

The Cumulative Cost of Care: Caregiving Over the Life Course and Severity of Depression

By
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Abstract

Caregiving research is typically well-contained within silos focusing on those who are actively providing care or based on the nature of the caregiver/care recipient relationship. Little research has investigated how caregiving experiences throughout the life course, regardless of the nature of the caregiving relationship, impact long-term mental health outcomes, nor how this might vary by gender. The purpose of this study is to analyze the relationship between caregiving and mental health when considering care provided for others during various points in time, and how these outcomes might differ by gender. This research is positioned within a gendered life course framework. Using data from the 2013-2014 wave of the Midlife in the United States (MIDUS) study ($n = 3,288$), a generalized ordered probit regression model (GOPR) was used to analyze gender differences in severity of depression related to current, recent, and past caregiving experiences, controlling for age, employment status, marital status, income level, race, and educational attainment. Results indicate that the accumulation of caregiving experiences over the life course is associated with increased symptoms of depression; however, statistically significant differences between male and female caregivers were not observed. Caregiving researchers and family practitioners should consider past caregiving experiences when developing research models and designing interventions to support informal caregivers and care recipients.

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I would like to dedicate this thesis to my parents. To my mother, Ida Wallace, the consummate caregiver, who supported her husband and children in all their endeavors at great

personal and professional cost to herself. And to my father, the late James F. Wallace, Sr., whose quest for knowledge set the tone for my educational pursuits.

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INTRODUCTION

It is well known that caregiving is associated with increased rates of emotional and physical stress and reduced well-being for caregivers (Carr and Utz 2020; Faw 2018; Glauber 2017; Glauber and Day 2018; Kramer and Thompson 2001; Lin, Fee, and Wu 2012; Pinquart and Sörensen 2003). However, many of these studies are cross-sectional and focus on the specific relationship of the caregiver to the care recipient as a way to delimit the scope of the study. As such, the body of caregiving literature is typically well-contained within research silos based on the caregiver/care-recipient relationship thus limiting our understanding of how these caregiving experience accumulate and progress over the life course. Furthermore, research has found that the caregiving role typically lasts between 4 to 5 years for those caring for an aging parent or spouse (AARP 2020; Pinquart and Sörensen 2003). This limits our understanding of the well-being outcomes of caregiving to the specific timeframe of the “active” caregiving experience. This places researchers in a position to miss the cumulative impact of the stress and strain associated with caregiving when these responsibilities accumulate through multiple caregiving experiences over time.

This study takes a broader view of caregiving outside of the specific caregiver/care recipient relationship categorization and the *active* caregiving phase and views it in terms of temporal occurrence throughout the adult life course. Adults can serve as caregivers for minor children then again as caregivers to aging parents or family members and again as caregivers to their spouses and partners. Sometimes these caregiver roles may overlap into what Perkins and Haley (2010) call “compound caregivers”; other times there can be significant distance between subsequent caregiving roles. Additionally, some adults will never be in a position to assume a caregiving role while others may have multiple caregiving experiences throughout their life

course. The purpose of this study is to understand how a broad range of caregiving experiences throughout the adult life course impacts long-term mental health as measured by depressive symptomatology. This study focuses only on informal caregivers who provide care to another family member or friend (AARP 2020).

This study also analyzes how multiple caregiving roles interact with gender and how these differences manifest in depressive symptomatology. The role of caregiving remains highly gendered in which women are overrepresented (AARP 2020; Carr and Utz 2020; Ivery and Muniz 2017). In 2020, over sixty percent of women provided care to aging adults or children with long-term illnesses or disabilities as compared to 39 percent of men (AARP 2020). As men and women age and caregiving responsibilities multiply, the gender gap in time spent in caregiving and household management tasks hovers between 50 and 55 percent with women spending, on average, three hours more on caregiving and household tasks per day than men (Hess, Ahmed, and Hayes 2020). This is important to consider as we move toward the retirement age of the Baby Boomer generation by 2030 (U.S. Census Bureau 2014). At this point, older Americans are projected to outnumber children under the age of 18 for the first time in U.S. history. The ratio of working-age adults to retirement-age adults, otherwise known as the old-age dependency ratio, is estimated to reach 3.5 to 1 by 2030. By 2060, this ratio is estimated to decrease to 2.5 to 1 (U.S. Census Bureau 2014). With the rising costs associated with long-term care, the increasing demand on the Social Security system, and the delay of having children until later ages, women will likely assume multiple and simultaneous caregiving roles in the near future.

Women are, therefore, more likely to experience the stressors related to caregiving more acutely and consistently than male caregivers. Alternatively, other studies hold that since

caregiving is non-normative for men, stress may be more acute for caregiving men as compared to caregiving women who have been socialized to care for others (Robinson et al. 2014; Russell 2007). With these factors in mind, two primary research questions guide this exploration: Does experiencing multiple caregiving events over the life course impact caregiver well-being long-term; and, given that women typically assume caregiving roles throughout the life course, how might caregiver well-being outcomes differ for men and women over the breadth of caregiving experiences?

Theoretical Framework

The theoretical framework of the life course perspective first developed by Glen Elder and advanced through work done by Bengtson, Allen, Johnson, Crosnoe, and Moen will guide my conceptualization of caregiving (Bengtson and Allen 1993; Elder, Johnson, and Crosnoe 2003; Moen 2001). The life course framework was developed through multidisciplinary contributions within a variety of fields including life span development, child development, family development, sociology, psychology, and historical studies of the family (Bengtson and Allen 1993). This analytic framework views individual and family outcomes through multiple contexts over the life course including temporal contexts of development, social contexts, heterogeneity through time, and through micro-, meso-, and macro-level influences. The five main principles of the life course framework include: the principle of life-span development which views human development as a lifelong process; the principle of agency which holds that individuals construct their own life course through the choices and actions they take within the constraints of history and social circumstance; the principle of time and place which holds that individuals are embedded and shaped by their historical context; the principle of timing in which the impact of life events may vary according to their timing in a person's life; and the

principle of linked lives in which lives are lived interdependently through a network of shared relationships (Elder et al. 2003).

Adopting a perspective of linked lives helps researchers understand how men and women progress through the life course and how their lives intersect, interact, and are impacted by others. The people with whom we are linked throughout life can also have significant impact on the trajectory of our lives. For women, their linked lives may offer less flexibility of choice in other areas of their lives than for men, thus, it is important to consider the types of relationships that women have, both in terms of the constrictions as well as the support that they introduce throughout the individual life course.

Moen (2001) expands on this framework arguing that a gendered life course perspective, “allows... researchers a better way to understand the historical, structural, and biographical forces that shape women’s lives as they age” (188). This framework supports Risman’s (2004) view that gender is a social structure that leads to different opportunities and constraints as one views oneself as a gendered being; interactionally as one engages with others in relationships and within society; and institutionally as gender distinctions alter resource distribution and future life trajectories. Considering gender as a social structure that impacts the lives of men and women differently, a gendered approach to the life course is an important way to distinguish the experiences of men and women as caregivers as they are impacted by the care they provide to others throughout their lives. If we were to simply review the experiences of caregivers as compared to non-caregivers without accounting for gendered differences, researchers may miss important distinctions in well-being outcomes of caregivers.

In terms of health and well-being of those who provide care, reviewing demographic and social trends through a gendered life-course perspective provides insight into how the gender

constructions lead to increased stress at certain events within the life course as well as how stress accumulates over time. The stressors associated with life events impact men and women differently as men and women respond differently and have different social and financial resources to mitigate (or exacerbate) stressful situations. This perspective will inform the framework of my research into the impact of cumulative stresses associated with caregiving in the lives of men and women.

LITERATURE REVIEW

Caregiving literature is replete with studies analyzing the links between caregiver status and well-being through measures of life satisfaction, subjective well-being, depressive symptomatology, and stress and strain. Carers who have higher education, more financial resources, broader social support networks, and those who are healthier tend to report higher levels of satisfaction in life (De Oliveira and Hlebec 2016). Alternatively, caregivers who devote more time toward care tasks, live with care recipients, experience caregiving role overload, and experience being trapped within their caregiving roles have poorer mental health outcomes (Caputo, Pavalko, and Hardy 2016; Fredman et al. 2010; Hilbrecht et al. 2017; Polenick and Depasquale 2019). Yet other characteristics of the caregiving relationship may offer benefits that attenuate such outcomes. For parents caring for minor children, the benefits of parenting may mitigate stressors in such a way as to eliminate the resultant impact of such stress (Gunderson and Barrett 2017; McDonnell, Luke, and Short 2019). Additionally, Haley and Perkins (2004) found that as caregivers gain experience and expertise in their caregiving career, the benefits of a sense of caregiving mastery may outweigh the stress and strain of the role. Researchers have found that more experienced caregivers have a higher sense of mastery and lower related stress

than newer caregivers. Caregiving mastery has a weaker positive association with role overload and depression than caregivers with a lower sense of caregiving mastery (Pioli 2010).

This review of the literature will provide a foundation for what we currently know about caregiver well-being in terms of caregiving events, and how gender contributes to well-being outcomes. I will outline the caregiving literature highlighting both cross-sectional and longitudinal studies assessing mental health outcomes for current/active caregivers. I will review the literature on outcomes for those holding concurrent caregiving roles. Taking a gendered life course perspective, I will review the primary differences found between the genders in caregiver outcomes. Finally, I will review how the caregiving relationship type contributes to well-being and mental health, and how transitions out of caregiving roles impact well-being.

Caregiving & Short-Term Well-being Outcomes

Many studies have outlined how the stress and strain of caregiving result in a poorer sense of well-being and/or higher rates of mood disorders such as depression and anxiety (Carr and Utz 2020; Faw 2018; Glauber 2017; Glauber and Day 2018; Kramer and Thompson 2001; Lin et al. 2012; Pinqart and Sörensen 2003). Familial caregivers of aging parents or relatives experience higher levels of stress and depression as well as lower levels of well-being, physical health, and self-efficacy as compared to non-caregivers (Caputo et al. 2016; Chappell, Dujela, and Smith 2014, 2015; Marks, Lambert, and Choi 2002; Pinqart and Sörensen 2003; Tabler and Geist 2021). Mothers and fathers of minor children experience a sense of meaning and happiness in childcare activities, yet they also express feelings of not having enough time for themselves or each other in their romantic partnerships (Bianchi 2011; McDonnell et al. 2019). These indirect stressors on relationships and time for oneself can have negative impact on one's overall sense of well-being.

Considering the social and environmental context of one's life, the environment in which care is provided is important to consider. For those that lived with their care recipients, levels of depression are magnified as compared to those who live outside of the care recipient's home (Caputo et al. 2016; Carr and Utz 2020; Choi and Marks 2006; Monin et al. 2019; Penning and Wu 2016; Pinquart and Sörensen 2003; Polenick and Depasquale 2019). Therefore, especially for spousal caregivers, living with the care recipient without respite can lead to much poorer mental health and relationship outcomes. Spousal care, regardless of gender, has been found to be associated with reduced well-being, increased levels of stress and depression, and increased discord within the marital relationship resulting in potential union dissolution (Choi and Marks 2006; Penning and Wu 2016). Polenick and Depasquale (2019) found that caregivers who experienced "role overload" due to caregiving intensity reported increased restrictions in their personal activities, relational discord, and family disagreements. Additionally, longer hours spent providing care is associated with reduced well-being (Hilbrecht et al. 2017; Laditka and Laditka 2001). As is expected, researchers have found that better mental health outcomes are usually seen for caregivers with reduced caregiving demands, non-spousal caregivers, and those who have more social contact (Fredman et al. 2010).

Caregiving & Long-Term Well-being Outcomes

There are fewer studies that evaluate the long-term impacts of caregiving experiences over time. Gaugler (2010) conducted a systematic review of literature to understand the long-term impact of providing care for those who had experienced a stroke. The results of this review were mixed with some studies indicating reductions in stress and depression over time while others indicate improvements in stress and depression over time. Contextual factors including the deteriorating health and increased care needs of the care recipient may be contributing factors to

poorer mental health outcomes for caregivers. Inversely, caregivers may have settled into their new role, and have experienced an increased sense of control and mastery as their caregiving experiences progressed (Pioli 2010; Russell 2001, 2007; Smith et al. 2011).

The type of caregiving relationship may also make a difference in long-term outcomes with rates of depression decreasing slightly over time for women who provided care to aging parents, while they held stable for women who provided care to spouses (Caputo et al. 2016). Again, this may reflect more of the stress associated with the living arrangement of the caregiver and care recipient than it does with some inherent aspect of the caregiver/care recipient relationship. Despite the increased burden female caregivers experience over time, they also tend to have lower mortality rates than non-caregiving counterparts (Caputo et al. 2016). This finding may reflect that caregiving, while stressful, may hold benefits that translate to lower mortality risk. More research is needed to understand the relationship between these factors.

Gender Differences in Caregiving Well-being Outcomes

Research has found that despite a convergence in how men and women share domestic-related tasks such as housework and caregiving, women still provide double the amount of childcare than men do per week (Bianchi 2011; Man Yee Kan, Sullivan, and Gershuny 2011). The decisions about who should assume caregiving roles is still predicated on cultural notions of gender roles rather than more logical considerations of relative income or time availability (Blair-Loy 2003; Doan and Quadlin 2019).

Women tend to experience more pressure to choose between work and family as compared to men, and this can have important impacts on their income earning potential, work opportunities, and recreational opportunities relative to men (Bianchi 2011; Budig and England 2001; Glauber 2007, 2019; Wakabayashi and Donato 2005). Bianchi's (2011) analysis of the

American Time Use Survey found that women scale back their work hours or leave the work force altogether due to caregiving and child-rearing demands while men tend to work more than 40 hours per week, on average. The financial impact was more pronounced in women in mid-life, women with less education, and women with competing roles such as caregiving and employment roles. Of particular importance was that women did not recoup these losses when they stopped their caregiving practices (Wakabayashi and Donato 2005). With more women working and the demand for informal caregiving rising, women are in a position to experience substantial financial losses within the next decade which can lead to increased economic-related stress and strain over time.

In caring for minor children, men tend to engage in more leisure-related tasks with children, while women tend to engage in more menial, day-to-day childcare tasks (McDonnell et al. 2019; Musick, Meier, and Flood 2016). For example, men may accompany children to extracurricular activities such as sports activities or different social groups, but mothers monitor the less enjoyable aspects parenting including making sure children complete their homework, are fed, bathed, and clothed. Furthermore, Daminger (2019) found that women are more likely to be responsible for the less tangible, cognitive aspects of parenting such as ensuring the family schedule is created and maintained, doctor appointments are set, transportation is secured, and monitoring similar types of day-to-day management of family and caregiving tasks. Women, in particular, are more likely to give up sleep and leisure time to attend to caregiving responsibilities as compared to men, which can have important repercussions on mental health outcomes (Bianchi 2011; McDonnell et al. 2019; Musick et al. 2016). As a result, men tend to experience the more beneficial aspects of child-rearing as measured by increased levels of

happiness, less stress and less physical exhaustion, while women experience more of the day-to-day stress of monitoring care recipient's survival and enrichment (McDonnell et al. 2019).

Female caregivers of aging adults or spouses tend to assume more intense caregiving roles than male caregivers, and they tend to report more caregiving burden relative to men (Lin et al. 2012; Swinkels et al. 2019). Although male caregivers report that caring for longer hours is more stressful for them, women tend to provide more total hours of care than their male counterparts (Laditka and Laditka 2000; Lin et al. 2012). Furthermore, researchers have found that the husband's health issues were linked to reduced well-being and increased functional limitations among wives and that these outcomes increased over time (Caputo et al. 2016; Swinkels et al. 2019). As the mortality rate is higher for men, women are, therefore, more likely to serve as their husband's caregiver than the reverse arrangement (U.S. Census Bureau 2014).

Given women's tendency to assume caregiving roles throughout their lives, most studies analyzing caregiving focus on women's experiences, but male caregivers of aging adults and parents are on the rise, especially as women are torn between employment and family demands. Kramer and Thompson (2001) hold that men who provide care experience decreased levels of happiness and well-being, increased feelings of depression, and increased social isolation as they transition into caregiving roles. Furthermore, men may have more trouble coordinating with social welfare agencies, providers, and other support institutions given their socialization in self-reliance and independence (Kramer and Thompson 2001). As such, men may be less willing to ask for help and support and may attempt to silence or manage their emotional struggles independently. Alternatively, Campbell and Carroll (2007) find that male caregivers engage in non-traditional masculine strategies such as discussing their emotions relative to providing care and performing whatever care tasks were needed. However, in discussing women as caregivers

of parents, they often spoke in essentialist terms describing women as being more “natural” caregivers relative to men (Campbell and Carroll 2007). Thus, while caregiving men engaged in non-traditional masculine practices, they also did not challenge hegemonic ideas about masculinity and providing care to others (Campbell and Carroll 2007).

Studies involving male caregivers are somewhat more prevalent among spousal caregiving contexts given that as men and women age, the gender gap in caregiving converges with the onset of men’s retirement from the workforce (Glauber 2017). Men who leave paid employment to provide care for their wives report feeling isolated, and that their caregiving work is invisible and unacknowledged by family or friends (Russell 2001, 2007). This frustration at feeling isolated and invisible can lead to family disagreements, which may exacerbate experiences of stress (Russell 2007). However, men are more likely to adopt practices of caregiving that mimic the managerial and strategic aspects of their paid employment (Russell 2001, 2007). This allows men a sense of mastery over the caregiving situation along with a familiar set of strategies to attend to caregiving demands, which may mitigate the negative impact of caregiving on mental health. Men are also more likely to outsource caregiving to informal or formal caregiver support thus reducing caregiving burden (Bertogg and Strauss 2020; Campbell and Carroll 2007; Glauber 2017; Russell 2007).

Multiple & Compounded Caregiving and Caregiving Transitions

There is a dearth of literature examining the cumulative impact of holding multiple caregiving roles or experiencing multiple events of caregiving over the adult life course on one’s well-being and mental health. Most of the literature I was able to find focused on what Perkins and Haley (2010) call “compounded” caregiving, those who are caregivers of adult children with long-term illnesses or developmental disabilities and serve as caregivers for another family

member other than their child. Another type of compound caregiver is what DePasquale (2016) coins as “double- or triple-duty” caregivers who work in the formal caregiving industry while also caring for minor children and/or aging or ill spouses or relatives. The results from these studies are also mixed with Perkins and Haley (2010) finding that compound caregivers did not fare differently than their non-compound counterparts in life satisfaction, depression symptoms, or mental health unless their dependent child had higher medical and behavioral needs. Thus, the important aspect of caregiver outcomes is more contingent upon the care needs of care recipient rather than assuming multiple caregiving roles. Alternatively, DePasquale (2018) found that triple-duty caregivers tend to have poorer psychological well-being and higher psychological distress as compared to non-family caregivers and double-duty caregivers (those only holding one other caregiving role outside of their paid caregiving role). Since these studies focus solely on simultaneous caregiving experiences and combine aspects of both formal and informal caregiving, it is difficult to ascertain whether experiencing multiple informal caregiving events throughout the adult life course leads to reduced well-being in the long-term.

Studies that have examined the impact of transitioning into and out of caregiving roles may provide some insight into how mental health outcomes ebb and flow over time. Again, these results are mixed and seem to be contingent upon the caregiver/care recipient relationship or living situation. Caregivers who provided uninterrupted care for grandchildren as compared to not caring for grandchildren were associated with lower levels of depression, thus reflecting the interplay between stress and benefits of caring for minor children (Liu and Lou 2017). For caregivers of aging parents, neither new caregivers nor those who had provided continuous care differed in depressive symptoms; however, transitioning out of one's caregiving role is associated with fewer depressive symptoms (Gaugler et al. 2009; Liu and Lou 2017). On average, spouses

providing care to their partners experienced increased depressive symptoms both when transitioning into and out of their caregiving role (Liu and Lou 2017). For spousal caregivers, the stress associated with providing care to their partner is relatively stable both entering into and terminating one's caregiving role. This is likely due to the resultant grief associated with ending one's spousal caregiving role due to death or transition to institutional-based care.

Another important aspect of providing care to those with long-term illnesses or disabilities is the anticipated bereavement associated with that caregiving experience (Ziamba and Lynch-Sauer 2005). Interviews with adult daughter caregivers identified two primary types of losses associated with caregiving and emotional strain: the real or anticipated loss of the care recipient and the loss of one's own youth in light of entering into a caregiving role (Ziamba and Lynch-Sauer 2005). This research highlights the importance of understanding grief as it relates to depressive symptomatology in caregivers for both types of losses (loss of loved ones and the loss of one's previous social role.)

What is evident in reviewing the literature is that actively providing care to another person is stressful regardless of gender. However, given that women have historically assumed more caregiving roles throughout their lives based on gendered notions of who should provide care to others, women tend to experience the stress of these caregiving experiences more frequently than men. Conflicting findings in the literature describe caregiving as possessing both benefits and disadvantages to caregivers, and these may be exacerbated depending on the living arrangement and caregiver/care recipient relationship type. Despite the wealth of research on the impact of caregiving on caregiver mental health, very little to no research has explored the cumulative outcomes of experiencing multiple caregiving events throughout one's life course. This study's objective is to better understand how experiencing multiple caregiver events

throughout the adult life course impacts well-being measured through depressive symptomatology. Additionally, the study design seeks to understand gender differences in caregiving experiences and the resultant impact on depression. Based on the literature and my research questions, I hypothesize the following:

1. As caregiving experiences increase over the life course, caregivers of both genders will experience higher symptoms of depression as compared to non-caregiving adults.
2. Caregiving women will report higher symptoms of depression than caregiving men.
3. Caregiving women will report higher symptoms of depression than non-caregiving women.

METHODS

This secondary data analysis used data from the Midlife in the United States (MIDUS) study, a longitudinal study funded by the John D. and Catherine T. MacArthur foundation and the Research Network on Successful Midlife Development, beginning in 1995 and continuing through the present day. There have been three primary waves of the study with Wave 1 carried out in 1995-1996; Wave 2 carried out in 2004-2006; and Wave 3 in 2013-2014. The purpose of the MIDUS study is to understand the psychological, behavioral, and social factors of Americans at the middle stage of life. Respondents were originally recruited into the first wave of the study through a randomized sampling of over 7,100 Americans aged 25 to 74 years through a random digit-dialing procedure (Ryff et al. 2019). The sample includes a subsample of 998 pairs of twins and hundreds of siblings of the original randomized respondents. Participants engaged in a 30-minute telephone interview and a 100-page mail-in questionnaire in the first wave of the study.

In Wave 3, respondents engaged in both a telephone interview consisting of eight sections assessing one's experience with the 2008 financial recession; health; education,

occupation, marital status; household composition; caregiving; living arrangements; race and ethnicity; and life satisfaction (Ryff et al. 2019). Respondents also answered a 100-page self-administered questionnaire covering sixteen sections assessing health; female-focused health conditions; health insurance; parent's health; work; finances; community involvement; neighborhood context; social networks; children; marriage or close relationships; sexuality; religion and spirituality; discrimination; and life overall (Ryff et al. 2019). This data resulted in a collection of 6,988 variables.

The focus of this paper is on data from the third wave in which respondents engaged in a 45-minute telephone interview, completed a 100-page self-administered questionnaire, and participated in a 25-minute cognitive telephone interview. Over three-fourths (77 percent) of respondents from the second wave completed the telephone and self-administered questionnaires resulting in a total of 3,294 respondents for the third wave (Ryff et al. 2019). The third wave respondents consisted of 1,414 randomly selected participants from the first wave, 544 siblings, 1,108 twins, and 318 from the city oversample. Six participants were omitted from the dataset due to missing information on the caregiving-related questions used to develop the independent variables within this study. The final sub-sample for this study was 3,288. This study focused on demographic questions as well as questions related to the dependent variable (depression) and independent variables (temporal caregiving experiences).

Measures

Dependent variable: Depression.

Depressive symptomatology serves as the dependent variable in this study and was constructed through responses to seven questions related to depression and six questions related to anhedonia or the inability to feel pleasure. In order for respondents to meet the criteria for

depression, they must have experienced symptoms for a two- week period based on criteria from the American Psychological Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R) (APA 2000). Depressive symptoms that fall below the two-week threshold are not captured within this sample and would likely have impact on the distribution of depressive symptoms among this dataset.

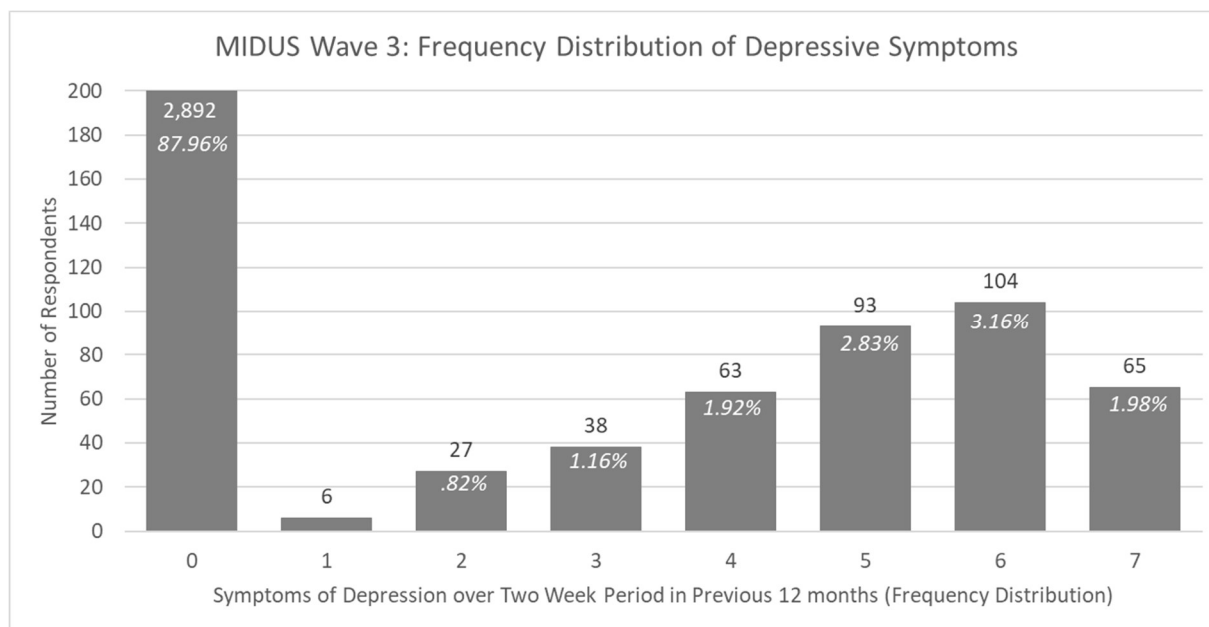
The depression question asked, “During two weeks in the past 12 months, when you felt sad, blue, or depressed, did you:” and the anhedonia question asked “During two weeks in the past 12 months, when you lost interest in most things, did you:” with the following “Yes” or “No” response choices:

- lose interest in most things?
- feel more tired out or low on energy than is usual?
- lose your appetite or experienced increased appetite?
- have more trouble falling asleep than usual?
- have a lot more trouble concentrating than usual?
- feel down on yourself, no good, or worthless?
- think a lot about death?

A discrete variable of depression severity was constructed based on the total number of “Yes” responses from 0 to 7 with zero indicating no symptoms of depression and seven indicating the highest symptoms of depression. The internal consistency of the depression variable was excellent in this sample with a Cronbach alpha of 0.965.

Figure 1 depicts the distribution of depressive symptomatology among Wave 3 respondents.

Figure 1: MIDUS Wave 3 Frequency Distribution of Depressive Symptoms



Of the total sample, 2,892 (87.96 percent) reported no symptoms of depression over a two-week period within the 12 months prior to the study, leaving 396 respondents who had between one and seven symptoms of depression during this timeframe. The majority of these respondents reported between five and six symptoms of depression during a two-week timeframe.

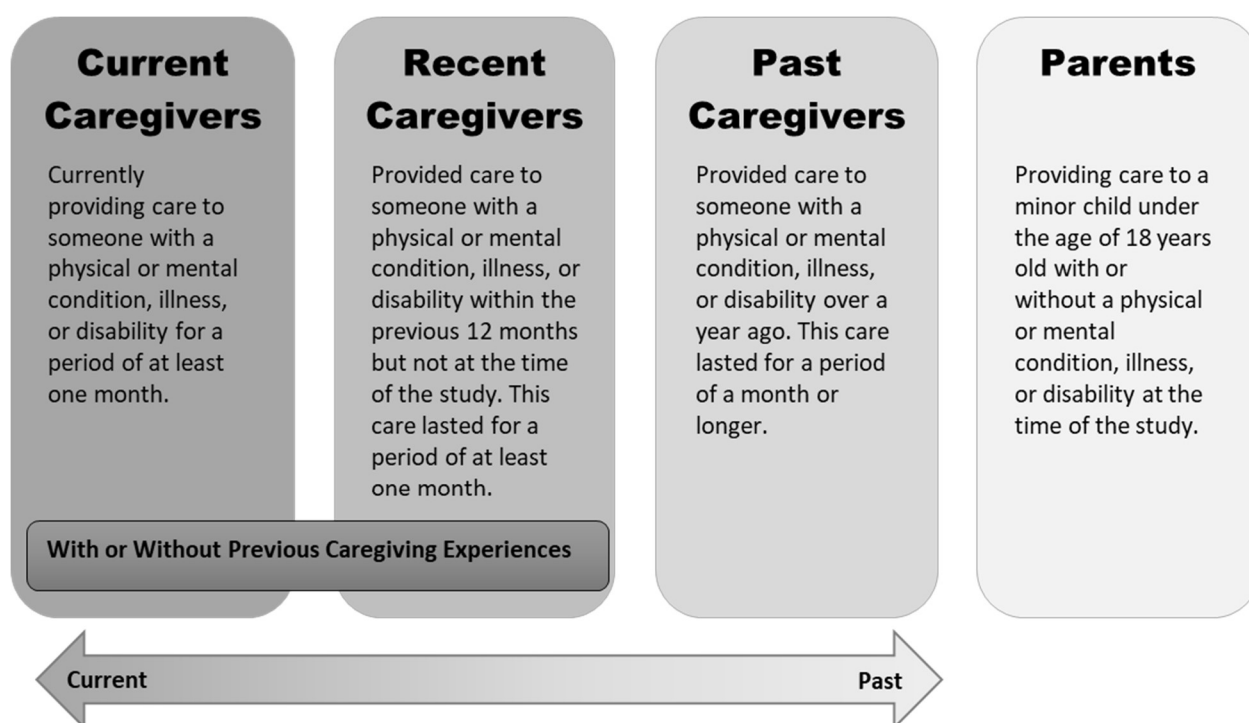
Depressive symptoms among this sample are strongly right skewed and attempts to transform the variable did not result in normally distributed results.

Independent variables: Temporal caregiving experiences.

Temporal caregiving experiences serve as the independent variables and were conceptualized based on the timing of these roles relative to the time of the third wave of the study. These roles were identified through the following questions in Section D of the telephone interview. Respondents were asked, “During the last 12 months have you, yourself, *given* personal care for a period of one month or more to a family member or friend because of a physical or mental condition, illness, or disability?” Respondents were also asked, “Are you still

helping (him/her)?" For respondents who indicated that they provided care in the past 12 months and were still providing care to that person, they were identified as "Current Caregivers". For respondents who indicated that they provided care in the past 12 months, but were no longer providing care to that person, they were identified as "Recent Caregivers". Figure 2 outlines the four main categories of caregivers: current caregivers, recent caregivers, past caregivers, and parents of minor children used in this study design.

Figure 2: Temporal Caregiver Framework



For those that had provided care within the 12 months prior to the study, researchers asked, "Before the beginning of the period of providing personal care you have just described, had you EVER GIVEN personal care for a period of one month or more to a family member or friend who, because of a long-term physical or mental condition, illness, or disability, was not able to take care of him- or herself?" For those that responded "Yes" to this question, they were identified as "Previous Caregivers". Respondents who did not provide care in the 12 months

prior to the study were asked, “Have you EVER given personal care for a period of one month or more to a family member or friend who, because of a long-term, physical or mental condition, illness, or disability, was not able to take care of him- or herself?” For all respondents who answered “Yes” to this question, they were identified as “Past Caregivers” who had served in a caregiving role more than a year prior to the study. For all respondents who answered “No” to all caregiving questions, they were identified as “non-caregivers” indicating that they had not provided care for at least one month to someone with a physical or mental condition, illness, or disability.

I included parenting as another caregiving category within the model even though this caregiving category may have occurred prior to or simultaneously with other caregiving experiences. In other words, within the temporal caregiving categories, parenting is not mutually exclusive from the other categories. While parenting is not included as a primary research question in this study, I was curious how being a parent contributes to long-term outcomes of well-being given prior findings that parenting can be a particularly stressful time, particularly for mothers.

Table 1 outlines the descriptive statistics of caregiver frequency in the third wave of MIDUS. Variables distinguishing current caregivers with and without previous caregiving experiences, and recent caregivers with and without previous caregiving experiences, were also created.

Table 1: Temporal Caregiving Experience Categories

	Total Sample (n = 3288)		Men (n = 1481)		Women (n = 1807)	
	n	% of sample	n	% of men	n	% of women
Total Caregivers	1172	35.64%	414	27.95%	758	41.95%
Current Caregivers	264	8.03%	80	5.40%	184	10.18%
(without previous CG Exp)	169	5.14%	59	3.98%	110	6.09%
(with previous CG Exp)	95	2.89%	21	1.42%	74	4.10%
Recent Caregivers	169	5.14%	53	3.58%	116	6.42%
(without previous CG Exp)	94	2.86%	36	2.43%	58	3.21%
(with Previous CG Exp)	75	2.28%	17	1.15%	58	3.21%
Distant Past Caregivers	739	22.48%	281	18.97%	458	25.35%
Non-Caregivers	2,116	64.36%	1,067	72.05%	1,049	58.05%
Parents (not mutually exclusive)	1,413	42.97%	634	42.81%	779	43.11%

The majority of the sample consisted of non-caregivers (64.36 percent). Almost three-quarters of the men in the study were non-caregivers as compared to less than 60 percent of women. Eight percent of the sample were currently providing care to someone, five percent of the sample had recently ended a caregiving role, and more than 22 percent of the sample had provided care to someone more than 12 months prior to the study. Of current caregivers, almost 36 percent had provided care previously while among recent caregivers, over 44 percent had provided care previously. Among this sample, almost 28 percent of men and 42 percent of women reported ever providing care to another person for a period of at least one month during their life course.

Control variables.

Age, race, marital status, educational status, income, and employment status serve as controls across all caregiving models. Age is related to levels of depression with those in the age range of 40 and 50 years being more prone to depression relative to other age cohorts (Christophe and Stein 2021; Mazure and Maciejewski 2003). Although there are not significant differences in depression severity between Hispanic, non-Hispanic White, and non-Hispanic Black racial groups, there are statistically different depression outcomes for non-Hispanic Asians (Brody 2018). Marital status has been significantly correlated with depression; therefore, it is

important to include this as a control in the regressions (Bulloch et al. 2017). Education and employment status are intertwined categories that can impact income and socioeconomic levels, and income has been significantly correlated with levels of depression (Brody 2018). In order to isolate caregiving as an independent predictor of levels of depression, controlling for race, marital status, educational status, income, and employment status is necessary. Gender was used as a control or a moderating factor in the various models, as women are twice as likely to experience depression relative to men (Brody 2018). Additional variables were originally investigated as controls including sexual orientation and more detailed levels of employment, but due to lack of statistical power or significant differences in these variables in fitting the model, these variables were ultimately dropped as controls.

Age is a continuous variable as recorded in the MIDUS study. Race was recoded to match the following categories: White, Black, Asian, Native American/Alaskan Native/Pacific Islander/Native Hawaiian, and Other. White participants served as the reference group in the models. Although MIDUS asked participants about Latinx ethnicity, controlling for Latino/Latina participants within the models did not contribute significantly to the regression and was omitted from the analysis. Marital status was recoded with the following categories: Married, Divorced/Separated, Widowed, Never Married, and Cohabiting. Each of these categories were coded as a dichotomous variable, with cohabitation recoded as to be mutually exclusive of all the other marital categories. Those who were married at Wave 3 served as the reference group for marital status. Educational attainment was recoded from the original 12 categories in Wave 3 to six categories within the regression. These categories included: 1) Less than high school, 2) GED/High school diploma, 3) Some college/2-year degree, 4) Bachelor's/4-year degree, 5) Master's degree, and 6) Ph.D. or professional degree. After running linear

coefficient tests, Master's and Ph.D./professional degrees were not significantly different from each other, thus I combined these into a single educational attainment category of Professional/Master's/Ph.D. (Fox 2015). Each of these categories was coded as a dichotomous variable with those having a high school degree or less serving as the referent group.

Household income was recorded as a continuous variable within the MIDUS study with a range between \$0 and \$300,000, but this included 581 respondents who declined to provide income data. In order to retain those who declined to disclose their income within the regression, I recoded this variable as a categorical variable based on quartile cut points for those with valid responses and added another category for missing income data. The following five categories represent the household income of this sample: 1) missing household income data; 2) first quartile of household income (\$0 to \$34,000); 3) second quartile of income (\$34,001 to \$87,999); 4) third quartile of household income (\$88,000 to \$121,299); and 5) fourth quartile of income (over \$121,300). The referent group for income are those within the second quartile as those within this income level are not at increased risk for depression as compared to those in the first quartile (Brody 2018). Those in the third and fourth quartiles tend to have reduced risk of depression. The MIDUS dataset recorded a thorough series of questions regarding employment status, typical number of hours worked per week, self-employment status, and sick leave or disability leave status. I collapsed thirteen employment-related questions into four categories: 1) employed, 2) unemployed, 3) not in the labor market, and 4) other employment. Those who identified as currently working or self-employed regardless of number of hours worked were coded as employed. Those who identified as unemployed or laid off were coded as unemployed. Those who identified as retired, disabled, a homemaker, on maternity or sick leave, permanently disabled, or a student were recoded as not being in the labor market. Finally, those who specified

other types of work within the telephone interview were coded as “other employment.” For other employment, responses included providing care to a family member, volunteering, apprenticing, working as an unpaid intern, and seasonal work (Ryff et al. 2019).

Analytic Approach

Despite transformation attempts to normalize the distribution of depressive symptoms, it became evident that a non-linear regression was required. Breusch-Pagan tests were run on all six models to determine if the models violated OLS assumptions of homoskedasticity and all six models reflected heteroskedastic errors, thus ordinary least squares were not the best option for fitting the data ($p < 2.2e-16$, $\alpha = 0.05$) (Breusch and Pagan 1979). Given the heteroskedastic nature of the data, a generalized ordered probit regression (GOPR) was indicated as the most appropriate fit for the data (Johnston, McDonald, and Quist 2020; Williams 2016). The generalized ordered probit model is an adaption of the ordered probit model for ordinal, discrete dependent variables in which the odds/parallel lines assumptions are not met (Williams 2016). This means that the model relaxes the assumption that the threshold for a respondent to move between one and two symptoms of depression is the same as the threshold for a respondent to move between two and three symptoms of depression (which would represent a linear process). By relaxing these assumptions, it allows for greater flexibility and accuracy in estimating effects.

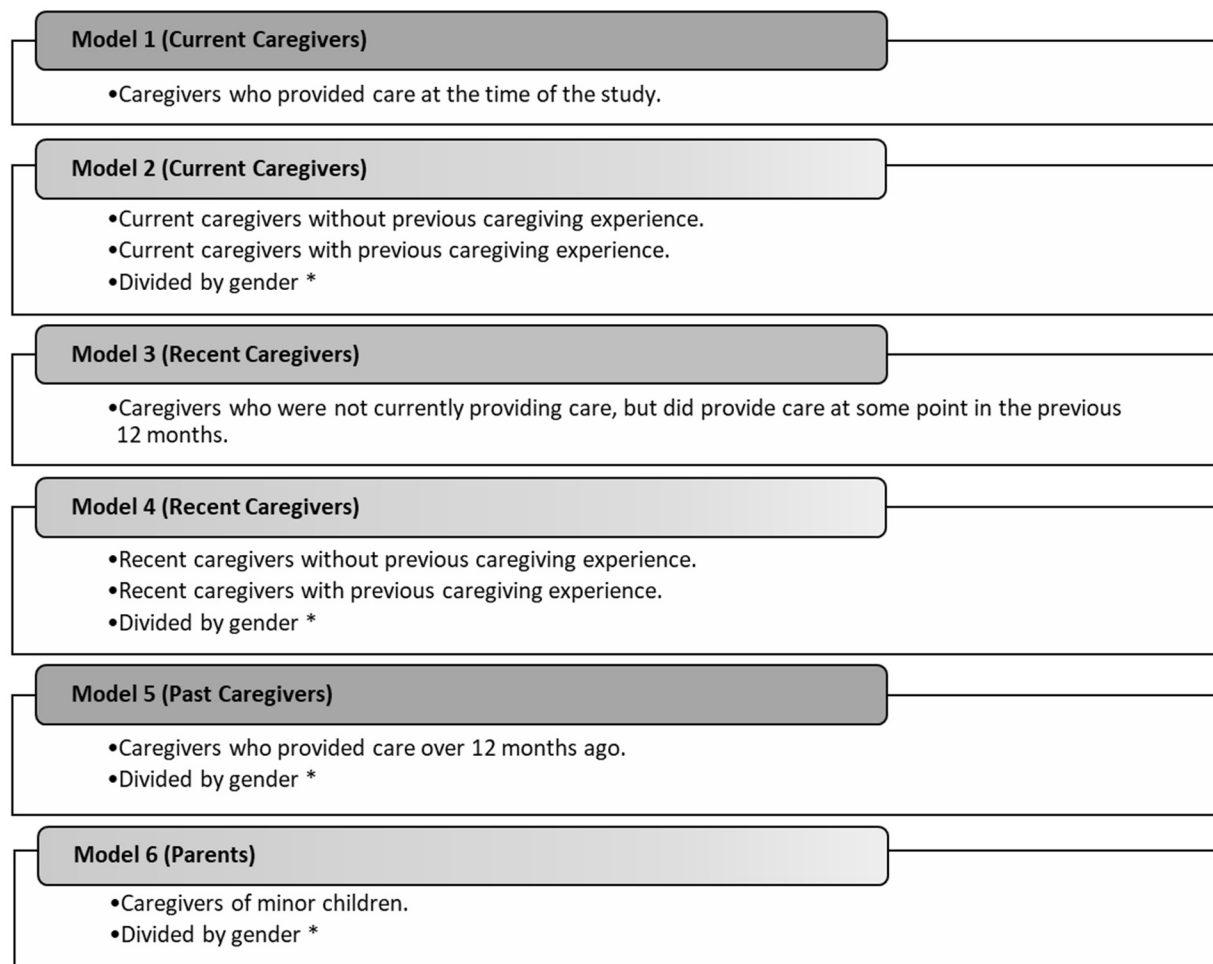
Modeling the Data

Six models were created to best analyze how each caregiving experience was related to depressive symptoms. The models were created to take researchers from our current understanding of the mental health outcomes for caregivers (the cross-sectional snapshot in time), through a retrospective look on caregiving experiences based on the timing of experiences. By dividing the models in this way, it helps us understand how cross-sectional outcomes have a

nuanced story to tell when caregiving history and timing are considered. I ran two sets of regressions to expand on the story of caregiving throughout the life course. The first set of regressions (Regression Set 1) was designed to look at caregivers based on temporal care experiences regardless of gender. Gender, age, employment status, marital status, income level, race, and educational level served as the control variables in these regressions. In order to understand gender differences between each of the temporal caregiving groups, I ran a second set of regressions (Regression Set 2) that incorporated gender into each of the temporal caregiving groups in the models. Since gender was included as an interaction with the independent variables in the second regression models, it was removed as a control variable. Age, employment status, marital status, income level, race, and educational level continued to serve as the control variables within this second regression. Figure 3 provides a visual representation of the construction of the models:

Figure 3: Regression Modeling Construction

* Refers *only* to the second regression (divided by gender.)



In both sets of regressions, Model 1 serves as the cross-sectional model measuring current caregiving and its impact on depressive symptomatology net control variables. The reference group for Model 1 is everyone who is not currently providing care for someone else, including those who are non-caregivers. In the first regression set, Model 2 takes this caregiver experience (current caregiving) and divides it between caregivers who have had previous caregiving experiences in their lives and those who have not. In the second regression set, Model 2 adds gender between each of these temporal caregiving experiences for current caregivers to compare how male and female caregivers differ in each group. The reference group, again, is everyone

who is not currently providing care to another person. Model 3 for both regression sets brings in caregivers who have provided care within the previous twelve months but who are not currently providing care. This is an important caregiving experience to consider given that those who have recently provided care may have ended their caregiver experience because the care recipient moved into a higher or more formal level of care, may no longer need care, or may have died.

In the first regression set, Model 4 divides recent caregivers by those who had prior caregiving experiences before their most recent caregiving experience and those who have not, while the second regression set adds gender to each of the temporal caregiving experiences, similar to the modeling process for current caregivers. The reference group in Model 4 is everyone who has not provided care for another person within the past 12 months. Model 5 in both regressions brings in caregivers who have had more than 12 months elapse since their transition out of a caregiving role, while the second regression brings in gender distinctions into this model. Model 6 brings in parenting as another caregiving experience in each regression sets but not mutually exclusive from the other caregiving categories. Thus, some respondents may be *both* caring for a minor child and caring for an aging or ill parent or spouse. Within the second regression set, Model 6 is further divided by gender differences in parenting to better understand the difference between mothering and fathering and depressive symptomatology.

RESULTS

Table 2 outlines the demographic makeup of the study sample (N = 3,288). The age range of respondents was between 40 and 94 years. The mean age was 65.07 with a standard deviation of 11.38 years. Females represented 45.04 percent of the sample with the majority of the respondents being White (91.88 percent). Black respondents made up 3.8 percent of the sample, Native Americans, Alaskan Natives, and Pacific Islander Natives made up 1.49 percent of the

sample, Asian Americans made up 0.52 percent, and other races or mixed races made up 2.31 percent of the sample.

Table 2: Descriptive Statistics (MIDUS Wave 3)

	Total Sample			Men			Women		
	n	% or Mean	Range	n	% or Mean	Range	n	% or Mean	Range
Age at Wave 3 (SD)	3,288	65.07 (11.38)	40-94	1,481	65.09 (11.24)	43-94	1,807	65.05 (11.49)	40-94
Race									
White	3,021	91.88%		1,371	92.57%		1,650	91.31%	
Black	125	3.80%		46	3.11%		79	4.37%	
Asian	17	0.52%		5	0.34%		12	0.66%	
Native Amer./ Pac. Islander	49	1.49%		23	1.55%		26	1.44%	
Other	76	2.31%		36	2.43%		40	2.21%	
Marital Status									
Married	2,207	67.12%		1,128	76.16%		1,079	59.71%	
Divorced/Separated	409	12.44%		133	8.98%		276	15.27%	
Widowed	347	10.55%		69	4.66%		278	15.38%	
Never Married	206	6.27%		90	6.08%		116	6.42%	
Cohabitating	115	3.50%		60	4.05%		55	3.04%	
Educational Status									
Less than HS	181	5.50%		65	4.39%		116	6.42%	
HS/GED Equiv	783	23.81%		314	21.20%		469	25.95%	
2-year degr	951	28.92%		388	26.20%		563	31.16%	
4-year degr	793	24.12%		413	27.89%		380	21.03%	
Graduate degr	580	17.64%		301	20.32%		279	15.44%	
Income (\$D)		\$87,950 (67.59)	\$0- \$300,000		\$100,340 (69.72)	\$0- \$300,000		\$77,580 (64.54)	\$0- \$300,000
Missing/Declined	581	17.67%		247	16.68%		334	18.48%	
First Quartile (\$0 to \$34,000)	679	20.65%		208	14.04%		471	26.07%	
Second Quartile (\$34,001 to \$87,999)	972	29.56%		467	31.53%		505	27.95%	
Third Quartile (\$88,000 to \$121, 299)	384	11.68%		182	12.83%		202	11.18%	
Fourth Quartile (over \$121,300)	672	20.44%		377	25.46%		295	16.33%	
Employment Status									
Employed (Full- or Part-time)	1712	52.07%		861	58.14%		851	47.09%	
Unemployed	56	1.70%		24	1.62%		32	1.77%	
Not in Labor Market	838	25.49%		330	22.28%		508	28.11%	
Other Employment	63	1.92%		22	1.49%		41	2.27%	

The majority of respondents were married (67.12 percent), while divorced or separated respondents made up 14.69 percent of the sample. Eleven percent were widowed, 7.06 percent were never married, and 3.56 percent of the respondents were cohabitating but not married. Most of the respondents had some college or held a 2-year or 4-year degree while 23.81 percent held a high school degree or fewer years of education. Twelve and a half percent of the sample held a master's degree and less than six percent held a Ph.D. or doctorate degree. Over half of the sample were employed while over a quarter were not in the labor market. Less than two percent of the respondents were unemployed. The maximum household income was \$300,000 with 17.67 percent of respondents declining to report their annual household income.

Regression Set 1: Depression Based on Control Variables

A baseline regression was run to see how demographic characteristics were related to depressive symptoms; these characteristics served as the control variables for both GOPRs run with temporal caregiving categories. Table 3 outlines the regression results for these control variables.

Table 3: Generalized Ordered Probit Regression of Demographic Control Variables on Depression Severity

Depression Severity by Controls				
	Estimate	Std Err	t value	r(> t)
Gender (Female)	0.209***	0.060	3.467	0.001
Age	-1.612e-4***	2.310e-5	-6.978	3.005e-12
Unemployed	0.429*	0.176	2.446	0.014
Not in Labor Market	0.014	0.069	0.202	0.840
Never Married	0.261*	0.112	2.326	0.020
Cohabiting	0.198	0.147	1.349	0.177
Divorced/ Separated	0.288***	0.084	3.414	0.001
Widowed	0.368***	0.099	3.723	1.968e-4
Income- Missing	0.056	0.087	0.649	0.516
First Quartile (\$0 to \$34,000)	0.346***	0.082	4.237	2.265e-05
Third Quartile (\$88,000 to \$121, 299)	-0.105	0.105	-0.999	0.318
Fourth Quartile (over \$121,300)	-0.176 .	0.093	-1.893	0.058
Black	-0.032	0.139	-0.231	0.817
Native American/ Pac. Islander	-0.605 .	0.326	-1.856	0.063
Asian	-0.284	0.450	-0.632	0.527
Other Race	-0.140	0.204	-0.688	0.491
2-year degree (Associate's)	0.040	0.073	0.551	0.582
4-year degree (Bachelor's)	-0.061	0.084	-0.723	0.470
Graduate degree (Master's/Ph.D./Prof)	-0.062	0.095	-0.656	0.512
Observations			3288	
Bruesch-Pagan (p-value)			167.25 (p < 2.2e-16)	
Log-Likelihood			-1818.998	
No. Iterations			9	
McFadden's R2			0.04418609	
AIC			3689.996	

Note:

. p < 0.1; * p < 0.05; ** p < 0.01, *** p < 0.001

The regression indicates that being female is significantly associated with higher symptoms of depression as compared to men. Aging is inversely associated with symptoms of depression

meaning that as one ages it is expected that symptoms of depression will reduce ($p < .001$). Those who are unemployed are more likely to experience higher symptoms of depression as compared to those who are employed ($p = .014$), but those who are not in the labor force do not show a statistically significant difference in depressive symptoms than those who are employed ($p = .84$). Those who are never married, divorced, separated, or widowed are more likely to experience higher symptoms of depression as compared to those who are married ($p < .02$), but statistically significant differences between those who were married and cohabiting were not observed ($p = .177$). Being in the first quartile of income (\$0 to \$34,000) is associated with higher symptoms of depression as compared to those in the second quartile earnings (\$34,001 to \$87,999) ($p < .001$). No other statistically significant differences in depression according to household income level were observed. Minority/marginalized racial distinctions were not found to be significantly different than Whites among this sample, nor were educational levels above high school as compared to those with educational attainment up to the high school level.

Regression Set 1: Depression Based on Temporal Caregiving Experiences

The first generalized ordered probit regression (GOPR) was built to analyze my first research question and hypothesis asking if experiencing multiple caregiving events over the life course impacts caregiver well-being long-term relative to non-caregivers. Table 4 outlines the results.

Table 4: GOPR 1- Depression Severity by Temporal Caregiver

Depression Severity by Temporal Caregiver						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<i>n</i>	Estimate (Std Err)	Estimate (Std Err)	Estimate (Std Err)	Estimate (Std Err)	Estimate (Std Err)	Estimate (Std Err)
Current Caregivers (All Experience) 264	0.154 (0.098)					
No Previous Experience 169	0.028 (0.128)	0.028 (0.128)	0.069 (0.128)	0.069 (0.128)	0.147 (0.130)	0.147 (0.130)
Previous Experience 95	0.335 (0.146) *	0.335 (0.146) *	0.378 (0.146) **	0.378 (0.146) **	0.451 (0.148) **	0.458 (0.148) **
Recent Caregivers (All Experience) 169			0.492 (0.107) ***			
No Previous Experience 94				0.277 (0.153)	0.359 (0.154) *	0.357 (0.154) *
Previous Experience 75				0.705 (0.147) ***	0.795 (0.148) ***	0.793 (0.148) ***
Past Caregivers 739					0.266 (0.069) ***	0.263 (0.069) ***
Parents 1,413						-0.065 (0.071)
Observations	3288	3288	3288	3288	3288	3288
Bruesch-Pagan (p-value)	169.29 (p < 2.2e-16)	173.15 (p < 2.2e-16)	186.03 (p < 2.2e-16)	189.99 (p < 2.2e-16)	200.62 (p < 2.2e-16)	201.11 (p < 2.2e-16)
Log-Likelihood	-1817.789	-1816.478	-1806.456	-1804.295	-1796.975	-1796.559
No. Iterations	9	9	9	9	9	9
McFadden's R2	0.045	0.046	0.051	0.052	0.056	0.056
AIC	3689.578	3688.957	3670.913	3668.589	3655.951	3657.119

Notes:

. p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.001

Controlled for gender, age, employment status, marital status, income level, race, and educational level.

Controlling for gender, age, employment status, marital status, income, race, and education, the first hypothesis was supported. Beginning with Model 1, current caregivers (as compared to those who were not currently or had never provided care to someone else), are not significantly associated with depressive symptoms. However, once previous caregiving experiences were factored into the model (Model 2), a statistically significant relationship between depressive symptoms and current caregivers who had provided care previously occurred ($\beta = 0.335$, $p < 0.05$). Had I stopped the analysis without accounting for previous caregiving experiences among current caregivers, vital information would have been lost.

Model 3 brings in caregivers who were not currently providing care but had provided care to another within the 12 months prior to the study. The results indicate that this group has a significant association with higher symptoms of depression ($\beta = 0.492$, $p < 0.001$). Bringing in prior caregiving experiences for recent caregivers (prior to their most recent caregiving role), results indicate that previous caregiving experiences are driving the relationship with depressive symptoms among this caregiving group ($\beta = 0.705$, $p < 0.001$). Those who provided care for someone else more than a year ago (Model 5) are also significantly related to higher symptoms of depression ($\beta = 0.266$, $p < 0.001$).

As additional temporal caregiving experiences were brought into the model, the explanatory power of the model increased resulting in significant findings across previously non-significant temporal caregiving categories. For example, current caregivers with previous experience were found to be significantly associated with higher symptoms of depression at the 95 percent confidence level in Models 2 and 3. Yet, when recent caregivers with and without previous caregiving experiences were calculated into the model, the statistical significance for current caregivers with previous caregiving experiences increased to the 99 percent confidence

level in Models 4, 5, and 6. Furthermore, in Model 5, bringing in past caregivers (those who provided care for someone over a year ago), increased statistical significance for recent caregivers without caregiving experiences. Model 6 brings in parents of minor children as another caregiving category, yet no statistically significant relationship was found between this caregiving category and depressive symptoms.

Regression Set 2: Depression Based on Gendered Temporal Caregiving Experiences

While the findings in the first regression set examined differences in symptoms of depression among caregivers as compared to non-caregivers, it does not investigate how these results differ by gender. The second regression set takes each of the previous temporal caregiving categories and separates them further by male and female gender distinctions. Table 5 outlines the results of this regression set.

Table 5: GOPR 2- Depression Severity by Temporal Caregiver Types & Gender

Depression Severity by Temporal Caregiver & Gender						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	<i>n</i>	<i>Estimate (Std Err)</i>	<i>Estimate (Std Err)</i>	<i>Estimate (Std Err)</i>	<i>Estimate (Std Err)</i>	<i>Estimate (Std Err)</i>
Current Caregivers (All Exp & Genders)	264	0.182 (0.098) .				
No Previous CG Exp (Men)	59	0.154 (0.210)	0.192 (0.210)	0.191 (0.210)	0.264 (0.211)	0.342 (0.212)
No Previous CG Exp (Women)	110	-0.010 (0.157)	0.032 (0.157)	0.032 (0.157)	0.115 (0.159)	0.063 (0.160)
Previous CG Exp (Men)	21	0.286 (0.328)	0.325 (0.328)	0.321 (0.328)	0.401 (0.328)	0.439 (0.328) *
Previous CG Exp (Women)	74	0.397 (0.161) *	0.436 (0.162) **	0.438 (0.162) **	0.522 (0.163) **	0.466 (0.164) **
Recent Caregivers (All Exp & Genders)	169		0.515 (0.107) ***			
No Previous CG Exp (Men)	36		0.001 (0.279)	0.001 (0.279)	0.089 (0.280)	0.137 (0.279)
No Previous CG Exp (Women)	58		0.430 (0.182) *	0.430 (0.182) *	0.514 (0.183) **	0.456 (0.184) *
Previous CG Exp (Men)	17		0.598 (0.318) .	0.598 (0.318) .	0.676 (0.319) *	0.700 (0.320) *
Previous CG Exp (Women)	58		0.771 (0.163) ***	0.771 (0.163) ***	0.866 (0.165) ***	0.816 (0.166) ***
Past Caregivers (All Genders)	739					
Past Caregivers (Men)	281			0.268 (0.103) **	0.268 (0.103) **	0.316 (0.105) **
Past Caregivers (Women)	458			0.285 (0.080) ***	0.285 (0.080) ***	0.238 (0.082) **
Parents (All Genders)	1,413					
Fathers	634					-0.227 (0.095) *
Mothers	779					0.036 (0.080)
Observations		3288	3288	3288	3288	3288
Bruesch-Pagan (p-value)		155.87 (2.2e-16)	177.63 (2.2e-16)	182.25 (2.2e-16)	195.4 (2.2e-16)	207.69 (2.2e-16)
Log-Likelihood		-1823.381	-1821.63	-1810.603	-1807.299	-1798.821
No. Iterations		9	9	9	9	9
McFadden's R2		0.042	0.049	0.050	0.055	0.057
AIC		3698.763	3701.259	3681.207	3680.599	3669.643

Notes:

. p < 0.1; * p < 0.05; ** p < 0.01, *** p < 0.001

Controlled for age, employment status, marital status, income level, race, and educational level.

The findings from the first regression set continue to hold for the second generalized ordered probit regression (GOPR) with those who provided care previously showing more association with higher depressive symptoms than those who had not provided care for others in the past. Among current caregivers who did not have previous caregiving experience, there is no significant association with higher depressive symptoms for either men or women as compared to others who have either not provided care in the past or have provided care but not currently (Model 2). Yet among current caregivers who had provided caregiving previously in their lives, female caregivers are associated with higher symptoms of depression (Model 2, $\beta = 0.397$, $p < 0.05$) relative to non-current and non-caregivers of both genders, whereas male caregivers with previous caregiving experience are not.

Model 3 brings in recent caregivers as a category which increases the explanatory power of the model and increases the statistically significant association of current female caregivers with previous caregiving experience to the 99 percent confidence level, as the reference group now shifts to non-caregivers and caregivers who have not provided care within the past 12 months. Model 4 expands on the recent caregiving category by dividing the group by previous caregiving experiences and gender. The picture of recent caregivers with previous experience broadens in this model with recent caregiving women without previous caregiving experience significantly associated with higher symptoms of depression ($\beta = 0.430$, $p < 0.05$) and recent caregiving women with previous caregiving experience positively associated with higher depressive symptoms ($\beta = 0.771$, $p < 0.001$). Men in the recent caregiving category in Model 4 do not show a statistically significant relationship with depressive symptoms. Compared to caregivers who have provided care more than 12 months ago and non-caregivers, the model indicates that female caregivers are associated with higher symptoms of depression.

Model 5 brings in caregivers who provided care more than 12 months ago, and both male and female caregivers in this temporal category are significantly associated with higher symptoms of depression (Model 6, $\beta_{\text{men}} = 0.268$, $p < 0.01$; $\beta_{\text{women}} = 0.285$, $p < 0.001$). Model 6 analyzes gender differences within parenting and depressive symptoms showing that being a father is significantly associated with an inverse relationship in depressive symptoms while being a mother is not related to depressive symptoms ($\beta_{\text{men}} = -0.227$, $p < 0.05$; $\beta_{\text{women}} = 0.036$, $p > 0.10$).

Once all caregiving categories and gender distinctions are included in the regression in Model 6, a fuller picture emerges about how caregivers fare in terms of depressive symptomatology. McFadden's R-squared shows that this final model accounts for 5.7 percent of depressive symptomatology among this sample. Among current caregivers, only caregiving women who have had previous caregiving experiences are significantly associated with higher depressive symptomatology ($\beta = 0.466$, $p < 0.01$). Among recent caregivers, women without previous caregiving experiences are associated with higher symptoms of depression ($\beta = 0.456$, $p < 0.05$) and female caregivers with prior caregiving experience(s) are also significantly associated with higher symptoms of depression ($\beta = 0.816$, $p < 0.001$). Within this model, male caregivers with previous experience also emerge as being significantly associated with higher depressive symptoms ($\beta = 0.701$, $p < 0.05$). Regardless of gender, past caregivers are more likely to experience higher symptoms of depression ($\beta_{\text{men}} = 0.316$, $p < 0.01$; $\beta_{\text{women}} = 0.238$, $p < 0.01$). All of these findings among caregivers use non-caregivers as a reference group meaning that caregivers with previous caregiving experiences are more likely to be associated with higher symptoms of depression than non-caregivers.

Marginal Effects for Regression Set 2

The GOPR allows researchers to assess the marginal effects, or the probability that certain independent variables will be associated with a discrete dependent variable outcome (Williams 2016). In Model 6, the marginal effects test was conducted, and Table 6 outlines the results. Marginal effects are displayed only for Model 6 given that this model accounts for the fullest explanation of depressive symptoms relative to caregiving among all six models (McFadden's $R^2 = 5.7$ percent) (Johnston et al. 2020; Williams 2016).

Table 6: Probit Marginal Effects by Temporal Caregiver & Gender (Model 6 Only)

Marginal Effects by Temporal Caregiver & Gender- Model 6								
Model 8								
	Depr = 0	Depr = 1	Depr = 2	Depr = 3	Depr = 4	Depr = 5	Depr = 6	Depr = 7
Current Caregivers (All)								
No Previous CG Exp (Men)	-0.075	0.0008	0.004	0.006	0.010	0.017	0.022	0.016
No Previous CG Exp (Women)	-0.012	0.0001	0.0007	0.001	0.002	0.003	0.003	0.002
Previous CG Exp (Men)	-0.102	0.001	0.005	0.007	0.013	0.022	0.030	0.023
Previous CG Exp (Women)	-0.109 **	0.002 *	0.005 **	0.008 **	0.014 **	0.024 **	0.033 **	0.025 *
Recent Caregivers (All)								
No Previous CG Exp (Men)	-0.027	0.0003	0.001	0.002	0.004	0.006	0.008	0.005
No Previous CG Exp (Women)	-0.106 **	0.001 *	0.005 **	0.007 **	0.013 **	0.023 **	0.032 *	0.024 *
Previous CG Exp (Men)	-0.183 *	0.002 *	0.007 **	0.011 **	0.021 **	0.038 *	0.056	0.049
Previous CG Exp (Women)	-0.222 ***	0.002 **	0.008 ***	0.013 ***	0.024 ***	0.044 ***	0.068 ***	0.063 ***
Past Caregivers (All)								
Past Caregivers (Men)	-0.067 ***	0.0007 *	0.003 **	0.005 ***	0.009 ***	0.015 ***	0.020 **	0.014 **
Past Caregivers (Women)	-0.048 ***	0.0006 *	0.003 **	0.004 **	0.007 ***	0.011 ***	0.014 **	0.009 **
Parents (All)								
Fathers	0.038 ***	-0.0005 *	-0.002 **	-0.003 **	-0.006 **	-0.009 **	-0.011 ***	-0.006 ***
Mothers	-0.006	0.00008	0.0004	0.0005	0.0009	0.002	0.002	0.001
Observations	3288	3288	3288	3288	3288	3288	3288	3288

Note:

*p < 0.1; ** p < 0.05; *** p < 0.01

Controlled for age, employment status, marital status, income level, race, and educational level.

The results of the marginal effects mirror the patterns of significance found within the generalized ordered probit analyses. Women who were providing care at the time of the study and had previous caregiving experiences during the life course are 10.9 percent less likely to experience no symptoms of depression, and 9.6 percent more likely to experience four or more symptoms of depression over a two-week period. This supports my third hypothesis that states that women with previous caregiving experiences are more likely to be associated with higher symptoms of depression than non-caregiving men or women.

Women who were not currently caregiving but had provided care within 12 months prior to the study and did not have previous caregiving experiences were 10.6 percent less likely to experience no depressive symptoms, and 9.2 percent more likely to experience four or more symptoms of depression over a two-week period. For women who provided care within the 12-month period prior to the study and had at least one other caregiving experience during their life, they are 22.2 percent less likely to have no symptoms of depression and 19.9 percent more likely to have four or more symptoms of depression over a two-week period. Men who provided care within 12 months prior to the study are 18.3 percent less likely to experience no symptoms of depression, and 16.4 percent more likely to experience four or more symptoms of depression over a two-week period. Caregivers who provided care more than 12 months prior to the Wave 3 study were 6.7 percent less likely (for men) and 4.8 less likely (for women) to experience no symptoms of depression. For this group, men were 5.8 percent more likely, and women were 4.1 percent more likely to experience four or more depressive symptoms over a two-week period. While the findings in the first two regressions explain how temporal caregiving experiences impact depressive symptomatology, it does not clarify if caregiving men and women are significantly different from each other.

The gendered caregiving categories in Regression Set 2 only tell us if these groups are different than the reference group, not if there are differences between the genders in each caregiving group. In order to test gender differences among each caregiving group, I ran linear coefficient tests (Fox 2015). The null hypotheses in each of these coefficient tests indicate that there is *no difference* between male caregivers and female caregivers (H_0 : male caregivers = female caregivers) in each of the temporal caregiver categories. If the test indicated a statistically significant p-value, then the null hypothesis could be rejected indicating that there is a statistically significant difference between the genders in each group. The results of the coefficient test are outlined in Table 7.

Table 7: Inter-gender Coefficient Differences

Inter-gender Coefficient Differences Model 6										
	n	Estimate/ Std Err	t value/ Pr(> t)	Res. Df	RSS	Df	Sum of Sq	F	Pr(>F)	
Current Caregivers (All)										
H ₀ : Non-Previous Women = Non-Previous Men	110	0.063/0.160	0.392/0.695	3257.000	8844.000	1.000	2.633	0.970	0.325	
Non-Previous Women										
Non-Previous Men	59	0.342/0.212	1.611/0.107							
H ₀ : Previous Women = Previous Men	74	0.466/0.164 **	0.466/0.1643 **	3257.000	8844.000	1.000	0.093	0.034	0.853	
Previous Women										
Previous Men	21	0.439/0.328	1.337/0.181							
Recent Caregivers (All)										
H ₀ : Non-Previous Women = Non-Previous Men	58	0.456/0.184*	2.477/0.013	3257.000	8844.000	1.000	8.401	3.094	0.079 .	
Non-Previous Women										
Non-Previous Men	36	0.137/0.279	0.490/0.624							
H ₀ : Previous Women = Previous Men	58	0.816/0.166 ***	4.914/8.922e-07	3257.000	8844.000	1.000	1.911	0.704	0.402	
Previous Women										
Previous Men	17	0.700/0.320 *	2.187/0.029							
Past Caregivers (All)										
H ₀ : Past CG Women = Past CG Men	458	0.238/0.082 **	2.913/0.004	3257.000	8844.000	1.000	0.372	0.137	0.711	
Past CG Women										
Past CG Men	281	0.316/0.105 **	3.008/0.003							
Parents (All)										
H ₀ : Mothers = Fathers	779	0.036/0.080	0.446/0.656	3257.000	8844.000	1.000	22.458	8.271	0.004 **	
Mothers										
Fathers	634	-0.227/0.095*	-2.406/0.016							

Notes:

. p < 0.1, * p < 0.05; ** p < 0.01, *** p < 0.001

Contradictory to my second hypothesis, the only statistically significant gender difference in depressive symptomatology was in the final caregiving category of parents (H_0 : Mothers = Fathers, $p < 0.01$). Thus, based on this sample, there does not seem to be a statistically significant difference between the depressive symptomatology of caregiving men and women regardless of previous caregiving experiences.

In order to assess how women in each caregiving category compare based on their previous caregiving experiences, I ran linear coefficient tests between female caregivers in each temporal category (Fox 2015). Table 8 outlines these results.

Table 8: Intra-gender Coefficient Differences

Intra-gender Coefficient Differences Model 6									
	n	Estimate/ Std Err	t value/ Pr(> t)	Res. Df	RSS	Df	Sum of Sq	F	Pr(>F)
Current Caregivers (All)									
H ₀ : Non-Previous Women = Previous Women	110	0.063/ 0.160	0.392/ 0.695	3257	8844	1	9.435	3.475	0.062.
Non-Previous Women	74	0.466/ 0.1643 **	2.840/ 0.005						
Recent Caregivers (All)									
H ₀ : Non-Previous Women = Previous Women	58	0.456/ 0.184 *	2.477/ 0.013	3257	8844	1	10.932	4.026	0.045 *
Non-Previous Women	58	0.816/ 0.166 ***	4.914/ 8.922e-07						
Current Caregivers (All)									
H ₀ : Non-Previous Men = Previous Men	59	0.342/ 0.212	1.611/ 0.107	3257	8844	1	0.226	0.083	0.773
Non-Previous Men	21	0.439/ 0.328	1.337/ 0.181						
Recent Caregivers (All)									
H ₀ : Non-Previous Men = Previous Men	36	0.137/ 0.279	0.490/ 0.624	3257	8844	1	8.314	3.062	0.080.
Non-Previous Men	17	0.700/ 0.320 *	2.187/ 0.029						

Notes:

. p < 0.1; * p < 0.05; ** p < 0.01, *** p < 0.001

Between recent caregiving women with and without prior caregiving experiences, the null hypothesis is rejected meaning that there is a statistically significant difference between these two caregiving groups ($p < 0.05$). There were no statistically significant differences between women in the current caregiving category nor men in the current caregiving and recent caregiving categories.

DISCUSSION

The results of this study indicate that holding multiple caregiving roles over the life course is associated with higher depressive symptomatology, particularly for female caregivers, relative to non-caregiving adults. Caregivers who were providing care for another person at the time of the study and had prior caregiving experiences earlier in the life course, were positively related to higher levels of depression. Among each of the temporal caregiver categories, regardless of the amount of time that had elapsed from the transition out of the caregiving experience, those who have had more than one caregiving experience throughout their life were positively associated with higher symptoms of depression. These findings support the first and third hypotheses in that as caregiving experiences increase over the life course, caregivers will experience higher symptoms of depression as compared to non-caregiving adults. These results contradict findings by Haley and Perkins (2004) who found that advanced caregiving experience and expertise serves as a protective element against caregiver stress and strain.

Despite this finding being more pronounced for female caregivers relative to non-caregivers, coefficient tests did not find a statistically significant difference between male and female caregiver depressive symptomatology regardless of previous caregiving experiences. Therefore, my second hypothesis which states that caregiving women will report higher symptoms of depression than caregiving men, was not supported in this model. The first

hypothesis was supported in that as caregiving experiences increased, the significant relationships among caregivers without previous caregiving experiences and depressive symptomatology weakened, but intra-gender coefficient tests between caregiving women with and without prior caregiving experiences failed to show a statistically significant difference except in the recent caregiving category. It is possible that for recent caregivers, other life transitions such as the transition of the care recipient to a long-term care facility, formal care setting, or death may be reflected within the resulting depressive symptomatology and future research should explore this possibility. It is also possible that other unexplored factors contribute to higher rates of depressive symptomatology in women as supported by the findings that women report higher symptoms of depression than men regardless of caregiving experience (Brody 2018).

For caregivers who served in caregiving roles in the more distant past (more than 12 months prior to the study), significance levels align for both genders in that both are still positively related to higher levels of depression at the 99 percent significance level. This could reflect the period of time it may take to process and make sense of an important transition of the care recipient into long-term care or the death of a care recipient. As the time between current experiences of depression and one's caregiving role increases, the gender gap converges so that both men and women are similarly likely to experience the stress and strain associated with one's caregiving role. This indicates that the long-term impact of serving as a caregiver has similar effects for both genders, but the acute impact of multiple caregiving experiences over one's life course, tends to impact women at a more substantial level than non-caregivers.

One of the aims of this study was to better understand caregiving in all its forms, including the experiences of parents who care for minor children. The results support findings

from other studies that men and women experience stress related to parenting differently (Bianchi 2011; McDonnell et al. 2019; Musick et al. 2016). Fathering is associated with a significant inverse relationship with depression while mothering is not. One reason for not finding parenting as significantly associated with depression in mothers may be that parenting as a caregiving experience is somewhat different than caring for an aging parent, spouse, or other chronically ill or disabled family member. Parents typically plan for and expect to care for a child, and also expect an end to that caregiving experience that results in a sense of satisfaction that one's child has launched as an independent and self-sufficient contributor to society. This stands in contrast to caring for aging parents or spouses in which it is not necessarily a role one eagerly anticipates or plans. Additionally, transitions into parenting and into caring for aging or ill parents or spouses can hold different emotional expectations. Parents expect to see the fruit of their labor resulting in the launching of their self-sufficient child(ren) into the world, whereas caring for an aging parent or spouse can hold the expectation of transitioning into more formal care contexts or the death of the care recipient.

The primary limitation in this study is the instrument used to measure the experience of depressive symptoms relative to caregiving roles and experiences. The MIDUS study is a broad-scale study to understand a multitude of factors concerning Americans in mid-life. The primary questions within the main waves of the MIDUS study to measure mental health and well-being were self-reported measures with dichotomous responses or questions based off of clinically relevant thresholds to determine well-being such as symptoms of depression. The criteria for depressive symptoms in this study were based off of DSM-III criteria which looks at depressive symptoms over a two-week period. Other studies have utilized specific measures of strain or stress related to caregiving such as the Zarit Burden Interview, but these types of measures were

not utilized in the MIDUS data set. Additionally, other studies that have used the Zarit Burden Interview did not provide the robust number of respondents, were not randomly sampled, or did not provide the geographic context that the MIDUS dataset provided (Bédard et al. 2001; Chappell, Dujela, and Smith 2014, 2015; Gaugler et al. 2009). This is one of the major drawbacks of conducting secondary data analysis, and future studies will need to incorporate caregiver burden-specific measures to capture stress and strain related to caregiving.

Another limitation to the study may concern social desirability bias given the extreme right-skew of the depressive symptoms among this sample (Paulhus 1984). The questions concerning depression and caregiving were conducted through telephone interviews, thus some respondents may have responded in ways that they deemed to be more socially desirable to the interviewer (Cosco et al. 2017). Selection bias may also be a concern within this data set with those who are generally happier and with more flexibility in their schedule opting to continue with the subsequent waves of the study as compared to those who drop out of the second and third waves. Participants from the original MIDUS study who were more likely to drop from participating in subsequent waves tend to have poorer mental health, are older, have lower levels of income, and are caring for minor-aged children (Song et al. 2021). While Song and colleagues (2021) did not specifically identify those who were serving as caregivers in terms of retention rates from waves 2 and 3, it is likely that caregiving responsibilities (similar to caring for minor children), especially when accompanied by poor mental health, would likely fall within the group of people who are less likely to complete the subsequent waves of the study. Researchers would do well to reach out specifically to those who are more likely to drop from longitudinal studies, because they are the very people most impacted by the stress and strain associated with caregiving. These efforts will provide a clearer picture of the true nature of caregiving realities.

Implications

This study contributes to our knowledge about the potential long-term mental health impact associated with caregiving labor beyond cross-sectional, point-in-time analysis. By reviewing caregiving retrospectively, I show how stress related to caregiving spills over into subsequent caregiving experiences resulting in cumulative disadvantage for caregivers. Although this sample does not support my hypothesis that this cumulative disadvantage is worse for female caregivers than male caregivers, more studies are needed to expand on these ideas. Ideally, future nationally representative datasets will incorporate a broader sample of racial diversity and will attempt to capture those that are more likely to drop from longitudinal studies.

Women are more likely to take on multiple caregiving roles or experience multiple caregiving events throughout their life course by virtue of their gender socialization to provide care to others. The results of this study support the findings that having multiple caregiving experiences is significantly related to increased depressive symptomatology in women which can place women and their care recipient in strained and vulnerable positions. Smith and colleagues (2011) warn that as caregiver depression increases, the potential for harmful or neglectful caregiving behaviors toward care recipients increases. Future research will need to identify the risk factors associated with gender and caregiving to identify ways to intervene and provide support to caregivers, especially those with multiple or compounding caregiving experiences.

Practitioners working with families should consider how caregiving roles held by each family member puts some members at a disadvantage as compared to others. Family dynamics and relationships can become strained when one person in the family holds the primary responsibility of caring for others, especially when those responsibilities compound or multiply (Choi and Marks 2006; Penning and Wu 2016). Practitioners will want to include screening

questions pertaining to caregiving roles and responsibilities to best understand how caregiving burden is distributed among family members. Furthermore, practitioners may also want to educate themselves on how to work with caregivers and their aging or ill care recipients to provide support to both parties as they move through care trajectories.

In sum, caregiving experiences throughout the life course are nuanced. Studying caregiving only at cross-sectional points in time may blind researchers and practitioners to the realities of how these experiences impact well-being in the long run. For those that hold multiple caregiving experiences through the life course, the likelihood of a negative impact on well-being is evident even when controlling for age, income level, race, educational level, marital status, and employment status, indicating that selection into the caregiving role based on these characteristics is not what is driving the relationship between caregiving and depressive symptoms. Caregiving is a growing concern among Americans, particularly as the Baby Boomer population reaches retirement age and the expectations for informal care among family members is growing. Researchers are encouraged to broaden their scope in understanding the longitudinal aspects of caregiving, as well as building nationally and internationally representative datasets with measures specifically built to understand the stress and strain of caregiving among those providing care. Practitioners should also consider bolstering their practices with more literature and screening tools pertaining to caregiving and working with aging families.

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APPENDIX

Table 9: Full GOPR Table- Depression Severity by Temporal Caregiver & Gender: Models 1-2

	Depression Severity by Temporal Caregiver & Gender: Models 1-2			Model 2	
		Model 1		Estimate (Std Err)	t value (Pr(> t))
	n	Estimate (Std Err)	t value (Pr(> t))	Estimate (Std Err)	t value (Pr(> t))
Current Caregivers (All Exp & Genders)	264	0.182 (0.098) .	1.859 (0.063)		
No Previous CG Exp (Men)	59			0.154 (0.210)	0.734 (0.463)
No Previous CG Exp (Women)	110			-0.010 (0.157)	-0.064 (0.949)
Previous CG Exp (Men)	21			0.286 (0.328)	0.871 (0.384)
Previous CG Exp (Women)	74			0.397 (0.161) *	2.458 (0.014)
Recent Caregivers (All Exp & Genders)	169				
No Previous CG Exp (Men)	36				
No Previous CG Exp (Women)	58				
Previous CG Exp (Men)	17				
Previous CG Exp (Women)	58				
Past Caregivers (All Genders)	739				
Past Caregivers (Men)	281				
Past Caregivers (Women)	458				
Parents (All Genders)	1,413				
Fathers	634				
Mothers	779				
Age		-1.655e-04 (0.230e-04) ***	-7.201 (5.993e-13)	-1.660e-04 (0.230e-04) ***	-7.210 (5.613e-13)
Unemployed		0.423 (0.175) *	2.413 (0.016)	0.435 (0.175) *	2.482 (0.013)
Not in Labor Market		0.022 (0.069)	0.326 (0.745)	0.026 (0.069)	0.377 (0.706)
Never Married		0.260 (0.112) *	2.315 (0.021)	0.267 (0.112) *	2.372 (0.018)
Cohabiting		0.193 (0.146)	1.318 (0.187)	0.201 (0.147)	1.370 (0.171)
Divorced/ Separated		0.312 (0.084) ***	3.709 (0.000)	0.310 (0.084) ***	3.691 (0.000)
Widowed		0.425 (0.098) ***	4.344 (1.401e-05)	0.422 (0.100) ***	4.305 (1.672e-05)
Income- Missing		0.063 (0.086)	0.723 (0.464)	0.064 (0.086)	0.738 (0.460)
First Quartile (\$0 to \$34,000)		0.361 (0.081) ***	4.439 (9.027e-06)	0.36 (0.082) ***	4.469 (7.855e-06)
Third Quartile (\$88,000 to \$121, 299)		-0.103 (0.105)	-0.980 (0.327)	-0.100 (0.105)	-0.947 (0.343)
Fourth Quartile (over \$121,300)		-0.183 (0.093) *	-1.973 (0.048)	-0.181 (0.093) .	-1.946 (0.052)
Black		-0.019 (0.139)	-0.138 (0.890)	-0.025 (0.139)	-0.181 (0.856)
Native American/ Pac. Islander		-0.605 (0.326) .	-1.8597 (0.063)	-0.605 (0.326) .	-1.859 (0.063)
Asian		-0.282 (0.4547)	-0.622 (0.534)	-0.244 (0.447)	-0.546 (0.585)
Other Race		-0.146 (0.203)	-0.723 (0.470)	-0.138 (0.202)	-0.680 (0.496)
2-year degree (Associate's)		0.037 (0.073)	0.508 (0.611)	0.033 (0.073)	0.453 (0.6513)
4-year degree (Bachelor's)		-0.071 (0.084)	-0.850 (0.395)	-0.076 (0.084)	-0.904 (0.366)
Graduate Degree		-0.073 (0.094)	-0.771 (0.440)	-0.071 (0.094)	-0.752 (0.452)
Threshold (0 -> 1)		0.652 (0.121) ***	5.375 (7.681e-08)	0.651 (0.122) ***	5.360 (8.324e-08)
Threshold (1 -> 2)		0.662 (0.121) ***	5.453 (4.947e-08)	0.661 (0.122) ***	5.439 (5.366e-08)
Threshold (2 -> 3)		0.707 (0.122) ***	5.818 (5.948e-09)	0.706 (0.122) ***	5.804 (6.483e-09)
Threshold (3 -> 4)		0.775 (0.122) ***	6.367 (1.934e-10)	0.774 (0.122) ***	6.352 (2.124e-10)
Threshold (4 -> 5)		0.902 (0.122) ***	7.389 (1.485e-13)	0.901 (0.122) ***	7.374 (1.659e-13)
Threshold (5 -> 6)		1.144 (0.123) ***	9.286 (< 2.2e-16)	1.143 (0.123) ***	9.271 (< 2.2e-16)
Threshold (6 -> 7)		1.610 (0.129) ***	12.583 (< 2.2e-16)	1.610 (0.128) ***	12.571 (< 2.2e-16)
Observations			3288		3288
Bruesch-Pagan (p-value)			155.87 (2.2e-16)		161.87 (2.2e-16)
Log-Likelihood			-1823.381		-1821.63
No. Iterations			9		9
McFadden's R2			0.042		0.043
AIC			3698.763		3701.259

Notes:

. p < 0.1; * p < 0.05; ** p < 0.01, *** p < 0.001

Controlled for age, employment status, marital status, income level, race, and educational level.

Table 10: Full GOPR Table- Depression Severity by Temporal Caregiver & Gender: Models 3-4

Depression Severity by Temporal Caregiver & Gender: Models 3- 4					
	Model 3			Model 4	
	<i>n</i>	<i>Estimate (Std Err)</i>	<i>t value (Pr(> t))</i>	<i>Estimate (Std Err)</i>	<i>t value (Pr(> t))</i>
Current Caregivers (All Exp & Genders)	264				
No Previous CG Exp (Men)	59	0.192 (0.210)	0.912 (0.362)	0.191 (0.210)	0.907 (0.364)
No Previous CG Exp (Women)	110	0.032 (0.157)	0.206 (0.837)	0.032 (0.157)	0.206 (0.836)
Previous CG Exp (Men)	21	0.325 (0.328)	0.993 (0.321)	0.321 (0.328)	0.981 (0.327)
Previous CG Exp (Women)	74	0.436 (0.162) **	2.700 (0.007)	0.438 (0.162) **	2.708 (0.007)
Recent Caregivers (All Exp & Genders)	169	0.515 (0.107) ***	4.820 (1.429e-06)		
No Previous CG Exp (Men)	36			0.001 (0.279)	0.005 (0.996)
No Previous CG Exp (Women)	58			0.430 (0.182) *	2.369 (0.018)
Previous CG Exp (Men)	17			0.598 (0.318) .	1.880 (0.060)
Previous CG Exp (Women)	58			0.771 (0.163) ***	4.722 (2.341e-06)
Past Caregivers (All Genders)	739				
Past Caregivers (Men)	281				
Past Caregivers (Women)	458				
Parents (All Genders)	1,413				
Fathers	634				
Mothers	779				
Age		-1.647e-04 (0.2316e-04) ***	-7.111 (1.151e-12)	-1.644e-04 (0.232e-04) ***	-7.087 (1.390e-12)
Unemployed		0.372 (0.177) *	2.103 (0.035)	0.361 (0.177) *	2.036 (0.042)
Not in Labor Market		0.013 (0.070)	0.185 (0.854)	0.018 (0.070)	0.253 (0.800)
Never Married		0.254 (0.113) *	2.252 (0.024)	0.264 (0.113) *	2.333 (0.0201)
Cohabiting		0.182 (0.147)	1.242 (0.214)	0.189 (0.147)	1.284 (0.200)
Divorced/ Separated		0.301 (0.084) ***	3.559 (0.000)	0.301 (0.085) ***	3.556 (0.000)
Widowed		0.407 (0.100) ***	4.120 (3.790e-05)	0.394 (0.100) ***	3.980 (6.890e-05)
Income- Missing		0.061 (0.087)	0.706 (0.480)	0.056 (0.087)	0.635 (0.526)
First Quartile (\$0 to \$34,000)		0.373 (0.082) ***	4.559 (5.153e-06)	0.364 (0.082) ***	4.442 (8.907e-06)
Third Quartile (\$88,000 to \$121, 299)		-0.097 (0.106)	-0.915 (0.360)	-0.109 (0.106)	-1.022 (0.307)
Fourth Quartile (over \$121,300)		-0.174 (0.093) .	-1.865 (0.062)	-0.184 (0.093) *	-1.966 (0.049)
Black		-0.018 (0.140)	-0.126 (0.899)	-0.020 (0.140)	-0.144 (0.886)
Native American/ Pac. Islander		-0.615 (0.326) .	-1.885 (0.059)	-0.603 (0.326) .	-1.850 (0.064)
Asian		-0.265 (0.453)	-0.585 (0.559)	-0.276 (0.455)	-0.608 (0.543)
Other Race		-0.128 (0.202)	-0.636 (0.525)	-0.128 (0.202)	-0.633 (0.527)
2-year degree (Associate's)		0.025 (0.073)	0.335 (0.737)	0.024 (0.074)	0.326 (0.745)
4-year degree (Bachelor's)		-0.084 (0.084)	-1.002 (0.316)	-0.078 (0.084)	-0.930 (0.353)
Graduate Degree		-0.073 (0.095)	-0.768 (0.442)	-0.068 (0.095)	-0.722 (0.470)
Threshold (0 -> 1)		0.685 (0.122) ***	5.606 (2.066e-08) ***	0.682 (0.122) ***	5.570 (2.548e-08)
Threshold (1 -> 2)		0.695 (0.122) ***	5.685 (1.305e-08)	0.691 (0.122) ***	5.649 (1.613e-08)
Threshold (2 -> 3)		0.740 (0.122) ***	6.051 (1.438e-09)	0.737 (0.123) ***	6.015 (1.795e-09)
Threshold (3 -> 4)		0.808 (0.122) ***	6.600 (4.125e-11)	0.805 (0.124) ***	6.565 (5.210e-11)
Threshold (4 -> 5)		0.937 (0.123) ***	7.621 (2.513e-14)	0.934 (0.123) ***	7.589 (3.235e-14)
Threshold (5 -> 6)		1.181 (0.124) ***	9.521 (< 2.2e-16)	1.180 (0.124) ***	9.492 (< 2.2e-16)
Threshold (6 -> 7)		1.653 (0.129) ***	12.821 (< 2.2e-16)	1.654 (0.129) ***	12.780 (< 2.2e-16)
Observations			3288		3288
Bruesch-Pagan (p-value)			177.63 (2.2e-16)		182.25 (2.2e-16)
Log-Likelihood			-1810.603		-1807.299
No. Iterations			9		9
McFadden's R2			0.049		0.050
AIC			3681.207		3680.599

Notes:

. p < 0.1; * p < 0.05; ** p < 0.01, *** p < 0.001

Controlled for age, employment status, marital status, income level, race, and educational level.

Table 11: Full GOPR Table- Depression Severity by Temporal Caregiver & Gender: Models 5- 6

Depression Severity by Temporal Caregiver & Gender: Models 5- 6					
	Model 5			Model 6	
	<i>n</i>	<i>Estimate (Std Err)</i>	<i>t value (Pr(> t))</i>	<i>Estimate (Std Err)</i>	<i>t value (Pr(> t))</i>
Current Caregivers (All Exp & Genders)	264				
No Previous CG Exp (Men)	59	0.264 (0.211)	1.252 (0.210)	0.342 (0.212)	1.611 (0.107)
No Previous CG Exp (Women)	110	0.115 (0.159)	0.727 (0.467)	0.063 (0.160)	0.392 (0.695)
Previous CG Exp (Men)	21	0.401 (0.328)	1.223 (0.221)	0.439 (0.328)	1.337 (0.181)
Previous CG Exp (Women)	74	0.522 (0.163) **	3.201 (0.001)	0.466 (0.164) **	2.840 (0.005)
Recent Caregivers (All Exp & Genders)	169				
No Previous CG Exp (Men)	36	0.089 (0.280)	0.318 (0.751)	0.137 (0.279)	0.490 (0.624)
No Previous CG Exp (Women)	58	0.514 (0.183) **	2.811 (0.005)	0.456 (0.184) *	2.477 (0.013)
Previous CG Exp (Men)	17	0.676 (0.319) *	2.123 (0.034)	0.700 (0.320) *	2.187 (0.029)
Previous CG Exp (Women)	58	0.866 (0.165) ***	5.250 (1.520e-07)	0.816 (0.166) ***	4.9140 (8.922e-07)
Past Caregivers (All Genders)	739				
Past Caregivers (Men)	281	0.268 (0.103) **	2.596 (0.009)	0.316 (0.105) **	3.008 (0.003)
Past Caregivers (Women)	458	0.285 (0.080) ***	3.544 (3.936e-04)	0.238 (0.082) **	2.913 (0.004)
Parents (All Genders)	1,413				
Fathers	634			-0.227 (0.095) *	-2.406 (0.016)
Mothers	779			0.036 (0.080)	0.446 (0.656)
Age		-1.779e-04 (0.270e-04) ***	-6.606 (3.959e-11)	-1.772e-04 (0.270e-04) ***	-6.585 (4.556e-11)
Unemployed		0.356 (0.178) *	2.004 (0.045)	0.358 (0.178) *	2.011 (0.044)
Not in Labor Market		0.007 (0.070)	0.098 (0.922)	-0.939e-03 (0.070)	-0.014 (0.989)
Never Married		0.219 (0.118)	1.854 (0.064)	0.206 (0.118) .	1.740 (0.082)
Cohabiting		0.149 (0.149)	1.000 (0.317)	0.150 (0.150)	1.009 (0.313)
Divorced/ Separated		0.294 (0.085) ***	3.452 (0.001)	0.281 (0.085) ***	3.293 (0.001)
Widowed		0.341 (0.100) ***	3.400 (0.001)	0.337 (0.100) ***	3.361 (0.001)
Income- Missing		0.053 (0.087)	0.609 (0.543)	0.058 (0.087)	0.668 (0.504)
First Quartile (\$0 to \$34,000)		0.360 (0.082) ***	4.363 (1.284e-05)	0.359 (0.082) ***	4.358 (1.313e-05)
Third Quartile (\$88,000 to \$121, 299)		-0.102 (0.107)	-0.957 (0.339)	-0.103 (0.107)	-0.962 (0.336)
Fourth Quartile (over \$121,300)		-0.171 (0.094) .	-1.816 (0.069)	-0.170 (0.094) .	-1.809 (0.0705)
Black		-0.005 (0.141)	-0.038 (0.970)	-0.008 (0.141)	-0.058 (0.954)
Native American/ Pac. Islander		-0.636 (0.333) .	-1.909 (0.056)	-0.631 (0.333) .	-1.896 (0.058)
Asian		-0.270 (0.458)	-0.590 (0.555)	-0.292 (0.460)	-0.635 (0.525)
Other Race		-0.110 (0.202)	-0.546 (0.585)	-0.125 (0.203)	-0.616 (0.538)
2-year degree (Associate's)		0.016 (0.074)	0.215 (0.830)	0.015 (0.074)	0.206 (0.837)
4-year degree (Bachelor's)		-0.072 (0.084)	-0.850 (0.396)	-0.074 (0.085)	-0.875 (0.382)
Graduate Degree		-0.070 (0.100)	-0.723 (0.470)	-0.070 (0.100)	-0.737 (0.461)
Threshold (0 -> 1)		0.664 (0.154) ***	4.325 (1.523e-05)	0.653 (0.153) ***	4.254 (2.099e-05)
Threshold (1 -> 2)		0.674 (0.154) ***	4.389 (1.138e-05)	0.663 (0.154) ***	4.318 (1.574e-05)
Threshold (2 -> 3)		0.720 (0.154) ***	4.686 (2.792e-06)	0.709 (0.154) ***	4.616 (3.922e-06)
Threshold (3 -> 4)		0.789 (0.154) ***	5.131 (2.878e-07)	0.778 (0.154) ***	5.063 (4.127e-07)
Threshold (4 -> 5)		0.919 (0.154) ***	5.963 (2.470e-09)	0.909 (0.154) ***	5.899 (3.666e-09)
Threshold (5 -> 6)		1.166 (0.155) ***	7.521 (5.419e-14)	1.156 (0.155) ***	7.465 (8.355e-14)
Threshold (6 -> 7)		1.642 (0.160) ***	10.327 (< 2.2e-16)	1.636 (0.159) ***	10.287 (< 2.2e-16)
Observations			3288		3288
Bruesch-Pagan (p-value)		195.4 (2.2e-16)		207.69 (2.2e-16)	
Log-Likelihood		-1798.821		-1795.088	
No. Iterations		9		9	
McFadden's R2		0.055		0.057	
AIC		3669.643		3664.177	

Notes:

. p < 0.1; * p < 0.05; ** p < 0.01, *** p < 0.001

Controlled for age, employment status, marital status, income level, race, and educational level.