological functioning due to the fact that they have less control over their parents' health and well-being than if their parents lived with them. Hypothesis 12, in turn, allowed for psychological functioning to be multi-dimensional and suggested that people who transition into main filial caregiving outside of their residence may have increased levels of well-being over time. Model 1 in Table 22 shows that Hypothesis 10 was not supported (b=.01, $p=.99$), and Model 1 in Table 23 shows that Hypotheses 11 and 12 were not supported (b=-.02, $p=.74$).

Hypotheses 13-15 stated that people who transitioned into a caregiving role in which they shared care for a parent outside of their residence would have significant changes in terms of their psychological functioning over time. Specifically, Hypothesis 13 suggested that this type of transition would show increased levels of psychological distress over time, and Hypothesis 14 suggested that these caregivers would have decreased levels of psychological well-being over time. As Table 18 shows, transitioning to sharing care for a parent outside of one's residence is the most common type of transition, indicating that it may be the "gateway" to providing the other forms of care (i.e., being the main caregiver or providing care residentially). As such, the transition to sharing filial care outside of one's residence may be particularly detrimental to caregivers' psychological functioning, as it could be the first experience with care. Model 1 of Table 22 shows that Hypothesis 13 was not supported (b=-.02, *p*=.43), and Model 1 of Table 23 shows that Hypothesis 14 was not supported. Additionally, Hypothesis 15, which suggested that people who transition into sharing filial care outside of their residence may have *increased* levels of psychological well-being over time, due to the fact that they have acquired a new role that may provide them with the comfort that they are helping others, was also not supported (Table 23, Model 1, b=.02, *p*=.58)

Respondent's Gender as a Moderator of the Relationship between Transitioning into Filial Care and Psychological Well-Being

Hypotheses 16 and 17 suggested that deleterious consequences associated with transitioning into filial care (i.e., increased within-person distress or decreased within-person well-being over time) may be different for men and women. As the only transition type that significantly affected psychological functioning was for caregivers who share care of a parent who lives with them, this obviated the need to test interaction effects for the other three transition

types, as well as any interaction type in a model predicting changes in psychological distress (as the significant effect for caregivers who share care co-residentially was for psychological well-being). Hypotheses 16-17 suggested the impact of caregiver's gender on the relationship between transitioning into care and caregiver's psychological functioning.

To test these hypotheses, I entered a term for the interaction between transitioning to sharing care co-residentially and respondent's gender (Table 23, Model 3). Specifically, Hypothesis 16 relies upon the stress process model, which suggests that women have fewer resources than do men, and as such, transitioning into filial care should have worse consequences for a women's psychological functioning than for men. Alternatively, Hypothesis 17 is based in a socialization approach, which suggests that men are not socialized to give care, and as a result, men who transition into filial care will have lower levels of psychological well-being than women who do so. I entered an interaction term between the transition into sharing care co-residentially and gender to test Hypotheses 16 and 17 in Model 3 of Table 23. This interaction term was not significant, indicating that the deleterious consequence of transitioning into sharing care co-residentially is not greater for men than for women (or vice versa) (b=-.13, p=.46).

Summary of Tested Hypotheses and Post-Hoc Analyses

In summary, the only hypothesis that was supported was Hypothesis 8, which stated that caregivers who transitioned into sharing care of an aging parent in their residence would have *decreased* levels of psychological well-being over time. Caregiver's gender did not affect the relationship between transitioning into sharing care co-residentially and caregiver's psychological well-being. In the theoretical framework section, I suggested three potential reasons why the transition to sharing care may be detrimental to caregiver's psychological functioning: (1) the stress of negotiating the schedules and responsibilities of multiple caregivers;

(2) the declining health of the care recipient may necessitate the need for multiple caregivers, and as such, it is the declining health of the care recipient that causes the decreased well-being rather than the transition into the role itself; and (3) people may have to share care due to the fact that they are juggling multiple roles (i.e., parent, employee), and role conflict causes decreased well-being over time. HILDA does not have variables that would allow me to test the first two suggestions, but I am able to test the last one by considering two types of other roles these caregivers may enact: being a parent or being an employee.

If it is the case that people who transition into sharing care of a parent in their residence do so because they are juggling roles, then respondents who experience this type of caregiving should have a higher mean number of children, as well as a higher mean number of jobs in each wave than the other caregiving types (including non-caregivers). Table 24 displays the mean number of jobs for each caregiving type at each wave. Number of jobs is a continuous measure of the total number of jobs a respondent has held in that wave. I performed analyses of variance to see if the mean number of jobs or children differed across caregiving type, though I only display the results of these ANOVAs regarding significant differences between respondents who shared care residentially and all other caregiving types.

Panel A of Table 24 shows the mean number of jobs held by respondents based on their caregiving status at each wave. For example, the average number of jobs held by a non-filial caregiver in Wave 5 was .93. Overall, respondents who shared care of a parent in their home had a slightly higher number of jobs on average than respondents in other caregiving statuses. Yet, these means only differed significantly twice. First, the average number of jobs held by respondents who shared care for their parents co-residentially in Wave 7 was 1.29, while the average number of jobs for respondents who were the main caregivers for a parent in their home

was .72, and these two means significantly differed from one another ($p<.05$). Similarly, the average number of jobs held by respondents who shared care for their parents co-residentially in Wave 8 was 1.18, while the average number of jobs for respondents who were the main caregivers for a parent who did not live with them was .81, and these two means significantly differed from one another ($p<.05$). I added the number of jobs the respondent holds to the fixed effects regression models predicting changes in psychological well-being (Table 23, Model 4) to test whether or not the relationship between transitioning to filial care and caregiver psychological well-being was a function of the number of jobs that the respondent holds. As Model 4 in Table 23 shows, the significant effect of transitioning into sharing care of an aging parent in one's household on well-being remains. This indicates that this deleterious relationship exists net of the number of jobs a respondent has, suggesting that the decreased well-being these caregivers have is not due to role conflict between their employment and caregiving responsibilities.[11]

Panel B of Table 24 shows the mean number of children respondents had based on their caregiving status at each wave. For example, the typical respondent who shared care of an aging parent outside of his/her residence had one or two children in Wave 8. If it were the case that people who transition into sharing care of an aging parent in their residence had decreased levels of psychological well-being over time due to the fact that they are juggling a parental role with a filial caregiving role, then I would expect that those who share care for an aging parent in their residence would have a higher average number of children than all other caregiving types. Panel

[11] I did not use more complicated measures of work-family conflict available in HILDA (i.e., agreement with the statement "Because of my family responsibilities, the time I spend working is less enjoyable and more pressured") because these questions were asked to a subset of respondents who were working parents. Doing so would reduce the number of person-waves to 12,937, which is approximately 40,000 fewer person-waves than I include in the models presented here.

B of Table 24 shows, however, that the average number of children for respondents who share care for an aging parent in their residence is *lower* than the other caregiving types, and there are many significant differences between these means. Therefore, it is unlikely that the decreased well-being of the respondents who share care of an aging parent in their residence is due to juggling filial caregiving with childcare. As I stated previously, it is also unlikely that their decreased well-being is due to role conflict between employment and caregiving responsibilities. Thus, it is more likely that the changes in psychological well-being are a result of the stress of negotiating care between multiple people or the declining health of the care recipient, though I am unable to test these two possibilities with the dataset used for this dissertation.

Conclusion

The purpose of this chapter was to examine how transitioning into particular types of filial care is associated with changes in a caregiver's levels of psychological functioning over time. To do so, I began by providing a series of descriptive statistics that showed the number of respondents who transitioned into filial care. In general, these statistics showed that most people did not transition into filial care, though among those who did transition, sharing care with others and providing care outside of the respondent's home was more common than being a main caregiver and providing care within a respondent's home, respectively. Multivariate models showed that transitioning into sharing care of an aging parent within the respondent's home was associated with decreased levels of well-being over time. Importantly, this finding remained even when controlling for time spent in elder care, indicating that the transition to sharing care co-residentially, itself, can cause deleterious outcomes for caregivers net of the strain of the time spent in those activities. Additionally, the harmful consequence of transitioning into sharing care co-residentially on psychological functioning did not differ between men and women. In the

following chapter, I discuss the theoretical and substantive contributions of this dissertation, combining insights from the results using fixed effects regression and group-based trajectory modeling. I also discuss limitations of both of these studies as well as directions for future research in the study of filial care and caregiver psychological functioning.

Table 18: Number of Respondents Who Ever Participated in Filial Care

	Number of Person Years	Percent of Sample	Number of Respondents	Women	Men
Did not Identify as a Caregiver	53,700	97.89%	15,292	7,997	7,295
Main Caregiver in Residence	233	0.42%	122	75	47
Shares Care in Residence	122	0.22%	77	34	43
Main Carer not in Residence	274	0.50%	186	140	46
Shares Care not in Residence	526	0.96%	373	234	139

N=15,387
Total person-years=54,855

Table 19: Number of Transitions into Filial Care

	All Respondents	Women	Men
Main Carer in Residence	48	28	20
Shares Care in Residence	46	18	28
Main Carer not in residence	114	87	27
Shares Care not in residence	226	147	79

Note: There were 38,161 person-waves wherein people never transitioned into providing filial care between Waves 5-10 of HILDA.

Table 20: Experience of Major Life Events during Waves 5-10 of HILDA

Life Events	Respondents Who Experienced Event at Some Wave	Number of Transitions[a]	Percent of Sample that Transitioned
Has a high school degree or more	10,512	1,144	3.42%
Moved	6,230	4,315	12.89%
Became married or partnered	9,886	788	2.35%
Became Pregnant (or partner did)	1,920	1,027	3.07%
Gave Birth (or partner did)	1,558	1,073	3.21%
Retired	945	585	1.75%
Received a promotion	2,614	1,492	4.46%
Changed Jobs	5,021	2,720	8.13%
Finances Worsened	1,305	704	2.10%
Experienced a Negative Life Event	10,900	6,111	18.26%

N=15,387
Total person-years=54,855

Note:
a: These statistics represent the number of respondents who transitioned from not experiencing the event (i.e., were coded as "zero" in a given wave, to experiencing the event (i.e., were coded as "1" in a subsequent wave).

Table 21: Descriptive Statistics of Continuous Variables for Fixed Effects Models							
		Wave 5	Wave 6	Wave 7	Wave 8	Wave 9	Wave 10
	Range	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)
Psychological Functioning							
Psychological Distress	1-6	1.95 (0.88)	1.94 (0.90)	1.93 (0.88)	1.92 (0.88)	1.91 (0.88)	1.94 (0.87)
Psychological Well-being	1-6	4.19 (1.03)	4.21 (1.03)	4.21 (1.03)	4.21 (1.03)	4.21 (1.02)	4.18 (1.04)
Hours Spent in Elder Care	0-168	1.30 (8.81)	1.25 (7.54)	1.50 (9.68)	1.39 (8.45)	1.40 (8.76)	1.65 (9.65)
Perceptions of Social Support	1-7	5.41 (1.02)	5.43 (0.97)	5.45 (1.01)	5.44 (0.99)	5.48 (1.00)	5.43 (0.99)
Total Number of Children	0-12	0.71 (1.10)	0.70 (1.10)	0.69 (1.08)	0.68 (1.07)	0.70 (1.08)	0.68 (1.07)
Number of Resident Children Aged 4 and Under	0-4	0.15 (.45)	0.16 (.47)	0.17 (.48)	0.16 (.46)	0.17 (.48)	0.17 (.17)
Number of Resident Children Age 5 and Above	0-7	0.33 (.75)	0.31 (.72)	0.28 (.69)	0.28 (.68)	0.27 (.68)	0.27 (.68)

Table 22: Results of Fixed Effect Regression Analyzing Impact of Transitions into Filial Care on Psychological Distress Over Time

	Model 1	Model 2
Caregiving Status[a]		
Cares in Residence		
Main Carer	-0.08	-0.09
Shares Care	0.03	0.03
Non-Resident Carer		
Main Carer	0.00	-0.01
Shares Care	-0.02	-0.03
Hours in Elder Care	---	0.01
Social Support	-0.21 ***	-0.21 ***
High School Degree[b]	0.01 *	0.01 *
Moved	-0.01	-0.01
Married or Partnered	-0.06 ***	-0.06 ***
Separated	0.18 ***	0.18 ***
Children Variables		
Became Pregnant	-0.08 ***	-0.08 ***
Gave Birth	0.05 **	0.06 **
Number of Children	0.01	0.01
Count of Children Aged 4 and Under	-0.06 ***	-0.06 ***
Count of Children Aged 5-14	-0.03 **	-0.03 **
Labor Market Variables		
Changed Jobs	-0.01	-0.01
Promoted	-0.03 *	-0.03 *
Retired	-0.01	-0.01
Finances Worsened	0.25 ***	0.25 ***
Negative Life Event	0.08 ***	0.08 ***
Year[c]		
2006	-0.01	-0.01
2007	0.00	0.00
2008	-0.01	-0.01
2009	-0.03 ***	-0.03 ***
2010	-0.02 *	-0.02 *
Constant	4.42 ***	3.00 ***
Rho	0.62	0.62
Adjusted R^2	0.61	0.61
Person-waves	54,855	54,855

Notes: +p <.10, *p <.05, **p <.01, ***p <.001

a: Reference category: does not participate in filial care.

b: Reference category: does not have a high school degree or equivalent.

c: Reference category: Year 2005 (Wave 5).

Table 23: Results of Fixed Effect Regression Analyzing Impact of Transitions into Filial Care on Psychological Well-Being Over Time

	Model 1	Model 2	Model 3	Model 4
Caregiving Status[a]				
Cares in Residence				
Main Carer	-0.11	-0.07	-0.07	-0.07
Shares Care	-0.16 *	-0.15 +	-0.09	-0.15 +
Non-Resident Carer				
Main Carer	-0.02	0.01	0.01	0.01
Shares Care	0.02	0.04	0.04	0.04
Logged Hours in Elder Care	---	-0.03 **	-0.03 **	-0.03 **
Social Support	0.27 ***	0.28 ***	0.28 ***	0.28 ***
High School Degree[b]	-0.01	-0.01	-0.01	-0.01
Moved	0.01	0.01	0.01	0.01
Married or Partnered	0.06 **	0.06 **	0.06 **	0.06 **
Separated	-0.16 ***	-0.16 ***	-0.16 ***	-0.16 ***
Children Variables				
Became Pregnant	0.05 *	0.05 *	0.05 *	0.05
Gave Birth	0.01	0.01	0.01	0.01
Number of Children	-0.01	-0.01	-0.01	-0.01
Count of Children Aged 4 and Under	-0.02	-0.02	-0.02	-0.02
Count of Children Aged 5-14	-0.02	-0.02	-0.02	-0.02
Labor Market Variables				
Changed Jobs	0.04 ***	0.04 ***	0.04 ***	0.03 ***
Promoted	0.03 *	0.03 *	0.03 *	0.03 *
Retired	-0.01	-0.01	-0.01	-0.01
Finances Worsened	-0.23 ***	-0.23 ***	-0.23 ***	-0.23 ***
Negative Life Event	-0.08 ***	-0.08 ***	-0.08 ***	-0.08 ***
Year[c]				
2006	0.01	0.01	0.01	0.01
2007	-0.02 *	-0.02 *	-0.02 *	-0.02 *
2008	-0.03 *	-0.03 *	-0.03 *	-0.03 *
2009	-0.02 *	-0.02 *	-0.02 *	-0.02 *
2010	-0.05 ***	-0.05 ***	-0.05 ***	-0.05 ***
Interaction Terms				
Shares Care in Residence X Female	---	---	-0.13	---
Number of Jobs	---	---	---	0.01
Constant	2.79 ***	2.79 ***	2.79 ***	2.79 ***
Rho	0.59	0.59	0.59	0.59
Adjusted R^2	0.59	0.59	0.59	0.59
Person-years	54,855	54,855	54,855	54,855

Notes: $+p<.10$, $*p<.05$, $**p<.01$, $***p<.001$; a: Reference category: does not participate in filial care; b: Reference category: does not have a high school degree or equivalent; c: Reference category: Year 2005 (Wave 5).

Table 24: Mean Number of Jobs and Children for Each Type of Caregiving

	Wave 5	Wave 6	Wave 7	Wave 8	Wave 9	Wave 10
	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)	Mean (Standard Deviation)
Panel A: Number of Jobs						
Non-Filial Caregiver	.93 (.80)	.92 (.79)	.92 (.78)	.93 (.78)	.90 (.74)	.89 (.74)
Cares in Residence						
Main Carer	.98 (1.05)	.81 (.85)	.72 (.82)	.86 (.94)	.83 (.86)	.93 (.91)
Shares Care	1.14 (.65)	1.20 (.56)	1.29[2] (.73)	1.18[3] (.54)	.93 (.62)	1.30 (.95)
Non-Resident Carer						
Main Carer	.91 (.83)	.86 (.64)	.80 (.55)	.81 (.59)	.82 (.68)	.76 (.57)
Shares Care	.95 (.68)	0.98 (.74)	.91 (.65)	.99 (.78)	.82 (.83)	.85 (.97)
Panel B: Number of Children						
Non-Filial Caregiver	.70 (1.10)	.69 (1.10)	.68 (1.07)	.67 (1.06)	.68 (1.07)	.67 (1.06)
Cares in Residence						
Main Carer	.23 (.60)	.43 (.79)	.42 (.76)	.59 (.99)	.89 (1.34)	.65 (1.10)
Shares Care	.09[1, 3, 4] (.30)	.14[1, 3, 4] (.45)	.13[1, 3, 4] (.50)	.40[3, 4] (1.31)	.12[1, 2, 3, 4] (.33)	.13[1, 3, 4] (.46)
Non-Resident Carer						
Main Carer	.94 (1.23)	.89 (1.18)	.85 (1.30)	1.19 (1.19)	1.15 (1.32)	1.20 (1.21)
Shares Care	.89 (1.27)	.97 (1.12)	.94 (1.11)	1.15 (1.20)	.99 (1.20)	.88 (1.06)

Notes: 1=mean significantly differs from the mean of non-caregivers at the .05 level;
2=mean significantly differs from the mean of main caregivers in residence at the .05 level
3=mean significantly differs from the mean of main caregivers not in residence at the .05 level
4=mean significantly differs from the mean of those who share care not in residence at the .05 level

CHAPTER 7

DISCUSSION AND CONCLUSION

The purpose of this chapter is to provide a discussion of the findings of this dissertation. In doing so, I will expound upon the substantive and theoretical implications that these findings suggest. I will also describe the limitations associated with this project. I will suggest ways for future researchers in the study of elder care and psychological functioning to address these limitations. I conclude by discussing the importance of this dissertation.

Summary of Main Findings and Substantive Implications

This dissertation has two sets of main findings: one for the relationship between patterns of elder care and patterns of psychological distress/ well-being and another for the relationship between transitioning to elder care and patterns of psychological distress and well-being. In this section, I will describe both sets of findings. At the end of the section, I will explain how these sets of findings speak to one another.

The first set of findings is derived from the results of group-based trajectory analysis and multinomial logistic regressions. In these analyses, I identified several patterns of care for men and women. Women had more patterns of care than did men. Women had four patterns of care: a group of women who did not provide care during the course of the study period, a group of women who did not start off providing care but increased their time in elder care over time, a group who started off providing high levels of care that decreased over time, and a group who started off providing high levels of care that increased over time. Men had three patterns of care: a group of men who never provided care, a group of men who provided consistently low levels

(i.e., one or two hours per week) of care, and a group of men who provided moderate amounts of care at the beginning of the study period and this amount increased over time. I also identified several patterns of psychological distress and well-being for men and women. The most notable feature of these patterns is that they are all stable over time. Put differently, there were different levels of psychological distress/well-being, but these levels remained consistent over time.

Using multinomial logistic regression, I established the odds of membership in patterns of psychological distress/well-being based upon membership in patterns of elder care. In general, I found that men who participated in caregiving (whether in the "low" pattern or the "moderate increaser" pattern) are more likely than men who do not participate in care to be in a pattern of psychological distress that is identified by moderate distress levels (relative to low levels of distress). Similarly, women in the "high increaser" pattern were more likely than women who did not participate in elder care to be in the "high" pattern of distress (relative to a low level pattern of distress). In terms of psychological well-being, men in the "moderate increaser" pattern and women in the "high increaser" pattern had lower odds than men and women who did not provide care (respectively) of belonging to patterns of psychological well-being characterized by advantageous levels of well-being. From a policy standpoint, this may suggest different recommendations for clinicians or social workers who help caregivers. Some caregivers may need ways to help them feel less down and nervous. Hudson et al. (2013) suggest psycho-educational interventions (i.e., videos that teach caregivers how to care for their sick/aging relative). Other caregivers, in turn, may benefit from interventions designed to improve their happiness and tranquility. Shapiro et al. (2008) suggest cultivating mindfulness through meditation as a way to improve caregiver well-being.

The second set of findings comes from the results of fixed-effects regression models. In these models, I examined the within-person changes in psychological distress and psychological well-being that occurred as a result of transitioning into different types of elder care. I found that respondents who transitioned into sharing care of an aging parent had reduced levels of well-being over time. Respondents who transitioned into other forms of caregiving did not experience declines (or gains) in terms of their psychological functioning over time. Gender did not moderate the relationship between transitioning to sharing care and psychological well-being.

I suggested that caregivers who transitioned into sharing care of an aging parent in their homes may have deleterious outcomes in terms of their psychological functioning due to one of three reasons. First, sharing care may be particularly stressful as it involves negotiating the division of care between multiple people. Second, sharing care co-residentially may be more likely to reduce psychological functioning than other transition types as it may reflect the poor health of the care recipient. That is, people may have to share care as the health of the care recipient has declined so much that caregivers are no longer able to manage caregiving responsibilities on their own. Third, caregivers who transition into sharing care of an aging parent co-residentially may experience reduced psychological well-being as a result of a selection effect. For example, caregivers who share care may do so because they are juggling multiple roles and do not have the time to devote to being a main caregiver. As such, it may be role conflict that causes the decline in psychological well-being. I was only able to test the last possibility.

To test the possibility that caregivers who share care co-residentially have reduced psychological well-being due to juggling multiple roles, I compared the mean number of jobs and children of caregivers who shared care compared to those who did not. Caregivers who

shared care at all waves had a significantly *lower* average number of children. Therefore, the proposed role conflict cannot be due to the conflict between simultaneously sharing care and being a parent. Caregivers who shared care of an aging parent co-residentially had a significantly higher mean number of jobs at Waves 7 and 8 than respondents who were main, co-residential caregivers or were main caregivers who lived separately from their care recipient, respectively. Thus, it is possible that respondents who share care co-residentially experience role conflict due to simultaneous participation in caregiving and employment, but this is unlikely given that this significant mean difference in employment did not occur at every wave or between respondents who shared care co-residentially and all other caregiver types. Rather, it is likely that the reduced well-being that caregivers who transition into sharing care co-residentially experience is due to the stress associated with negotiating caregiving responsibilities between multiple people and/or the declining health of the care recipient. An avenue for future research is to directly test these mechanisms. Substantively, these findings suggest that people who transition into sharing care co-residentially (and perhaps those who do so while employed) are at particular risk for reduced well-being and would benefit the most from interventions designed to improve their psychological functioning.

Complementarity of Findings

While both sets of results examine the longitudinal relationship between elder care and psychological functioning, they are different in many ways. The findings of the group-based trajectory analyses examine differences in psychological functioning *between* patterns of elder caregiving. The results of the fixed-effects models, however, examine changes to one's psychological functioning that occur *within* a person over time as a result of transitioning into a filial caregiving role. Findings from these fixed effects models can be informed by the results of

the group-based trajectory models that identify patterns of psychological functioning. These patterns revealed that psychological functioning was relatively consistent over the waves of the study. This suggests that the fixed effects models may not be able to model much change in caregiver's psychological functioning because little change occurred.

To fully explore this possibility, I also examined the results of fixed effects models that captured elder care in different ways than what I presented in Chapter 6. I ran separate models considering elder care in four ways: (1) the lagged effects of elder care (i.e., how elder care in years prior were related to changes in psychological functioning over time); (2) the effect of cumulative years the respondent spent in care; (3) the effect of cumulative hours the respondent spent in care; and (4) the effect of categories of time spent in elder care (i.e., none, 0-4, 5-9, 10-19, and 20 or more). The only significant effect on psychological functioning was for respondents who moved from not providing care in one wave to providing 5-9 hours of care in a subsequent wave. These respondents showed a reduction in psychological well-being over time (results available from author). All other measures of elder care were not associated with changes in psychological functioning over time. These results are largely consistent with the results of the fixed effects models presented in Chapter 6, as only caregivers who transitioned into filial care co-residentially showed reduced well-being over time. Notably, these caregivers averaged between seven and eight hours of care when they transitioned into caregiving (which is consistent with the finding described above that showed that respondents who moved from not providing care to providing between 5-9 hours of care showed a reduction in psychological well-being over time). These additional models indicate the stability of the effects presented in Chapter 6. They also suggest that these models were specified properly. Overall, both sets of results from this dissertation suggest that researchers linking elder care and psychological

functioning would be wise to examine differences between and within caregivers to have a more nuanced understanding of caregiving's effect on psychological functioning.

Theoretical Implications

This dissertation is framed in a life course perspective---suggesting the importance of analyzing individuals within the context of their experiences (Elder 1998). To do this, I relied upon longitudinal examinations of elder care. I allowed insights from role theory to inform this life course framework. Specifically, combining insights from role theory with the life course perspective suggests that individuals will transition into and out of a variety of roles over their life course and, in doing so, internalize expectations regarding these roles. I suggested through one branch of role theory---the role conflict or scarcity hypothesis (Goode 1960)---that participation in filial care would have deleterious consequences for caregivers, particularly male caregivers, as adding a role to one's role set can result in role conflict. As men have not been socialized to provide care, they may not have internalized the expectations of the elder care role, as perhaps women do.

Other extensions of role theory---the role accumulation and role expansion hypotheses---suggest that there may not be unilaterally harmful consequences for adding additional roles to one's role set. According to these perspectives, adding an additional role may have psychological advantages as it provides people with a sense of purpose and meaning in their lives. These suggestions dovetail with the conceptualization that psychological functioning can be multidimensional (Rapp and Chao 2000, Winefield et al. 2012). This conceptualization posits that people have the ability to experience positive and negative emotions and affective states simultaneously, so while there may be stress associated with providing care, there may also be positive consequences such as improved self-esteem and self-efficacy.

I also allowed insights from the stress process model (Pearlin et al. 1978) to build upon the theoretical framework established through the life course perspective and role theory (and its extensions). This framework suggests certain context factors that make people more likely to report distress as a result of an experience with a potential stressor. In particular, Pearlin suggests that female caregivers may be more likely to experience poor psychological outcomes than male caregivers due to their limited social networks and lower status position in the labor market.

Finally, most studies in the literature regarding elder care and caregiver psychological functioning rely upon insights from the wear-and-tear perspective and the adaptation perspective of caregiving. The adaptation perspective suggests that people are resilient and, as such, they are able to manage stresses associated with a newly acquired caregiving role. The wear-and-tear perspective, however, suggests the opposite---the more care a person gives, the higher his/her levels of psychological distress. There is support for both in the caregiving literature.

Results from this dissertation showed deleterious outcomes for caregivers in both sets of analyses. This refutes the expectations derived from the role expansion and role accumulation hypotheses. The hypothesis that caregivers who transition into sharing care of an aging parent have reduced levels of psychological well-being over time was supported. Yet, this hypothesis was derived from the role conflict/scarcity approach, which suggests that the reason caregivers who transition into sharing care co-residentially show reduced levels of well-being would be due to juggling multiple roles. That is, caregivers who transition into sharing care would do so because they needed help from others to fulfill the expectations of all of their roles. Post hoc analyses, however, showed that caregivers who transitioned into sharing care co-residentially did not have more children on average than people who did not transition into care. Furthermore,

they only had a higher mean number of jobs than two other transition types for two of the six waves examined. Thus, it is unlikely that role conflict is the theoretical mechanism behind the reduced well-being of people who transition into sharing filial care co-residentially. As neither gender did not moderate the relationship between transitioning to care and caregiver psychological functioning, there is little support for the stress process model. This lack of support, however, may be due to the small number of people who transition into caregiving, rendering it difficult to uncover statistically significant effects.

This dissertation informs the two most commonly used theoretical perspectives in the caregiving literature: the adaptation perspective and the wear-and-tear perspective. The adaptation perspective suggests that caregivers adapt to the stress of providing care and do not experience deleterious consequences in terms of psychological functioning as a result of their participation in care. In contrast, the wear-and-tear perspective suggests that caregiving is stressful for caregivers, and as such, caregivers experience negative outcomes as a result of their participation in care. The results of this dissertation show that some caregivers do not show deleterious consequences as a result of providing care (i.e., women in the "decreaser" and "increaser" patterns as well as and people who transition into main co-residential and non-residential caregiving roles). This set of findings supports the adaptation perspective. I showed that other caregivers, however, experience detrimental consequences for providing care. For example, men who were "moderate increasers" and women who were "high increasers" showed consistently deleterious consequences in terms of their likelihood of membership in patterns of psychological functioning. With regard to the effects of transitioning into care on caregiver psychological functioning, people who transition into sharing care co-residentially have decreased well-being over time. These findings support the wear-and-tear perspective.

As some of the results of this dissertation support the adaptation perspective and others support the wear-and-tear perspective, this project suggests the importance of a more nuanced understanding of caregiving, since certain caregiving arrangements are more likely to lead to increased distress and reduced well-being than others. This study acknowledged different patterns and transitions of caregiving. Therefore, it is a unique contribution to understanding both the empirical realities of caregiving as well as the differential impacts that various forms of caregiving can have on psychological functioning. As some of the research regarding caregiving has been under-theorized, this dissertation contributes to future theoretical work in this literature because it details those who are most likely to experience poor psychological outcomes as a result of caregiving.

Limitations and Directions for Future Research

No research is without its limitations. In the following sections, I describe the limitations associated with each empirical portion of this dissertation and describe ways that future researchers can address those limitations.

Limitations of Group-Based Models

The group-based trajectory approach identified various patterns of elder care and psychological functioning. Multinomial logistic regression analyses showed the odds of membership in patterns of psychological functioning based on membership in patterns of elder care. The main limitation with these analyses is that there is little information provided by HILDA regarding participation in elder care aside from the sheer number of hours performed. It would be very interesting, for example, to understand the relationship between the caregiver and care recipient (i.e., spousal, aging parent-adult child). The identification of these patterns could also be informed by understanding the activities associated with caregiving activities. While the

number of hours may affect psychological functioning, it is also possible that certain caregiving tasks may be more or less stressful than others (i.e., diapering a parent is likely more distressing than shoveling his/her driveway). Thus, hours spent in caregiving serves as a proxy in these analyses for perceptions of burden of caregiving, but future researchers in this area should examine specific tasks, as well as the relationship between the caregiver and the care recipient.

Limitations of Fixed-Effects Models

The fixed-effects models presented in Chapter 6 examined the within-individual changes in psychological functioning that occurred due to transitioning into various types of caregiving. I found that caregivers who transition into sharing care co-residentially for an aging parent have decreased levels of psychological well-being over time. The main limitation with these models is that I have very little information about the care recipient. In these analyses, I know that the care recipient is the parent of the respondent and whether or not the recipient lives with the respondent, but I do not know if that recipient is the respondent's mother or father, how old the care recipient is, or the health concerns of the care recipient. In the case of co-residential caregiving, I do not know the factors that led the care recipient to live with the respondent. HILDA does not include information about the type of care the respondent provides to the care recipient (i.e., household repairs or medical assistance) or their subjective perceptions of caregiver burden.

Finally, I have information about whether or not the respondent is the main caregiver or if he/she shares caregiving responsibilities with others. I do not, however, have information about with whom the respondent shares caregiving responsibility. Sharing caregiving with siblings may be a qualitatively different experience than sharing care with home health aides, and these differences could be uniquely associated with caregiver psychological functioning. Future

research linking the relationship between caregiving and caregiver psychological functioning should include these variables. To date, however, there is no preexisting longitudinal dataset that tracks participation in caregiving based on perceived responsibility (i.e., main vs. shared) and residential status of the care recipient (i.e., lives with respondent or lives elsewhere) other than HILDA. Therefore, this is the first study of its kind to track the importance of transitioning into different filial care arrangements.

While there are several variables that future researchers would be wise to include in models examining the relationship between transitioning to care and caregiver psychological functioning, there are also different statistical methods that researchers could use to study this relationship. Fixed-effects models can examine change that occurs as a result of transitioning into a new role. In this dissertation, I examined the effect of transitioning from not being a caregiver into various types of caregiving arrangements on changes to within-person psychological functioning over time. There are, however, other types of changes a person can make in terms of caregiving (i.e., transitioning from non-residential caregiving to residential caregiving). Future researchers should examine the effects of transitioning in and out of various types of caregiving on changes in former caregivers' levels of psychological distress and well-being. Furthermore, future researchers should identify different patterns of transitioning. It is possible, for example, that there are different ways that people move throughout caregiving roles (i.e., transitioning into sharing care outside of one's residence, then becoming the main caregiver outside of one's residence, then becoming the main caregiver within one's residence). Different patterns could be identified through an innovative method known as sequence analysis.[12]

[12] I advise the use of sequence analysis for this future project as opposed to group-based trajectory models due to categorical nature of the filial care variables. Group-based models can handle a two-category variable (i.e.,

Identifying sequences of care may provide a more nuanced understanding of the relationship between caregiving and caregiver distress than examining transitioning into one role only. This dissertation lays the groundwork for this work to be done, as it is the only study that examines transitioning into different forms of filial care.

Conclusion

As the aging population is growing, the need for informal elder care has also increased. A large body of literature is devoted to understanding the consequences of providing care on various caregiver outcomes including labor market position, physical health, and psychological functioning. The effects of caregiving on caregiver's labor market position and physical health are unequivocal. Caregivers often have to take time off, turn down promotions, arrive late or leave work early to accommodate their caregiving role. They also suffer from poorer health than non-caregivers. While these findings suggest that caregivers may have detrimental consequences in terms of psychological functioning, past research has shown that this is not always the case. In fact, some research posits psychological advantages to providing care. The purpose of this dissertation has been to add to the body of research examining caregiving and caregiver psychological functioning through innovative methodological approaches. In doing so, I found little support for the idea that there are psychological advantages to participating in elder care or transitioning into filial care. Instead, I found that participation in certain patterns of care increased one's odds of membership in patterns of psychological distress characterized by moderate or high distress levels (i.e., women in the "high increaser" pattern and men in the "low level" and "moderate increaser" patterns) and patterns of well-being characterized by low levels

---

caregiver or not), but I am suggesting a project in which multiple types of caregiving (i.e., main, shared, co-residential, etc.) could be analyzed over time.

of well-being (i.e., men in the "moderate increaser" pattern and women in the "high increaser" pattern). I also found that people who transition into sharing care of their aging parents in their residence experienced decreased levels of psychological well-being over time.

This study is important in that it adds to a body of literature that establishes the empirical realities of caregiving. I documented patterns of caregiving for a nationally representative sample of Australians and showed how these patterns were differentially related to patterns of psychological functioning. I also examined different transitions into filial care that, before now, had been unexamined in the caregiver/psychological functioning literature. Analyzing unique patterns of elder care and transitions into filial care provides a nuanced understanding of the ways that people participate in care and how particular forms of participation may differentially affect caregiver's psychological functioning. The findings of this dissertation suggest that certain caregivers may experience poor outcomes in terms of psychological functioning, while others may not. As the elderly population is increasing, understanding the nuances of elder care will be ever more relevant. Attention to different patterns of caregiving and transitions into caregiving can help researchers better understand the relationship between caregiving and caregivers' psychological functioning.

REFERENCES

AARP. 2001. *In the Middle: A Report on Multicultural Boomers Coping with Family and Aging Issues*. Washington, D.C.: AARP.

Abaya, Carol. 2004. "The Sandwich Generation." Pp. v. Wickatunk, NJ: Carol Abaya Associates.

Abramson, Corey M. 2009. "Who Are the Clients?: Goal Displacement in an Adult Day Care Center for Elders with Dementia." *The International Journal of Aging and Human Development* 68(1):65-92.

Allison, Paul D. 2012. *Logistic Regression Using SAS: Theory and Application*. 2nd Ed. Cary, NC: SAS Institute.

Allison, Paul D. 2009. *Fixed Effects Regression Models*, Vol. 160: SAGE publications.

Almberg, Britt, Wallis Jansson, Margareta Grafström and Bengt Winblad. 1998. "Differences between and within Genders in Caregiving Strain: A Comparison between Caregivers of Demented and Non-Caregivers of Non-Demented Elderly People." *Journal of Advanced Nursing* 28(4):849-58.

American Hospital Association. 2015, "Fast Facts on U.S. Hospitals". (http://www.aha.org/research/rc/stat-studies/fast-facts.shtml).

American Psychological Association. 2010. *Stress and Gender*.

Anderson, Jared R, Mark J Van Ryzin and William J Doherty. 2010. "Developmental Trajectories of Marital Happiness in Continuously Married Individuals: A Group-Based Modeling Approach." *Journal of Family Psychology* 24(5):587.

Aneshensel, Carol S, Leonard I Pearlin, Joseph T Mullan, Steven H Zarit and Carol J Whitlatch. 1995. *Profiles in Caregiving: The Unexpected Career*: Academic Press.

Arai, Yumiko, Steven H Zarit, Midori Sugiura and Masakazu Washio. 2002. "Patterns of Outcome of Caregiving for the Impaired Elderly: A Longitudinal Study in Rural Japan." *Aging & Mental Health* 6(1):39-46.

Australian Bureau of Statistics. 2011. *Estimates of Aboriginal and Torres Strait Islander Australians*.

Ayres, Lioness. 2000. "Narratives of Family Caregiving: The Process of Making Meaning." *Research in nursing & health* 23(6):424-34.

Baillie, Virginia, Jane S Norbeck and Lou Ellen A Barnes. 1988. "Stress, Social Support, and Psychological Distress of Family Caregivers of the Elderly." *Nursing Research* 37(4):217-22.

Barber, Clifton E and B Kay Pasley. 1995. "Family Care of Alzheimer's Patients: The Role of Gender and Generational Relationship on Caregiver Outcomes." *Journal of Applied Gerontology* 14(2):172-92.

Barling, Julian, Karyl E MacEwen, E Kevin Kelloway and Susan F Higginbottom. 1994. "Predictors and Outcomes of Elder-Care-Based Interrole Conflict." *Psychology and Aging* 9(3):391.

Barnett, Rosalind C and Grace K Baruch. 1985. "Women's Involvement in Multiple Roles and Psychological Distress." *Journal of personality and social psychology* 49(1):135.

Beesley, Vanessa L, Melanie A Price, Penelope M Webb, Australian Ovarian Cancer Study Group, Australian Ovarian Cancer Study and Quality of Life Study Investigators. 2011. "Loss of Lifestyle: Health Behaviour and Weight Changes after Becoming a Caregiver of a Family Member Diagnosed with Ovarian Cancer." *Supportive Care in Cancer* 19(12):1949-56.

Bell, Di, Melissa A Lindeman and John Binda Reid. 2015. "The (Mis) Matching of Resources and Assessed Need in Remote Aboriginal Community Aged Care." *Australasian journal on ageing*.

Berkman, Lisa F and Lester Breslow. 1983. *Health and Ways of Living: The Alameda County Study*. New York: Oxford Press.

Bianchi, S. M. 2011. "Family Change and Time Allocation in American Families." *Annals of the American Academy of Political and Social Science* 638:21-44.

Biegel, David E, Esther Sales and Richard Schulz. 1991. *Family Caregiving in Chronic Illness: Alzheimer's Disease, Cancer, Heart Disease, Mental Illness, and Stroke*. Newbury Park, CT: Sage.

Bigatti, Silvia M, Christina D Wagner, Jennifer R Lydon-Lam, Jennifer L Steiner and Kathy D Miller. 2011. "Depression in Husbands of Breast Cancer Patients: Relationships to Coping and Social Support." *Supportive Care in Cancer* 19(4):455-66.

Boles, James S, W Gary Howard and Heather Howard Donofrio. 2001. "An Investigation into the Inter-Relationships of Work-Family Conflict, Family-Work Conflict and Work Satisfaction." *Journal of Managerial Issues*:376-90.

Bookwala, Jamila. 2009. "The Impact of Parent Care on Marital Quality and Well-Being in Adult Daughters and Sons." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*:gbp018.

Borg, Christel and Ingalill R Hallberg. 2006. "Life Satisfaction among Informal Caregivers in Comparison with Non-Caregivers." *Scandinavian journal of caring sciences* 20(4):427-38.

Brandtstadter, J. and W. Greve. 1994. "The Aging Self - Stabilizing and Protective Processes." *Developmental Review* 14(1):52-80.

Brody, Elaine M. 1985. "Parent Care as a Normative Family Stress." *The Gerontologist* 25(1):19-29.

Brody, Elaine M, Morton H Kleban, Pauline T Johnsen, Christine Hoffman and Claire B Schoonover. 1987. "Work Status and Parent Care: A Comparison of Four Groups of Women." *The Gerontologist* 27(2):201-08.

Brody, Elaine M, Christine Hoffman, Morton H Kleban and Claire B Schoonover. 1989. "Caregiving Daughters and Their Local Siblings: Perceptions, Strains, and Interactions." *The Gerontologist* 29(4):529-38.

Brody, Elaine M, Sandra J Litvin, Christine Hoffman and Morton H Kleban. 1992. "Differential Effects of Daughters' Marital Status on Their Parent Care Experiences." *The Gerontologist* 32(1):58-67.

Brody, Elaine M. 2000. *Women in the Middle: Their Parent Care Years*: Springer Publishing Company.

Butler, Sandra S, Winston Turner, Lenard W Kaye, Leah Ruffin and Roberta Downey. 2005. "Depression and Caregiver Burden among Rural Elder Caregivers." *Journal of Gerontological Social Work* 46(1):47-63.

Cameron, Jill I, Rene-Louise Franche, Angela M Cheung and Donna E Stewart. 2002. "Lifestyle Interference and Emotional Distress in Family Caregivers of Advanced Cancer Patients." *Cancer* 94(2):521-27.

Cantor, Marjorie H. 1983. "Strain among Caregivers: A Study of Experience in the United States." *The Gerontologist*.

Carver, Charles S, Michael F Scheier and Jagdish K Weintraub. 1989. "Assessing Coping Strategies: A Theoretically Based Approach." *Journal of personality and social psychology* 56(2):267.

Chapman, Nancy J, Berit Ingersoll-Dayton and Margaret B Neal. 1994. "Balancing the Multiple Roles of Work and Caregiving for Children, Adults, and Elders." Pp. 283– 300 in *Job Stress in a Changing Workforce*, edited by G. P. Keita and J. J. Hurrel. Washington, D.C.: American Psychological Association.

Choi, Chien-Wen J, Roslyn A Stone, Kevin H Kim, Dianxu Ren, Richard Schulz, Charles W Given, Barbara A Given and Paula R Sherwood. 2012. "Group-Based Trajectory Modeling of Caregiver Psychological Distress over Time." *Annals of Behavioral Medicine* 44(1):73-84.

Choi, Heejeong and Nadine F Marks. 2006. "Transition to Caregiving, Marital Disagreement, and Psychological Well-Being a Prospective Us National Study." *Journal of Family Issues* 27(12):1701-22.

Cobb, Sidney. 1976. "Social Support as a Moderator of Life Stress." *Psychosomatic Medicine* 38(5):300-14.

Cohen, Carole A, Angela Colantonio and Lee Vernich. 2002. "Positive Aspects of Caregiving: Rounding out the Caregiver Experience." *International Journal of Geriatric Psychiatry* 17(2):184-88.

Cohen, Sheldon and Thomas A Wills. 1985. "Stress, Social Support, and the Buffering Hypothesis." *Psychological Bulletin* 98(2):310.

Connell, Raewyn. 2005. *Masculinities*: Univ of California Press.

Cooper, Claudia, Cornelius Katona, Martin Orrell and Gill Livingston. 2006. "Coping Strategies and Anxiety in Caregivers of People with Alzheimer's Disease: The Laser-Ad Study." *Journal of affective disorders* 90(1):15-20.

Costello, Darcé M, Joel Swendsen, Jennifer S Rose and Lisa C Dierker. 2008. "Risk and Protective Factors Associated with Trajectories of Depressed Mood from Adolescence to Early Adulthood." *Journal of consulting and clinical psychology* 76(2):173.

Courtney, M., V. Minichiello and H. Waite. 1997. "Aged Care in Australia: A Critical Review of the Reforms." *Journal of Aging Studies* 11(3):229-50.

Cox, Carole and Abraham Monk. 1990. "Minority Caregivers of Dementia Victims: A Comparison of Black and Hispanic Families." *Journal of Applied Gerontology* 9(3):340-54.

Cox, Carole. 1993. "Service Needs and Interests: A Comparison of African American and White Caregivers Seeking Alzheimer Assistance." *American Journal of Alzheimer's Disease and Other Dementias* 8(3):33-40.

Cox, Carole. 1999. "Race and Caregiving: Patterns of Service Use by African American and White Caregivers of Persons with Alzheimer's Disease." *Journal of Gerontological Social Work* 32(2):5-19.

Creese, Joy, Michel Bédard, Kevin Brazil and Lori Chambers. 2008. "Sleep Disturbances in Spousal Caregivers of Individuals with Alzheimer's Disease." *International Psychogeriatrics* 20(01):149-61.

Crespo, Marıa, Javier López and Steve H Zarit. 2005. "Depression and Anxiety in Primary Caregivers: A Comparative Study of Caregivers of Demented and Nondemented Older Persons." *International Journal of Geriatric Psychiatry* 20(6):591-2.

Dautzenberg, Maaike GH, Jos PM Diederiks, Hans Philipsen and Frans ES Tan. 1999. "Multigenerational Caregiving and Well-Being: Distress of Middle-Aged Daughters Providing Assistance to Elderly Parents." *Women & health* 29(4):57-74.

Dautzenberg, Maaike GH, Jos PM Diederiks, Hans Philipsen, Fred CJ Stevens, Frans ES Tan and Myrra JFJ Vernooij-Dassen. 2000. "The Competing Demands of Paid Work and Parent Care Middle-Aged Daughters Providing Assistance to Elderly Parents." *Research on Aging* 22(2):165-87.

Day, A.T. 1991. *Remarkable Survivors: Insights into Successful Aging among Women*. Washington D.C.: The Urban Institute Press.

De Frias, CM, H Tuokko and T Rosenberg. 2005. "Caregiver Physical and Mental Health Predicts Reactions to Caregiving." *Aging & Mental Health* 9(4):331-36.

Deimling, Gary T, David M Bass, Aloen L Townsend and Linda S Noelker. 1989. "Care-Related Stress a Comparison of Spouse and Adult-Child Caregivers in Shared and Separate Households." *Journal of Aging and Health* 1(1):67-82.

Diener, Ed and Carol Diener. 1996. "Most People Are Happy." *Psychological science* 7(3):181-85.

Diener, Ed, Christie K Napa-Scollon, Shigehiro Oishi, Vivian Dzokoto and Eunkook Mark Suh. 2000. "Positivity and the Construction of Life Satisfaction Judgments: Global Happiness Is Not the Sum of Its Parts." *Journal of happiness studies* 1(2):159-76.

Diener, Ed, Shigehiro Oishi and Richard E Lucas. 2003. "Personality, Culture, and Subjective Well-Being: Emotional and Cognitive Evaluations of Life." *Annual review of psychology* 54(1):403-25.

Donaldson, C., N. Tarrier and A. Burns. 1998. "Determinants of Carer Stress in Alzheimer's Disease." *International Journal of Geriatric Psychiatry* 13(4):248-56.

Elder, G. H., Jr. 1998. "The Life Course as Developmental Theory." *Child Dev* 69(1):1-12.

Ergh, Tanya C, Lisa J Rapport, Renee D Coleman and Robin A Hanks. 2002. "Predictors of Caregiver and Family Functioning Following Traumatic Brain Injury: Social Support Moderates Caregiver Distress." *The Journal of head trauma rehabilitation* 17(2):155-74.

Evans, Sara Z, Leslie Gordon Simons and Ronald L Simons. 2014. "Factors That Influence Trajectories of Delinquency Throughout Adolescence." *Journal of youth and adolescence*:1-16.

Farran, Carol J, Eleanora Keane-Hagerty, Sandra Salloway, Sylvia Kupferer and Carolyn S Wilken. 1991. "Finding Meaning: An Alternative Paradigm for Alzheimer's Disease Family Caregivers." *The Gerontologist* 31(4):483-89.

Farran, Carol J. 1997. "Theoretical Perspectives Concerning Positive Aspects of Caring for Elderly Persons with Dementia: Stress/Adaptation and Existentialism." *The Gerontologist* 37(2):250-57.

Farran, Carol J, Baila H Miller, Julie E Kaufman and Lucille Davis. 1997. "Race, Finding Meaning, and Caregiver Distress." *Journal of Aging and Health* 9(3):316-33.

Farran, Carol J, Baila H Miller, Julie E Kaufman, Ed Donner and Louis Fogg. 1999. "Finding Meaning through Caregiving: Development of an Instrument for Family Caregivers of Persons with Alzheimer's Disease." *Journal of clinical psychology* 55(9):1107-25.

Fengler, Alfred P and Nancy Goodrich. 1979. "Wives of Elderly Disabled Men: The Hidden Patients." *The Gerontologist* 19(2):175-83.

Fernandez, John P. 1990. *The Politics and Reality of Family Care in Corporate America*: Free Press.

Finch, Janet and Jennifer Mason. 1990. "Filial Obligations and Kin Support for Elderly People." *Ageing and Society* 10(2):151-75.

Fitzpatrick, Annette L, Neil R Powe, Lawton S Cooper, Diane G Ives and John A Robbins. 2004. "Barriers to Health Care Access among the Elderly and Who Perceives Them." *American Journal of Public Health* 94(10):1788-94.

Fredriksen-Goldsen, Karen I and Andrew E Scharlach. 2001. *Families and Work: New Directions in the Twenty-First Century*: Oxford University Press.

Frijters, Paul, David W Johnston and Michael A Shields. 2010. "Mental Health and Labour Market Participation: Evidence from Iv Panel Data Models." *Discussion Paper Series No. 4883*.

Garity, J. 1997. "Stress, Learning Style, Resilience Factors, and Ways of Coping in Alzheimer Family Caregivers." *American Journal of Alzheimer's Disease* 12:171-78.

Gaugler, Joseph E., Adam Davey, Leonard I. Pearlin and Steven H. Zarit. 2000. "Modeling Caregiver Adaptation over Time: The Longitudinal Impact of Behavior Problems." *Psychology and Aging* 15(3):437-50. doi: 10.1037/0882-7974.15.3.437.

George, Linda K and Lisa P Gwyther. 1986a. "Caregiver Well-Being: A Multidimensional Examination of Family Caregivers of Dementia Adults." *The Gerontologist* 26(3):253-59.

George, Linda K and Lisa P Gwyther. 1986b. "Caregiver Weil-Being: A Multidimensional Examination of Family Caregivers of Demented Adults." *The Gerontologist* 26(3):253-59.

Gignac, Monique AM, E Kevin Kelloway and Benjam H Gottlieb. 1996. "The Impact of Caregiving on Employment: A Mediational Model of Work-Family Conflict." *Canadian Journal on Aging/La Revue Canadienne du Vieillissement* 15(04):525-42.

Gilleard, C. J., E. Gilleard, K. Gledhill and J. Whittick. 1984. "Caring for the Elderly Mentally Infirm at Home - a Survey of the Supporters." *Journal of Epidemiology and Community Health* 38(4):319-25.

Glenn, Evelyn Nakano. 2010. *Forced to Care : Coercion and Caregiving in America*. Cambridge, Mass.: Harvard University Press.

Goode, Kathryn T, William E Haley, David L Roth and Greg R Ford. 1998. "Predicting Longitudinal Changes in Caregiver Physical and Mental Health: A Stress Process Model." *Health Psychology* 17(2):190.

Goode, William J. 1960. "A Theory of Role Strain." *American Sociological Review* 25:483-96.

Goossens, Peter JJ, Bob Van Wijngaarden, Elise AM Knoppert-Van Der Klein and Theo Van Achterberg. 2008. "Family Caregiving in Bipolar Disorder: Caregiver Consequences, Caregiver Coping Styles, and Caregiver Distress." *International Journal of Social Psychiatry* 54(4):303-16.

Gottlieb, Benjamin H, E Kevin Kelloway and Maryann Fraboni. 1994. "Aspects of Eldercare That Place Employees at Risk." *The Gerontologist* 34(6):815-21.

Grandey, Alicia A and Russell Cropanzano. 1999. "The Conservation of Resources Model Applied to Work–Family Conflict and Strain." *Journal of Vocational Behavior* 54(2):350-70.

Grant, Gordon, Julie Repper and Mike Nolan. 2008. "Young People Supporting Parents with Mental Health Problems: Experiences of Assessment and Support." *Health & social care in the community* 16(3):271-81.

Green, Geoff, Jan M Gilbertson and Michael FJ Grimsley. 2002. "Fear of Crime and Health in Residential Tower Blocks a Case Study in Liverpool, Uk." *The European Journal of Public Health* 12(1):10-15.

Guite, HF, Charlotte Clark and Gill Ackrill. 2006. "The Impact of the Physical and Urban Environment on Mental Well-Being." *Public health* 120(12):1117-26.

Haley, William E, Ellen G Levine, S Lane Brown and Alfred A Bartolucci. 1987. "Stress, Appraisal, Coping, and Social Support as Predictors of Adaptational Outcome among Dementia Caregivers." *Psychology and Aging* 2(4):323.

Haley, William E and Kinta M Pardo. 1989. "Relationship of Severity of Dementia to Caregiving Stressors." *Psychology and Aging* 4(4):389.

Haley, William E, Constance AC West, Virginia G Wadley, Greg R Ford, Faye A White, John J Barrett, Lindy E Harrell and David L Roth. 1995. "Psychological, Social, and Health Impact of Caregiving: A Comparison of Black and White Dementia Family Caregivers and Noncaregivers." *Psychology and Aging* 10(4):540.

Hayes, Laura, Graeme Hawthorne, John Farhall, Brendan O'Hanlon and Carol Harvey. 2015. "Quality of Life and Social Isolation among Caregivers of Adults with Schizophrenia: Policy and Outcomes." *Community mental health journal*:1-7.

Ho, Alice and Commonwealth Fund. 2005. *A Look at Working-Age Caregivers' Roles, Health Concerns, and Need for Support*. New York: Commonwealth Fund

Hudson, Peter, Tom Trauer, Brian Kelly, Moira O'Connor, Kristina Thomas, Michael Summers, Rachel Zordan and Vicki White. 2013. "Reducing the Psychological Distress of Family Caregivers of Home-Based Palliative Care Patients: Short-Term Effects from a Randomised Controlled Trial." *Psycho-Oncology* 22(9):1987-93.

Huppert, Felicia A. 2009. "Psychological Well-Being: Evidence Regarding Its Causes and Consequences†." *Applied Psychology: Health and Well-Being* 1(2):137-64.

Hynes, Kathryn and Marin Clarkberg. 2005. "Women's Employment Patterns During Early Parenthood: A Group-Based Trajectory Analysis." *Journal of Marriage and Family* 67(1):222-39.

Ingersoll-Dayton, Berit, Marjorie E Starrels and David Dowler. 1996. "Caregiving for Parents and Parents-in-Law: Is Gender Important?". *The Gerontologist* 36(4):483-91.

Institute, Melbourne. 2011. "Hilda Survey: Annual Report 2010." Vol.: University of Melbourne.

Jacobs, P. 1991. *The Economics of Health Care*. Maryland: Aspen.

Janevic, Mary R and Cathleen M Connell. 2001. "Racial, Ethnic, and Cultural Differences in the Dementia Caregiving Experience Recent Findings." *The Gerontologist* 41(3):334-47.

Johnson, Colleen Leahy and Donald J Catalano. 1983. "A Longitudinal Study of Family Supports to Impaired Elderly." *The Gerontologist* 23(6):612-18.

Jones, Ambrose, Carolyn Strand Norman and Benson Wier. 2010. "Healthy Lifestyle as a Coping Mechanism for Role Stress in Public Accounting." *Behavioral Research in Accounting* 22(1):21-41.

Jones, Bobby L, Daniel S Nagin and Kathryn Roeder. 2001. "A Sas Procedure Based on Mixture Models for Estimating Developmental Trajectories." *Sociological methods & research* 29(3):374-93.

Kahn, Robert L, Donald M Wolfe, Robert P Quinn, J Diedrick Snoek and Robert A Rosenthal. 1964. "Organizational Stress: Studies in Role Conflict and Ambiguity."

Kendig, H., G. McVicar and A. Reynolds. 1992. *The Victorian Linkages Evaluation*. Melbourne: Department of Health, Housing and Community Services & Community Services Victoria.

Kershaw, Trace, Laurel Northouse, Charuwan Kritpracha, Ann Schafenacker and Darlene Mood. 2004. "Coping Strategies and Quality of Life in Women with Advanced Breast Cancer and Their Family Caregivers." *Psychology & Health* 19(2):139-55.

Kim, BeomCheol Peter, Suzanne K Murrmann and Gyumin Lee. 2009. "Moderating Effects of Gender and Organizational Level between Role Stress and Job Satisfaction among Hotel Employees." *International Journal of Hospitality Management* 28(4):612-19.

Kim, Youngmee and Richard Schulz. 2008. "Family Caregivers' Strains: Comparative Analysis of Cancer Caregiving with Dementia, Diabetes, and Frail Elderly Caregiving." *Journal of Aging and Health*.

Kinney, Jennifer M and Mary Ann Parris Stephens. 1989. "Hassles and Uplifts of Giving Care to a Family Member with Dementia." *Psychology and Aging* 4(4):402.

Kinney, Jennifer M, Mary Ann Parris Stephens, Melissa M Franks and Virginia Kline Norris. 1995. "Stresses and Satisfactions of Family Caregivers to Older Stroke Patients." *Journal of Applied Gerontology* 14(1):3-21.

Knight, Bob G and TJ McCallum. 1998. "Heart Rate Reactivity and Depression in African-American and White Dementia Caregivers: Reporting Bias or Positive Coping?". *Aging & Mental Health* 2(3):212-21.

Knight, Bob G, Merril Silverstein, TJ McCallum and Lauren S Fox. 2000. "A Sociocultural Stress and Coping Model for Mental Health Outcomes among African American Caregivers in Southern California." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 55(3):P142-P50.

Kosberg, J. I. and R. E. Cairl. 1986. "The Cost of Care Index - a Case-Management Tool for Screening Informal Care Providers." *Gerontologist* 26(3):273-78.

Kramer, B. J. 1997. "Gain in the Caregiving Experience: Where Are We? What Next?". *Gerontologist* 37(2):218-32.

Lambert, Sylvie D, Bobby L Jones, Afaf Girgis and Christophe Lecathelinais. 2012. "Distressed Partners and Caregivers Do Not Recover Easily: Adjustment Trajectories among Partners and Caregivers of Cancer Survivors." *Annals of Behavioral Medicine* 44(2):225-35.

Lawrence, Renée H, Sharon L Tennstedt and Susan F Assmann. 1998. "Quality of the Caregiver–Care Recipient Relationship: Does It Offset Negative Consequences of Caregiving for Family Caregivers?". *Psychology and Aging* 13(1):150.

Lawton, M Powell, Miriam Moss, Morton H Kleban, Allen Glicksman and Michael Rovine. 1991. "A Two-Factor Model of Caregiving Appraisal and Psychological Well-Being." *Journal of Gerontology* 46(4):P181-P89.

Lawton, M Powell, Doris Rajagopal, Elaine Brody and Morton H Kleban. 1992. "The Dynamics of Caregiving for a Demented Elder among Black and White Families." *Journal of Gerontology* 47(4):S156-S64.

Lazarus, Richard S. 1966. "Psychological Stress and the Coping Process."

Lazarus, Richard S and Susan Folkman. 1984. *Stress, Appraisal, and Coping*. New York: Springer.

Lee, Sunmin, Graham A. Colditz, Lisa F. Berkman and Ichiro Kawachi. 2003. "Caregiving and Risk of Coronary Heart Disease in U.S. Women: A Prospective Study." *American Journal of Preventive Medicine* 24(2):113-19. doi: http://dx.doi.org/10.1016/S0749-3797(02)00582-2.

Li, Libo and Yih-Ing Hser. 2011. "On Inclusion of Covariates for Class Enumeration of Growth Mixture Models." *Multivariate Behavioral Research* 46(2):266-302.

Li, Lydia Wailing, Marsha Mailick Seltzer and Jan S Greenberg. 1997. "Social Support and Depressive Symptoms: Differential Patterns in Wife and Daughter Caregivers." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 52(4):S200-S11.

Liu, Guangya and Matthew E Dupre. 2014. "Health Trajectories of Women in China: The Role of Parental Caregiving." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*:gbu144.

Long, Susan Orpett and Phyllis Braudy Harris. 2000. "Gender and Elder Care: Social Change and the Role of the Caregiver in Japan." *Social Science Japan Journal* 3(1):21-36.

Loomis, Laura Spencer and Alan Booth. 1995. "Multigenerational Caregiving and Well-Being: The Myth of the Beleaguered Sandwich Generation." *Journal of Family Issues* 16(2):131-48.

Lucas, Richard E, Ed Diener and Eunkook Suh. 1996. "Discriminant Validity of Well-Being Measures." *Journal of personality and social psychology* 71(3):616-28.

Marks, Nadine F, James David Lambert and Heejeong Choi. 2002. "Transitions to Caregiving, Gender, and Psychological Well-Being: A Prospective Us National Study." *Journal of Marriage and Family* 64(3):657-67.

Marks, Nadine F, James David Lambert, Heyjung Jun and Jieun Song. 2008. "Psychosocial Moderators of the Effects of Transitioning into Filial Caregiving on Mental and Physical Health." *Research on Aging* 30(3):358-89.

Marks, Stephen R. 1977. "Multiple Roles and Role Strain: Some Notes on Human Energy, Time, and Commitment." *American Sociological Review* 42(6):921-36.

Martire, Lynn M, Mary Ann Parris Stephens and Aloen L Townsend. 2000. "Centrality of Women's Multiple Roles: Beneficial and Detrimental Consequences for Psychological Well-Being." *Psychology and Aging* 15(1):148.

Martire, Lynn M and Mary Ann Parris Stephens. 2003. "Juggling Parent Care and Employment Responsibilities: The Dilemmas of Adult Daughter Caregivers in the Workforce." *Sex Roles* 48(3-4):167-73.

Mausbach, Brent T, Kirstin Aschbacher, Thomas L Patterson, Sonia Ancoli-Israel, Roland von Känel, Paul J Mills, Joel E Dimsdale and Igor Grant. 2006. "Avoidant Coping Partially Mediates the Relationship between Patient Problem Behaviors and Depressive Symptoms in Spousal Alzheimer Caregivers." *The American journal of geriatric psychiatry* 14(4):299-306.

McCurry, Susan M., Rebecca G. Logsdon, Linda Teri and Michael V. Vitiello. 2007. "Sleep Disturbances in Caregivers of Persons with Dementia: Contributing Factors and Treatment Implications." *Sleep Medicine Reviews* 11(2):143-53. doi: http://dx.doi.org/10.1016/j.smrv.2006.09.002.

Mentzakis, Emmanouil, Paul McNamee and Mandy Ryan. 2009. "Who Cares and How Much: Exploring the Determinants of Co-Residential Informal Care." *Review of Economics of the Household* 7(3):283-303.

MetLife Mature Market Institute, National Alliance for Caregiving and National Center on Women and Aging. 1999. *Metlife Juggling Act Study: Balancing Caregiving with Work and the Costs Involved*. New York: MetLife Mature Market Institute.

MetLife Mature Market Institute and National Alliance for Caregiving. 2006. *The Metlife Caregiving Cost Study: Productivity Losses to U.S. Business*. Westport, CT: Mature Market Institute.

Miller, Baila. 1989. "Adult Children's Perceptions of Caregiver Stress and Satisfaction." *Journal of Applied Gerontology* 8(3):275-93.

Miller, Baila, Richard T Campbell, Carol J Farran, Julie E Kaufman and Lucille Davis. 1995. "Race, Control, Mastery, and Caregiver Distress." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 50(6):S374-S82.

Minichiello, V., C. Russell and H. Swerissen. 1992. "A Framework to Make Sense of Public Policy and Aged Care." in *Gerontology: A Multidisciplinary Approach*, edited by V. Minichiello, L. Alexander and D. Jones. Sydney: Prentice Hall.

Monahan, Kathryn C, Laurence Steinberg, Elizabeth Cauffman and Edward P Mulvey. 2009. "Trajectories of Antisocial Behavior and Psychosocial Maturity from Adolescence to Young Adulthood." *Developmental psychology* 45(6):1654.

Morano, Carmen Louis. 2003. "Appraisal and Coping: Moderators or Mediators of Stress in Alzheimer's Disease Caregivers?". *Social Work Research* 27(2):116-28.

Moritz, Deborah J, Stanislav V Kasl and Adrian M Ostfeld. 1992. "The Health Impact of Living with a Cognitively Impaired Elderly Spouse Blood Pressure, Self-Rated Health, and Health Behaviors." *Journal of Aging and Health* 4(2):244-67.

Muthén, Bengt. 2004. *Latent Variable Analysis*. Thousand Oaks, CA: Sage Publications.

Nagin, Daniel. 2005. *Group-Based Modeling of Development*: Harvard University Press.

Nagin, Daniel. 2009. *Group-Based Modeling of Development*: Harvard University Press.

Nancy, Folbre. 2001. *The Invisible Heart: Economics and Family Values*. New York: New Press.

National Alliance for Caregiving and AARP. 2009. *Caregiving in the U.S.: A Focused Look at Those Caring for Someone 50 or Older*Congress, (http://www.caregiving.org/data/FINALRegularExSum50plus.pdf).

Neal, Margaret B, Nancy J Chapman, Berit Ingersoll-Dayton and Arthur C Emlen. 1993. *Balancing Work and Caregiving for Children, Adults, and Elders*, Vol. 3: Sage Publications.

Nijboer, Chris, Reike Tempelaar, Mattanja Triemstra, Geertrudis AM van den Bos and Robert Sanderman. 2001. "The Role of Social and Psychologic Resources in Caregiving of Cancer Patients." *Cancer* 91(5):1029-39.

Nolan, Mike, Gordon Grant and John Keady. 1996. *Understanding Family Care: A Multidimensional Model of Caring and Coping*: Open University Press Buckingham.

Nolen-Hoeksema, Susan, Louise E. Parker and Judith Larson. 1994. "Ruminative Coping with Depressed Mood Following Loss." *Journal of Personality and Social Psychology,* 67(1):92-104.

Nolen-Hoeksema, Susan. 2000. "The Role of Rumination in Depressive Disorders and Mixed Anxiety/Depressive Symptoms." *Journal of Abnormal Psychology* 109(3):504.

Olson, David H, Hamilton I McCubbin, HL Barnes, AS Larsen, MJ Muxen and MA Wilson. 1983. "Families: What Makes Them Work." *Beverly Hills*.

Ory, Marcia G, Richard R Hoffman, Jennifer L Yee, Sharon Tennstedt and Richard Schulz. 1999. "Prevalence and Impact of Caregiving: A Detailed Comparison between Dementia and Nondementia Caregivers." *The Gerontologist* 39(2):177-86.

Østbye, Truls, Rahul Malhotra and Lawrence R Landerman. 2011. "Body Mass Trajectories through Adulthood: Results from the National Longitudinal Survey of Youth 1979 Cohort (1981–2006)." *International journal of epidemiology* 40(1):240-50.

Parks, Susan H and Marc Pilisuk. 1991. "Caregiver Burden: Gender and the Psychological Costs of Caregiving." *American Journal of Orthopsychiatry*.

Parsons, Talcott. 1951. *The Social System*. Glencoe, Ill.: Free.

Pearlin, L. I., J. T. Mullan, S. J. Semple and M. M. Skaff. 1990. "Caregiving and the Stress Process - an Overview of Concepts and Their Measures." *Gerontologist* 30(5):583-94.

Pearlin, Leonard I and Carmi Schooler. 1978. "The Structure of Coping." *Journal of Health and Social Behavior*:2-21.

Pearlin, Leonard I, Elizabeth G Menaghan, Morton A Lieberman and Joseph T Mullan. 1981. "The Stress Process." *Journal of Health and Social Behavior*:337-56.

Pierret, C. R. 2006. "The 'Sandwich Generation': Women Caring for Parents and Children." *Monthly Labor Review* 129(9):3-9.

Pinquart, M. and S. Sorensen. 2006. "Gender Differences in Caregiver Stressors, Social Resources, and Health: An Updated Meta-Analysis." *Journals of Gerontology Series B-Psychological Sciences and Social Sciences* 61(1):P33-P45.

Pinquart, Martin. 2001. "Correlates of Subjective Health in Older Adults: A Meta-Analysis." *Psychology and Aging* 16(3):414.

Pinquart, Martin and Silvia Sörensen. 2003. "Differences between Caregivers and Noncaregivers in Psychological Health and Physical Health: A Meta-Analysis." *Psychology and Aging* 18(2):250-67. doi: 10.1037/0882-7974.18.2.250.

Pinquart, Martin and Silvia Sörensen. 2005. "Ethnic Differences in Stressors, Resources, and Psychological Outcomes of Family Caregiving: A Meta-Analysis." *The Gerontologist* 45(1):90-106.

Pinquart, Martin and Silvia Sörensen. 2007. "Correlates of Physical Health of Informal Caregivers: A Meta-Analysis." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 62(2):P126-P37.

Piquero, Alex R, David P Farrington and Alfred Blumstein. 2003. "The Criminal Career Paradigm." *Crime and justice*:359-506.

Pollitt, PA. 1997. "The Problem of Dementia in Australian Aboriginal and Torres Strait Islander Communities: An Overview." *International Journal of Geriatric Psychiatry* 12(2):155-63.

Pomaki, Georgia, Abas Supeli and Chris Verhoeven. 2007. "Role Conflict and Health Behaviors: Moderating Effects on Psychological Distress and Somatic Complaints." *Psychology and health* 22(3):317-35.

Poulshok, S.W. and G.T. Deimling. 1984. "Families Caring for Elders in Residence: Issues in the Measurement of Burden." *Journal of Gerontology* 39:230-39.

Pruchno, Rachel A. and Nancy L. Resch. 1989. "Aberrant Behaviors and Alzheimer's Disease: Mental Health Effects on Spouse Caregivers." *Journal of Gerontology* 44(5):S177-S82. doi: 10.1093/geronj/44.5.S177.

Rapp, Stephen R and D Chao. 2000. "Appraisals of Strain and of Gain: Effects on Psychological Wellbeing of Caregivers of Dementia Patients." *Aging & Mental Health* 4(2):142-47.

Räsänen, Pirjo, Eija Roine, Harri Sintonen, Virpi Semberg-Konttinen, Olli-Pekka Ryynänen and Risto Roine. 2006. "Use of Quality-Adjusted Life Years for the Estimation of Effectiveness of Health Care: A Systematic Literature Review." *International journal of technology assessment in health care* 22(2):235-41.

Robinson, Katherine Morton. 1997. "Family Caregiving: Who Provides the Care, and at What Cost?". *Nursing Economics* 15(5):243-47.

Rosenthal, Robert. 1991. *Meta-Analytic Procedures for Social Research*. Newbury Park: Sage Publications.

Ross, Catherine E and John Mirowsky. 2006. "Social Structure and Psychological Functioning." Pp. 411-47 in *Handbook of Social Psychology*: Springer.

Rowland, D.T. 1991. *Ageing in Australia*. Melbourne: Longman Cheshire.

Russell, Richard. 2007. "Men Doing “Women's Work:” Elderly Men Caregivers and the Gendered Construction of Care Work." *The Journal of Men's Studies* 15(1):1-18.

Ryff, Carol D. 1989. "Happiness Is Everything, or Is It? Explorations on the Meaning of Psychological Well-Being." *Journal of personality and social psychology* 57(6):1069.

Sanders-Dewey, Neva EJ, Larry L Mullins and John M Chaney. 2001. "Coping Style, Perceived Uncertainty in Illness, and Distress in Individuals with Parkinson's Disease and Their Caregivers." *Rehabilitation Psychology* 46(4):363.

Sax, S. 1990. *Health Care Choices and the Public Purse*. Sydney: Allen & Unwin.

Scharlach, Andrew E. 1994. "Caregiving and Employment: Competing or Complementary Roles?". *The Gerontologist* 34(3):378-85.

Schulz, R., A. T. Obrien, J. Bookwala and K. Fleissner. 1995. "Psychiatric and Physical Morbidity Effects of Dementia Caregiving - Prevalence, Correlates, and Causes." *Gerontologist* 35(6):771-91.

Schulz, R., J. Newsom, M. Mittelmark, L. Burton, C. Hirsch and S. Jackson. 1997. "Health Effects of Caregiving: The Caregiver Health Effects Study: An Ancillary Study of the Cardiovascular Health Study." *Annals of Behavioral Medicine* 19(2):110-16.

Schulz, Richard and Scott R Beach. 1999. "Caregiving as a Risk Factor for Mortality: The Caregiver Health Effects Study." *Jama* 282(23):2215-19.

Schulz, Richard and Paula R Sherwood. 2008. "Physical and Mental Health Effects of Family Caregiving." *The American journal of nursing* 108(9 Suppl):23.

Seltzer, Marsha Mailick and Lydia Wailing Li. 2000. "The Dynamics of Caregiving Transitions During a Three-Year Prospective Study." *The Gerontologist* 40(2):165-78.

Shapiro, Shauna L, Doug Oman, Carl E Thoresen, Thomas G Plante and Tim Flinders. 2008. "Cultivating Mindfulness: Effects on Well-Being." *Journal of clinical psychology* 64(7):840-62.

Shaw, William S., Thomas L. Patterson, Michael G. Ziegler, Joel E. Dimsdale, Shirley J. Semple and Igor Grant. 1999. "Accelerated Risk of Hypertensive Blood Pressure Recordings among Alzheimer Caregivers." *Journal of Psychosomatic Research* 46(3):215-27. doi: http://dx.doi.org/10.1016/S0022-3999(98)00084-1.

Sieber, Sam D. 1974. "Toward a Theory of Role Accumulation." *American Sociological Review*:567-78.

Silver, Roxane L and Camille B Wortman. 1980. "Coping with Undesirable Life Events." Pp. 279– 340 in *Human Helplessness: Theory and Applications*, edited by J. Garber and M. Seligman. New York: Academic Press.

Skaff, Marilyn M and Leonard I Pearlin. 1992. "Caregiving: Role Engulfment and the Loss of Self." *The Gerontologist* 32(5):656-64.

Smith, K, L Flicker, G Shadforth, E Carroll, N Ralph, D Atkinson, M Lindeman, F Schaper, NT Lautenschlager and D LoGiudice. 2011. "Gotta Be Sit Down and Worked out Together': Views of Aboriginal Caregivers and Service Providers on Ways to Improve Dementia Care for Aboriginal Australians." *Rural and remote health* 11(1650):1-14.

Smith, Suzanna D. 2005. *What Is Caregiving? Fact Sheet Fcs 2082*Congress, (http://edis.ifas.ufl.edu/he017).

Society for Human Resource Management. 2003, "Eldercare Survey". (http://www.shrm.org/Research/Articles/Articles/Documents/SHRM%20Eldercare%20Survey.pdf).

Spitze, Glenna, John R Logan, Genevieve Joseph and Eunju Lee. 1994. "Middle Generation Roles and the Well-Being of Men and Women." *Journal of Gerontology* 49(3):S107-S16.

Stephens, Mary Ann Parris, Melissa M Franks and Audie A Atienza. 1997. "Where Two Roles Intersect: Spillover between Parent Care and Employment." *Psychology and Aging* 12(1):30.

Stephens, Mary Ann Parris, Aloen L Townsend, Lynn M Martire and Jennifer Ann Druley. 2001. "Balancing Parent Care with Other Roles Interrole Conflict of Adult Daughter Caregivers." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 56(1):P24-P34.

Stoller, Eleanor Palo and Karen L Pugliesi. 1989. "Other Roles of Caregivers: Competing Responsibilities or Supportive Resources." *Journal of Gerontology* 44(6):S231-S38.

Sudore, Rebecca L, Kala M Mehta, Eleanor M Simonsick, Tamara B Harris, Anne B Newman, Suzanne Satterfield, Caterina Rosano, Ronica N Rooks, Susan M Rubin and Hilsa N Ayonayon. 2006. "Limited Literacy in Older People and Disparities in Health and Healthcare Access." *Journal of the American Geriatrics Society* 54(5):770-76.

Suitor, J Jill and Karl Pillemer. 1994. "Family Caregiving and Marital Satisfaction: Findings from a 1-Year Panel Study of Women Caring for Parents with Dementia." *Journal of Marriage and the Family*:681-90.

Talkington-Boyer, Shannon and Douglas K Snyder. 1994. "Assessing Impact on Family Caregivers to Alzheimer's Disease Patients." *The American Journal of Family Therapy* 22(1):57-66.

Tang, Siew Tzuh, Guan-Hua Huang, Yu-Chung Wei, Wen-Cheng Chang, Jen-Shi Chen and Wen-Chi Chou. 2013. "Trajectories of Caregiver Depressive Symptoms While Providing End-of-Life Care." *Psycho-Oncology* 22(12):2702-10.

Teri, L., P. Truax, R. Logsdon, J. Uomoto, S. Zarit and P. P. Vitaliano. 1992. "Assessment of Behavioral-Problems in Dementia - the Revised Memory and Behavior Problems Checklist." *Psychology and Aging* 7(4):622-31.

Thoits, P. A. 1983. "Multiple Identities and Psychological Well-Being - a Reformulation and Test of the Social-Isolation Hypothesis." *American Sociological Review* 48(2):174-87.

Thoits, P. A. 1986. "Multiple Identities - Examining Gender and Marital-Status Differences in Distress." *American Sociological Review* 51(2):259-72.

Thoits, Peggy A. 2011. "Mechanisms Linking Social Ties and Support to Physical and Mental Health." *Journal of Health and Social Behavior* 52(2):145-61.

Thoits, Peggy A. 2012. "Role-Identity Salience, Purpose and Meaning in Life, and Well-Being among Volunteers." *Social Psychology Quarterly*:0190272512459662.

Thompson, Edward H, Andrew M Futterman, Dolores Gallagher-Thompson, Jonathon M Rose and Steven B Lovett. 1993. "Social Support and Caregiving Burden in Family Caregivers of Frail Elders." *Journal of Gerontology* 48(5):S245-S54.

Townsend, Aloen, Linda Noelker, Gary Deimling and David Bass. 1989. "Longitudinal Impact of Interhousehold Caregiving on Adult Children's Mental Health." *Psychology and Aging* 4(4):393.

Trethewey, J. 1985. *Caring and the Cost*. Melbourne: Brotherhood of St. Lawrence.

U.S. Census Bureau. 2000. "Projections of the Total Resident Population by 5-Year Age Groups, Race, and Hispanic Origin with Special Age Categories: Middle Series, 2016 to 2020."

U.S. Census Bureau. 2009. "United States Population Projects: 2000 to 2050." Vol. Washington D.C.

U.S. Department of Health and Human Services. 1998. "Informal Caregiving: Compassion in Action." Vol. Washington, D.C.

Van De Rakt, Marieke, Paul Nieuwbeerta and Nan Dirk De Graaf. 2008. "Like Father, Like Son the Relationships between Conviction Trajectories of Fathers and Their Sons and Daughters." *British Journal of Criminology* 48(4):538-56.

van der Geest, Victor, Arjan Blokland and Catrien Bijleveld. 2009. "Delinquent Development in a Sample of High-Risk Youth Shape, Content, and Predictors of Delinquent Trajectories from Age 12 to 32." *Journal of Research in Crime and Delinquency* 46(2):111-43.

Vedhara, K, Nola Shanks, Gordon Wilcock and Stafford L Lightman. 2001. "Correlates and Predictors of Self-Reported Psychological and Physical Morbidity in Chronic Caregiver Stress." *Journal of Health Psychology* 6(1):101-19.

Vitaliano, P. P., J. P. Zhang and J. M. Scanlan. 2003. "Is Caregiving Hazardous to One's Physical Health? A Meta-Analysis." *Psychological Bulletin* 129(6):946-72. doi: Doi 10.1037/0033-2909.129.6.946.

Vitaliano, Peter P, James M Scanlan, Claudia Krenz, Robert S Schwartz and Santica M Marcovina. 1996. "Psychological Distress, Caregiving, and Metabolic Variables." *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 51(5):P290-P99.

Waite, Linda and Maggie Gallagher. 2002. *The Case for Marriage: Why Married People Are Happier, Healthier and Better Off Financially*: Broadway Books.

Wakabayashi, C. and K. M. Donato. 2006. "Does Caregiving Increase Poverty among Women in Later Life? Evidence from the Health and Retirement Survey." *Journal of Health and Social Behavior* 47(3):258-74.

Warr, Peter. 1987. *Work, Unemployment, and Mental Health*: Oxford University Press.

Webb, C, M Pfeiffer, KT Mueser, M Gladis, E Mensch, J DeGirolamo and DF Levinson. 1998. "Burden and Well-Being of Caregivers for the Severely Mentally Ill: The Role of Coping Style and Social Support." *Schizophrenia research*.

White, Tracela M, Aloen L Townsend and Mary Ann Parris Stephens. 2000. "Comparisons of African American and White Women in the Parent Care Role." *The Gerontologist* 40(6):718-28.

Wilhelm, Kay, Vivianne Kovess, Carmen Rios-Seidel and Adam Finch. 2004. "Work and Mental Health." *Social psychiatry and psychiatric epidemiology* 39(11):866-73.

Williamson, Gail M and David R Shaffer. 2001. "Relationship Quality and Potentially Harmful Behaviors by Spousal Caregivers: How We Were Then, How We Are Now." *Psychology and Aging* 16(2):217.

Winefield, Helen R, Tiffany K Gill, Anne W Taylor and Rhiannon M Pilkington. 2012. "Psychological Well-Being and Psychological Distress: Is It Necessary to Measure Both?". *Psychology of Well-Being* 2(1):1-14.

Wright, Scott D, Dale A Lund, Michael S Caserta and Clara Pratt. 1991. "Coping and Caregiver Well-Being: The Impact of Maladaptive Strategies." *Journal of Gerontological Social Work* 17(1-2):75-91.

Yee, J. L. and R. Schulz. 2000. "Gender Differences in Psychiatric Morbidity among Family Caregivers: A Review and Analysis." *Gerontologist* 40(2):147-64.

Young, Rosalie F and Eva Kahana. 1989. "Specifying Caregiver Outcomes: Gender and Relationship Aspects of Caregiving Strain." *The Gerontologist* 29(5):660-66.

Young, Rosalie F and Eva Kahana. 1995. "The Context of Caregiving and Well-Being Outcomes among African and Caucasian Americans." *The Gerontologist* 35(2):225-32.

Zarit, S. H., K. E. Reever and J. Bachpeterson. 1980. "Relatives of the Impaired Elderly - Correlates of Feelings of Burden." *Gerontologist* 20(6):649-55.

Zeidner, Moshe and Donald Saklofske. 1996. "Adaptive and Maladaptive Coping."

Zhan, Heying Jenny. 2006. "Joy and Sorrow: Explaining Chinese Caregivers' Reward and Stress." *Journal of Aging Studies* 20(1):27-38. doi: http://dx.doi.org/10.1016/j.jaging.2005.01.002.

Zimet, Gregory D, Nancy W Dahlem, Sara G Zimet and Gordon K Farley. 1988. "The Multidimensional Scale of Perceived Social Support." *Journal of personality assessment* 52(1):30-41.