

Beyond sacrifice? Long-term employment consequences of providing unpaid care

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Beyond Sacrifice? Long-Term Employment Consequences of Providing Unpaid Care



KLARA RAIBER

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Klara Raiber

Colofon

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Beyond Sacrifice? Long-Term Employment Consequences of Providing Unpaid Care

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Dissertation

to obtain the degree of doctor
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on the authority of the Rector Magnificus prof. dr. J.M. Sanders,
according to the decision of the Doctorate Board
to be defended in public on Tuesday, July 2, 2024
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by

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Chapter 1

Introduction



A version of this chapter together with parts of Chapter 7 are part of a conference paper for the Human Development & Capability Association (HDCA) conference 2023, where these chapters also received feedback.

Background and Aim

Population aging is one of the major challenges that societies face. The population of people over 60 is expected to almost double from 12% to 21% within the next 30 years (World Health Organization (WHO), 2022). The population over 80 is estimated to even triple by 2050 (United Nations Department of Economic and Social Affairs, 2022). More people of older age also result in more people who potentially need health-related care due to complex health issues. In many countries, people currently rely on family members (and, to a lesser extent, friends) to provide care to them and it is expected that this type of caregiving will only increase in the future (Broese van Groenou & de Boer, 2016; Da Roit & Moreno-Fuentes, 2019). Caregiving for family members and friends with health issues is here referred to as unpaid caregiving, while in other contexts, the same concept is referred to as informal care or family care.¹ Examples of unpaid care include, say, support for a parent with dementia or a friend who had major surgery. The tasks can range from helping with groceries and emotional support to personal and medical care (e.g., helping with dressing and medication). The term unpaid caregiver is often used to (also) describe childcare, yet in this dissertation, it does not include regular childcare and only refers to care for people with health issues.

As an illustration of the amount of unpaid caregiving provided in the Netherlands: in March 2020,² around 2 out of 3 persons of working age (16 to 65 years) have provided unpaid care at least once in their life. 1 out of 3 persons were caring at the moment in March 2020. Those individuals who provided care, did so for, on average, around 9 hours per week.³ Many people thus take up caregiving tasks for a substantial number of hours. Providing care may affect other domains in someone's life, referred to as spillover effects. One such important domain is employment. Because of population aging, a labor supply shortage is predicted, with more need for people in the labor market to counter the lower workforce participation and rising welfare costs. It is, therefore, relevant to understand how caregiving and employment can be combined successfully, especially considering that the demand for informal care as well as for workers is expected to only increase in the future (Broese van Groenou & de Boer, 2016). This potential spillover effect from unpaid caregiving onto employment is central to this dissertation. A particular focus lies on the long-term consequences at the individual level, resulting in the overall research question:

What are the (individual) long-term employment consequences of providing unpaid care?

¹ I choose the term *unpaid caregiving* because *informal caregiving* has the connotation that caregiving is unrecognized and is framed as non-essential, which is often not true and dismisses the value of caring for a loved one with health issues (Stall, Campbell, Reddy, & Rochon, 2019). Family caregiving was less fitting in this context because in the Netherlands, the context in three empirical chapters, almost one out of five caregivers provided care to friends or neighbors (see Chapter 2), and thus are not family caregivers in a strict sense.

² See for instance Chapter 2 for a description of the used data for these descriptive numbers.

³ These numbers are comparable to the findings of the SCP (The Netherlands Institute for Social Research), see De Boer, de Klerk, Verbeek-Oudijk, and Plaisier (2020).

The answer to this question is based on five empirical (quantitative) chapters, which all look at different but related employment consequences, covering data from multiple years and countries. Data in three chapters are from the Netherlands (Chapters 2, 4, and 5), in one from Germany (Chapter 3), and in the last one from the United Kingdom (UK) (Chapter 6). These contexts have in common that they have similar age distributions and aging trends, with a relative change in the median age of more than 10% in the last twenty years (Ritchie & Roser, 2019). This means that the need for care is relatively comparable. Yet, these contexts differ in their developments in paid care services and support for unpaid caregiving. In the Netherlands, since 2015, there has been a shift away from paid care services, and the responsibility of care tasks is increasingly being transferred to the family (Da Roit & Moreno-Fuentes, 2019). In the UK, the Care Act of 2014 promotes more choices in care arrangements related to personal needs (Da Roit & Moreno-Fuentes, 2019; Mitchell & Glendinning, 2017), making unpaid caregiving a favorable alternative as paid long-term care provision is comparably ungenerous (Verbakel, 2018). Germany is characterized by long-standing long-term care policies that give access to paid care services coupled with support systems for unpaid caregivers (Da Roit & Moreno-Fuentes, 2019; Floridi, Carrino, & Glaser, 2020). Therefore, Germany constitutes a fitting context to look into the effects of monetary support (Chapter 3). All studies were conducted before the COVID-19 pandemic as the pandemic, especially the first lockdowns, had tremendous influence on unpaid care provision (and employment) in all three contexts (Bergmann & Wagner, 2021; Carers UK, 2020; Möhring, Zinn, & Ehrlich, 2023; Raiber & Verbakel, 2021; Raiber, Verbakel, & de Boer, 2022).⁴

I focus on the employment consequences of unpaid caregiving, so the relationship looked at in this dissertation is one-directional. Nevertheless, there is likely also a relationship the other way around, as employment characteristics may influence caregiving decisions (Bauer & Sousa-Poza, 2015; Martsolf et al., 2019). Yet, to model the relationship and conceptualize the spillover from care to employment, I focus on the one-directional effects of caregiving on employment. Although it is a theoretical assumption, the direction of the relationship is modeled as such in the empirical chapters. In all empirical chapters, I look at the effects on employment after a person made a transition into caregiving.

Capability Approach

In the last chapter, I will create a deeper understanding of the importance of my results, particularly concerning the spillovers between caregiving and employment: how do these results affect the wellbeing or quality of life of the individuals providing care? I do so with the use of the *capability approach*. The capability approach, which is widely used in other disciplines such as economics and moral philosophy as well as on similar topics (e.g., Den Brinker, Kooij, Van Engen, Peters, & Van der Klink, 2023; Hobson, 2011; Hoogenboom, Kruijswijk, & Yerkes, 2015), constitutes a comprehensive framework

⁴ Including the COVID-19 pandemic years in the empirical chapters could have overshadowed the overall trends I am interested in here.

that can be employed for the assessment of wellbeing or quality of life. As it allows for the explicit incorporation of considerations relating to the provision of care and to the employment situation of the persons whose wellbeing is assessed, it is particularly suited for my purposes.

The aim of using the capability approach is to understand how the empirical results (Chapters 2 to 6) can inform us about caregiving's overall impact on a person's *wellbeing* or *quality of life*. There are many different accounts of these notions, and I will explain how I use them in the following. First, we can use the terms in a *generic* or *specific* sense, that is, we can talk about a person's *overall* wellbeing (one's wellbeing 'all things considered') or the wellbeing in one or more *particular domains* (e.g., a person's 'mental' wellbeing). Whereas 'quality of life' is usually understood in the more generic sense (Rapley, 2003), it can also be used in a more narrow sense, say when we use notions of 'health-related' quality of life. In much of what follows, I will talk about wellbeing in the context of the provision of unpaid care, which often takes place in the family domain, and employment wellbeing, meaning the wellbeing to the degree it is constituted by one's employment.

Second, a distinction can be made between a person's wellbeing insofar as it refers to the things the person *actually* is or does (their 'achieved functionings') and what they *can* do or be (their 'capabilities') (Robeyns, 2017; Sen, 1999). Sen (1985) initially used the terms 'wellbeing' and 'advantage' but also 'achieved wellbeing' and 'wellbeing freedom' when referring to the two aspects, respectively. These labels have the disadvantage of suggesting that wellbeing is only about achieved functionings, whereas, as Sen (1999) has argued so forcefully in his later work, a person's ability and opportunity, that is, a person's *capability*, is of utmost importance when assessing how well a person is doing. In what follows, I shall consider wellbeing synonymous to, and use it interchangeably with, quality of life and see it is a function of both one's achieved functionings and all functionings that one had the opportunity to select (their capabilities). Indeed, it is this observation that forms one of the main motivations for the development of the capability approach.

Using wellbeing in this wider sense and restricting it to the domains of family care and economic employment, I will lay out how the results established in this dissertation can be understood in terms of a person's quality of life. First, I examine how one's decision to provide unpaid care affects one's wellbeing insofar as this wellbeing is determined by one's employment. Here, the relation is between an achieved functioning (providing unpaid care) and one's employment wellbeing. Employment wellbeing is understood as a function of both achieved functionings and capabilities. The achieved functionings comprise both an objective element (the individual's employment) as well as a person's subjective assessment of it (their job satisfaction). Based on a reflection on the achieved functionings, I subsequently aim to ascertain the effect of unpaid care on one's capability in the employment domain. In particular and related to the overall research question of this thesis, the question is about the extent to which the *provision of unpaid care limits a person's employment opportunities*.

Clearly, the dependency between the domains of employment and family is central. This relates to Nussbaum's (2000) argument that capabilities can influence other capabilities, reaching over different domains in a person's life (Nussbaum, 2005, 2019). For the topic at hand, this means that caregiving (in the family domain) potentially influences employment (Yerkes, Hoogenboom, & Javornik, 2020) and vice versa. My underlying assumption is that everyone can provide unpaid care and, thus, has the capability of fulfilling a caregiving role (similar to Hoogenboom, Kruijswijk, & Yerkes, 2015 (related to childcare)). Starting the new role of caregiver can mean increased added value to the family domain and a potential shift away from the employment domain. As individuals may already have a full and busy life, adding a new social role could mean that trade-offs between capabilities have to be made. Consider a person who has children, a time-consuming hobby like playing an instrument in an orchestra, household tasks, and a full-time job. This person is already fully engaged both role- and time-wise. The new role of caregiver could, for this person, mean making sacrifices. In this dissertation, I look at the potential negative effects in the employment domain (the sacrifices), but also beyond sacrifices, which refers to positive spillovers.

To make it more specific, starting to care for a family member or friend with health issues means realizing the functioning of *being* a caregiver in the family domain. This newly achieved functioning of being a caregiver potentially provokes a(n) (intrapersonal) spillover between possible functionings within the domain of employment, potentially leading to a loss (or gain) of functionings there (van Hees, 2020). By mapping what functionings are achieved in the employment domain by the caregiver, an assessment of what caregivers *can do* (their capabilities) related to their employment is made (Sen, 1999). Negative and positive intrapersonal dependencies are possible between the achieved functioning of being a caregiver and possible functionings in the employment domain. Take again the exemplary person above who has children, a time-consuming hobby, household tasks, and a full-time job. For this person, being a caregiver has a dependency on the functioning of being full-time employed as both functionings can compete time-wise. This is an example of a negative dependency. However, there are also potential positive dependencies (see all functionings in the next chapter). This means that some functionings can enhance others while some are restricted by another functioning (van Hees, 2020). Combinations are possible as well. For instance, one functioning in the employment domain could be positively influenced by caregiving, whereas another might be influenced negatively, potentially canceling each other out. In that case, it would result in the caregiver not having the capability in which all functionings are combined.

Connecting ideas on achieved functionings and capabilities in the employment domain to the empirical (sociological) chapters, the outcome variables (e.g., working hours) in those chapters can be seen as indicators for the functionings and capabilities that are possibly influenced by the newly achieved functioning of caregiving. Therefore, the results of the empirical chapters regarding these outcome variables inform about the wellbeing or quality of care insofar as this is determined by a person's actual employment as well as by their employment opportunities.

Employment Consequences

In the following subchapter, I derive the functionings and capabilities of interest, namely the employment consequences, which are the empirical outcome variables in Chapters 2 to 6. For this, I am relying on existing literature and using the capability approach as the framework.

In previous empirical studies, two employment outcomes of caregiving are dominant: labor supply and income. Labor supply is mainly looked at in two ways: hours worked and whether a person is employed. Previous research found a negative relationship between caregiving and labor supply, with caregivers working fewer hours (Ahmed & Floro, 2023; Bertogg, Nazio, & Strauss, 2020; Gomez-Leon, Evandrou, Falkingham, & Vlachatoni, 2019; Henz, 2004; Kelle, 2020; Miller & Sedai, 2022; Moussa, 2019; Schmitz & Westphal, 2017; Skira, 2015; Van Houtven, Coe, & Skira, 2013) or being more likely to be or become non-employed compared to non-caregivers (Gomez-Leon et al., 2019; Henz, 2004; Hohmeyer & Kopf, 2020; Kelle, 2020; Lee & Tang, 2013; Pavalko & Henderson, 2006; Xue, Lacey, Di Gessa, & McMunn, 2022). Regarding the capability approach, this would mean assessing the employment consequences by analyzing a person's functioning of *being employed the same hours* as if not caregiving or *being employed at all*.⁵ Following previous research, I will add these functionings to the list of outcomes to assess empirically. It has to be highlighted that having employment is crucial to one's overall wellbeing since unemployment may severely limit one's access to other employment-related functionings.

Regarding income, scholars found negative effects of caregiving as well, with caregivers earning less compared to those not providing care (Carmichael & Charles, 2003; Carmichael & Ercolani, 2016; Earle & Heymann, 2012; Ehrlich, Minkus, & Hess, 2020; Heitmueller & Inglis, 2007; Schmitz & Westphal, 2017; Skira, 2015; Van Houtven et al., 2013). While in the capability approach, the idea is to move away from only evaluating the spillover in terms of material means (Robeyns, 2017), I argue that income can still be a valid functioning in terms of being compensated and valued by the employer. Furthermore, from a sociological point of view, income is an essential determinant of social inequalities, and judging employment consequences without looking at wages would be incomplete. Income effects reach over a person's complete life course, including wealth in later life, as income affects pension contributions (Möhring, 2018). Therefore, *being compensated for the work in the same way compared to those not caring* (comparable hourly wages) is added to the list of functionings to be empirically assessed. The idea is not to look at overall salary but at hourly wages. With this approach, the focus is on the effects of caregiving beyond reducing working hours, as salary is automatically impacted by reduced hours while hourly wages are largely independent of hours worked.

Labor supply and income are relevant functionings to look at based on previous literature and are, therefore, also the focus of part of the empirical studies in this

⁵ *Already within the first two defined functionings, it becomes clear that the functionings are not on the same level and one could argue that being employed with the same hours is a sublevel of being employed. This should be kept in mind when interpreting and comparing the results from the empirical studies.*

dissertation. Yet, I argue that there are more functionings of importance to understand the employment consequences of unpaid caregiving more fully. From the childcare literature, it is known that caregivers do not only reduce their labor supply but also choose two other strategies to adapt their paid work because of their caring obligations, which are changing jobs and becoming self-employed (Abendroth, Huffman, & Treas, 2014; Arai, 2000; Budig, 2006; Ferrín, 2021; Lim, 2019; Matysiak & Mynarska, 2020). These alternative strategies could similarly apply to unpaid caregiving for older or sick people. Finding paid work that is combinable with caregiving, even if this has consequences for salary, could be a viable alternative solution with limited impact on wellbeing. Thus, *changing jobs* and *becoming self-employed* are added to the list of functionings.

Finally, the capability approach helps to move away from only evaluating the spillover in terms of differences in material or objective means as it includes a subjective perspective (Robeyns, 2017). This means that both objective (all functionings introduced above) and subjective functionings should be considered to properly assess the spillover of unpaid care and paid work within the capability approach. Therefore, I add a subjective functioning to complete the picture: *being as satisfied with work as without caring*. Although all objective functionings might suggest that caregivers are restricted in their choices, it could still be the case that caregivers are more satisfied with their paid work, which adds to their wellbeing. For instance, a person might have reduced working hours because of caregiving but could be more satisfied with the new work situation as it conflicts less with their caregiving tasks.

Contributions

I would like to highlight four major contributions to the literature that are incorporated throughout the dissertation.

Conflict and Enrichment Theory

The first contribution is that I consider both conflict and enrichment theory, whereas previous research mostly applied conflict theory only.⁶ The idea of conflict theory is that caregiving and employment compete with each other, which leads to negative spillovers from caregiving to employment. Translated to the capability approach, this would mean that being a caregiver restricts the functionings in the employment domain. In line with the capabilities approach, I argue that functionings can also enhance each other and that it is thus necessary to look beyond sacrifice. Neglecting that caregiving can also foster positive experiences for employment may give a distorted, solely negative picture. A sociological theory matching this idea of positive spillover is enrichment theory (also referred to as enhancement theory). In studies on unpaid caregiving for family and friends with health issues, enrichment and conflict theories are sparsely considered simultaneously (some exceptions are Morimoto & Takebayashi, 2020; Tement & Korunka,

⁶ For instance a simple search in Google Scholar (on April 13, 2023) with the search terms “enrichment theory” OR “enhancement theory” “informal care” OR “family care” “employment” got 150 entries compared to the search terms “conflict theory” “informal care” OR “family care” “employment” having 498 entries.

2015). With enrichment theory predicting positive spillovers and conflict theories predicting negative spillovers, the two approaches are often described as contrasting. I would argue, however, that this is not necessarily the case. The seemingly opposing effects they describe can, in fact, refer to mechanisms that take place simultaneously. For instance, it could be the case that a caregiver experiences a time conflict due to spending many hours on caregiving and work. Yet, this time conflict can be an opportunity to learn and develop valuable time management skills for employment.

I argue that the consequences of caregiving should be looked at from both perspectives rather than only one. Including enrichment theory allows me to include the view that unpaid caregiving is not exclusively burdensome but also produces value for the caregiver. Providing unpaid care is a crucial way to help loved ones keep living in their own homes, which matches the preferences of most people (Kasper, Wolff, & Skehan, 2018). Therefore, I included enrichment theory in the empirical chapters where possible. Whether it is possible to include the enrichment perspective depends on the employment outcome. Some employment consequences, e.g., reducing labor supply, are primarily related to conflict, so enrichment ideas are less relevant. In Chapters 4 and 5, I explicitly use both enrichment and conflict theory.

A Gender Perspective

Turning to the second contribution, it is nearly unthinkable to write a thesis on the employment consequences of caregiving without a gender perspective. Both employment and caregiving are highly gendered. In the employment domain, women on average work fewer hours and earn less per hour (Blau & Kahn, 2017). Men, in contrast, start to provide care less frequently. When they do, they care for fewer people and fewer hours (Verbakel, Tamlagsrønning, Winstone, Fjær, & Eikemo, 2017). How starting to provide care influences employment differently for women and men is less clear (Smith, Cawley, Williams, & Mustard, 2020). This is where I aim to contribute to the literature: how do enrichment and conflict play out differently for women and men? The theoretical premise builds on the childcare literature (e.g., Cooklin et al., 2016; Hodges & Budig, 2010; Kaufman & Uhlenberg, 2000; Wattis, Standing, & Yerkes, 2013) as I transfer arguments on the role of women being the typical caregivers and men the typical breadwinners to the topic of unpaid caregiving of family and friends with health issues. All five empirical chapters consider gender influences. In Chapters 2, 3, and 5, I derive new hypotheses about gender influences based on role theories. In Chapters 4 and 6, I split the analyses for women and men. I would have liked to include a complete measure of gender that includes self-identification, sees gender as situational and dynamic, and where doing (or displaying) gender related to employment and caregiving is observed (see Goffman, 1976; West & Zimmerman, 1987). Yet, such a complex measure was not available in the data sources. Nevertheless, in all contexts I study, there are arguably still prevalent and dominating binary expectations related to gender, meaning that my statistical models are likely not far from the actual social processes at hand. Put together, this thesis gives valuable insights into gendered processes of employment consequences of unpaid caregiving, modeling these processes in the best way possible.

A Life Course and Long-Term Perspective

A third contribution is that I apply a life course perspective to the topic. The life course perspective is a perspective or framework for understanding different life spheres as dependent on each other over the complete life course of a person (Elder, Johnson, & Crosnoe, 2003). Understanding unpaid care from a life course perspective helps to take into account that it can occur at different moments in a person's life, can be short or long-term, and can be provided to one or multiple people (Fast, Keating, Eales, Kim, & Lee, 2020; Keating, Eales, Funk, Fast, & Min, 2019). This means that unpaid caregiving can be a very different experience for one person compared to the other. With care being heterogeneous for different caregivers throughout the life course, the employment domain is also potentially influenced differently as it similarly depends on the stage of the career a person is in (Fast, Dosman, Lero, & Lucas, 2013). Thus, caregiving could create positive or negative experiences – theorized in enrichment and conflict theory – for employment depending on how the caregiving intersects with employment as a function of the timing, duration, and number of caregiving spells. The life course perspective is also useful for a better understanding of gendered effects, as gender roles and expectations similarly can vary for both caregiving and work depending on the life stage a person is in (Moen, 2001, 2011, 2016). There is some previous research applying the life course perspective to examine unpaid caregiving (e.g., Fast et al., 2020; Keating et al., 2019; Rodrigues, Filipovič Hrast, Kadi, Hurtado Monarres, & Hlebec, 2022; Verbakel, Visser, & Raiber, 2023). However, how the consequences of unpaid caregiving for employment can be understood is mostly lacking in the literature (Fast et al., 2013). Direct empirical applications of the life course approach can be found in Chapters 2, 5, and 6. The other chapters were inspired by ideas of the life course perspective but did not explicitly test them.

Furthermore, using a life course perspective gives this thesis the theoretical foundation to consider long-term developments. My approach can be regarded as long-term because it moves away from looking at one point in time. Instead, I argue that it should be seen as a long-term process where caregiving has initial consequences as well as consequences throughout the life course, with the consequences likely continuing even when the caregiving episode has stopped (see for instance Chapter 4). A theoretical long-term lens is needed to fully understand the employment consequences of care because disadvantages in earlier career stages can accumulate over a person's working career (Crystal, Shea, & Reyes, 2016). This idea of accumulative advantages and disadvantages returns in all empirical chapters, in some implicitly and in others explicitly (e.g., Chapter 4).

Methodological Advances

My fourth contribution is a methodological one related to the data and empirical analysis methods. My long-term approach theoretically builds on the life course perspective. This requires the use of data that have a time aspect. All the data sources used in this dissertation are either longitudinal panel studies or based on retrospective caregiving data in which the exact start and end dates of each caregiving episode are known.

With these rich data sources, covering a minimum of eleven years up to life-long care histories, I will move away from snapshots of work and care. Research using longitudinal data sources to analyze caregiving effects is increasingly prevalent (see for instance Bertogg et al., 2020; Ehrlich, Möhring, & Drobnič, 2019; Fast et al., 2020; Josten, Verbakel, & De Boer, 2022; Kelle, 2020) and this thesis is adding to that literature by not relying on cross-sectional data, which is still the dominant approach in this line of research. Longitudinal approaches are essential for understanding the influence of caregiving on work because of potential reversed causality and selection issues (Josten et al., 2022). Reversed causality is a prominent issue in cross-sectional research on caregiving, as caregivers often have different employment careers to start with. For instance, in cross-sectional research, it is impossible to distinguish if caregiving was the reason for reduced working hours or if those with low working hours were the ones to start caregiving (Josten et al., 2022). In all chapters, based on the life course perspective seeing caregiving as a transition into caregiving, I modeled it as such, meaning that in terms of temporal order, the start of caregiving came first and only after that transition, was it related to employment outcomes. While establishing causal relationships is not my goal,⁷ modeling the transitions into providing care and creating a clear order of events, does help to come closer to the actual effects on employment necessary to draw my conclusions on.

In a similar vein, I will account for selection effects where possible. Selection effects here mean that characteristics of a person that lead to the person picking up care are also influential for the employment consequences. One example would be a person with low labor market participation who provides care in the family. This person – with lower labor market participation – may also be more prone to reduce working hours as the family is less dependent on this person's income. Ruling out selection is nearly impossible, and where I suspect selection effects occur despite the measures taken to avoid them, I will reflect on them in the empirical chapters. The following advanced empirical approaches are taken to minimize selection effects: In Chapter 2, I focus on caregivers only and on differences between caregivers who have already selected themselves into caregiving. In Chapters 3 and 6, I use panel data and estimate fixed-effects panel regressions. Those models have the advantage that they automatically control for time-stable characteristics and changes in caregiving are related to changes in employment. This means that many potential selection characteristics are already controlled for. In Chapter 4, I match similar caregivers to similar non-caregivers in terms of educational level, partner, children, age, and sex to rule out selection effects based on these variables. Last, Chapter 5 builds on rich tax data with many objectively measured control variables. The focus on wage growth instead of overall wages makes the outcome variable less dependent on the respondents' position in the wage distribution. In this chapter, I also empirically show the selection process at hand.

By applying the life course perspective, employing rich data covering long timespans, and using advanced quantitative (longitudinal) analysis methods, I will apply a much-needed long-term perspective to the topic in all empirical chapters.

⁷ *In my personal opinion it is impossible within social science to really establish a causal relationship. Yet, I consider trying to come as close as possible to a causal relationship in quantitative research best practice.*

Overview Empirical Studies

Figure 1.1 shows a summary of the main elements included in the five empirical studies. The five empirical studies can be grouped by whether they are related to objective functionings (Chapters 2 to 5) or subjective functionings (Chapter 6). In the studies about the objective functionings, Chapters 2 and 3 relate to strategies caregivers choose to overcome a work-care conflict. The focus in Chapter 2 is on four potential strategies to adapt paid work. In previous research, two strategies were mostly assessed: reducing working hours or stopping to work completely (Moussa, 2019). Yet, from the childcare literature, it is evident that there are two potential other strategies, namely changing jobs and becoming self-employed (Abendroth et al., 2014; Looze, 2017; Matysiak & Mynarska, 2020). To choose one of those strategies, theoretically, caregivers have to come into a situation where they are not able to combine caregiving and their paid work under their current working conditions. Only when experiencing such a work-care conflict would caregivers see the need to change their employment situation. This theoretical mechanism, whether a work-care conflict is indeed the reason for a change in the work sphere, will be tested in the first empirical step. In the second step, I look at how the decision for a certain strategy depends on the age at which the caregiving started, more precisely, the life stage at the beginning of the caregiving episode, as well as whether this decision is gendered. Arguments related to the work-care conflict in specific life stages are differentiated. For instance, caregivers in earlier life stages are potentially less willing to go for strategies related to labor supply reduction as they are in their career-building phase and are expected to gain work experience. With regard to the role of gender, I argue that all decisions related to choosing a strategy are potentially gendered and intertwined with the life stage a person is in. Women and men are in different situations throughout their life course, both in the private sphere, here related to caregiving, but also in the employment sphere. Women might be more willing or expected to reduce their labor supply, while men tend to combine work and care more. By doing this, men might keep up the appearance that they value employment and decide on strategies such as changing jobs or becoming self-employed. In an explorative part, the interconnection between gender and life course is looked at. The analysis relies on Dutch retrospective data collected among a sample of caregivers who were asked for each caregiving episode in which they worked and whether they chose a certain strategy because of their unpaid caregiving duties (3,673 caregiving episodes of 2,112 caregivers). This enables a focus on actively having chosen a certain strategy rather than assuming that the work adaptation was because of the caregiving. Multilevel logistic regression analyses are performed to account for multiple episodes being clustered within a caregiver.

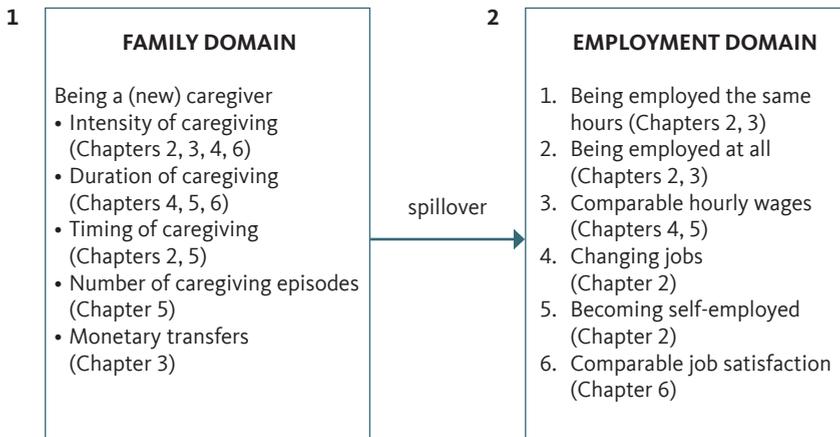


Figure 1.1 | Overview of the main aspects included in the empirical studies.

In Chapter 3, I examine whether changes in caregiving are indeed associated with the strategy to reduce labor supply, that is, reducing working hours or stopping to work, the most prevalent strategies among respondents in Chapter 2. This constitutes a replication of a relationship that is already known relatively well in the literature (see Moussa, 2019 for a review), differentiated by low- and high-intensity caregiving. To understand the potential motivations behind labor supply reduction, I look at how monetary transfers can be an incentive to reduce labor supply when starting to care for someone. In Germany, the context in this chapter, care recipients receive money from the long-term care system that they can transfer to their unpaid caregivers on top or instead of their own money. The study analyses the potential consequences of monetary transfers from the care receiver to the caregiver in relation to reducing labor supply. Again, a gender perspective is applied, using the arguments that women potentially have a higher work-care conflict, which results in higher motivation to reduce labor supply. In contrast, men, who are seen as the traditional breadwinner, try to avoid reducing labor supply. Moreover, I argue that women in this process do not need the monetary transfers so much as motivation because they are already more willing to reduce labor supply. Men, in contrast, might need this extra monetary incentive as it compensates for potential income losses. With this compensation, they deviate less from their breadwinner role. The basis of the analysis are twelve waves of yearly panel data (2007-2019) from the German Labour Market and Social Security panel study (PASS) with 110,418 observations of 21,995 respondents. Fixed-effects panel analyses are conducted to relate changes in caregiving (intensity) to changes in working hours and in employment status. Interaction models are used to understand the influence of monetary transfers, gender, and how they are intertwined and related to labor supply reduction.

After having looked at the different strategies caregivers can choose to adapt paid work due to caregiving and the influence of monetary transfers, Chapters 4 and 5 are

about the consequences of caregiving tasks for hourly wages. Chapter 4 focuses on wage development. Caregivers might reduce their labor supply or be less productive, but the question arises if this is translated into lower hourly wage growth over time, as predicted by conflict theory. An alternative outcome would be that caregivers gain skills from or recognition for their caregiving, leading to an increase in wage growth, as hypothesized in enrichment theory. Similar to Chapters 2 and 3, I take a gender perspective to understand how wage growth is differently influenced by caregiving for men and women. Similar to the literature on the daddy bonus, I expect that men may gain more or have fewer disadvantages when carrying out atypical roles, in this case, unpaid caregiving. The argument is that men, on average, experience less conflict and can learn more from caregiving as men are less expected to already possess care-related skills. Caregivers are compared to those who have not cared and those who have cared in the past. Among caregivers, I differentiate caregiving duration and intensity. Both factors increase the importance of the arguments of conflict and enrichment theory as more caregiving in terms of longer duration and more hours spent on caregiving (higher intensity) could create a stronger conflict, but also more possibilities to learn and get recognition. In this study, the same retrospective Dutch caregiving data as in Chapter 2 are combined with register data, including a sample of people who never cared. By doing so, the dataset includes monthly information on caregiving, hourly wages, and relevant control variables for 19 years, consisting of 324,940 months and 2,659 respondents.

Similar to Chapter 4, Chapter 5 is about the consequences of caregiving for wages. I zoom in on potential life course factors that can explain why certain caregivers earn less, the same, or more per hour compared to non-caregivers who are similar to them in relevant respects. By explaining the differences in hourly wages of caregivers compared to non-caregivers, one can look at the accumulated (dis)advantages resulting from the employment adaptation of caregivers such as the ones studied in Chapter 2. The three life course factors are the timing of first caregiving, the duration of caregiving, and the number of caregiving episodes over the complete lifespan of a person. Similar to the argument in Chapter 2, the assumption is that caregiving influences employment differently depending on the life stage in which a person provides unpaid care, though this chapter specifically refers to the age at which the caregiver provided care for the first time. Starting to provide care in earlier life stages could have cumulative effects on hourly wages as one is still in the career-building phase. It may even create a 'triple burden' if it coincides with childcare. In contrast, caregiving that began in later life stages falls together with an already established career and professional network to rely on. Duration is – similar to Chapter 4 – an indicator of potential longer work-care conflict. The number of caregiving episodes reflects how many different people a person provided care to. The theoretical idea is that each new caregiving episode can introduce another caregiving conflict, potentially influencing hourly wages in the long run. Like in Chapters 2 and 4, the retrospective Dutch caregiving data is used (N = 1,417 caregivers). Caregivers are matched to similar non-caregivers and the differences between their wages are calculated. Those differences in wages are then related to the different life course factors in a linear regression model.

In the last study, Chapter 6, I turn to a subjective employment outcome that could be influenced by caregiving, namely job satisfaction. Taking into account the subjective consequences of unpaid caregiving for employment creates a framework in which both enrichment theory and conflict theory can be applied. Caregiving might reduce labor supply or lead to job changes, yet it can still bring positive aspects for job satisfaction. Enrichment is possible through learning new skills and by work being a respite from the sometimes burdensome caregiving tasks. Both enrichment and conflict can be stronger if more time is spent on caregiving. In this study, this is considered by relating changes in job satisfaction to the intensity of caregiving and whether caregiving was only for a short period of time or sequential (meaning both continued or reappearing caregiving). This is tested with fixed-effects panel analyses on the UK Household Panel 'Understanding Society', covering eleven years of 32,156 respondents (171,450 observations). Caregiving is coded so that the fixed-effect models relate changes towards more or longer caregiving to changes in job satisfaction.



Chapter 2

Strategies of Unpaid Caregivers to Adapt Paid Work



A slightly different version of this chapter is published as:

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The study on which this chapter is based was presented at the European Sociological Association (ESA) conference (online) on September 1st, 2021, the European Consortium of Sociological Research (ECSR) Annual Conference (online) on October 7th, 2021, and the workshop by the Max Planck Institute for Demographic Research on Life Course Analysis: Theoretical perspectives, methodological innovations, and empirical applications in Rostock on October 27th, 2021. The study received feedback from the Inter-university Working Group on Social Inequality and Life Courses (ISOL).

Abstract

Unpaid caregiving, meaning taking health-related care of an older and/or disabled person in the personal network, often has consequences for paid work. Classically, scholars focus on two strategies of unpaid caregivers to adapt employment: stopping to work and reducing working hours. Two other plausible, but neglected, strategies may similarly have career consequences, namely changing jobs and becoming self-employed. First, we empirically assess whether experiencing a work-care conflict is a condition for choosing a work adaption strategy. Second, we theoretically and empirically take a life course (i.e., age at start of caregiving episode) and gender perspective on strategies to adapt paid work. We use detailed retrospective data on unpaid caregiving in the Netherlands (N=3,673 caregiving episodes of 2,112 caregivers). Applying multilevel logistic regression analysis, we find that caregivers who felt that they had difficulties combining work and care, were more likely to choose any strategy. Especially caregivers who started to provide care at a young age (24 years or younger) were likely to reduce working hours or change jobs. When starting care in the early family formation stage (25-34 years), women were more likely to reduce working hours, whereas men were more likely to stop working in early middle age (45-54 years).

Introduction

Unpaid caregiving, meaning taking health-related care of older and/or disabled people in one's personal network, is known to stand in conflict with employment. This conflict can occur throughout one's entire working life as unpaid caregiving can intersect with work in different life stages and also multiple times (Fast et al., 2020). When experiencing a conflict between unpaid care and paid work due to role or time strain, unpaid caregivers may run into a situation where they need or want to adapt employment to better combine care and work. Yet, adapting paid work can have long-lasting consequences and come at a high cost, such as reduced (lifetime) wages or lower pension entitlements (Carmichael & Ercolani, 2016). To elucidate the mechanisms behind inequalities in the labor market between unpaid caregivers and non-caregivers it is, therefore, important to understand the strategies both female and male caregivers choose to adapt paid work in different life stages. In this exploratory study, we aim to provide theoretical and empirical insights into how unpaid caregiving influences employment over the life course and how that may differ for women and men. Thus far, scholars have focused on two strategies for unpaid caregivers to adapt their work: stopping work (including early retirement) and reducing working hours. They found that unpaid caregivers have a higher likelihood of doing both (Gomez-Leon et al., 2019; Hohmeyer & Kopf, 2020; Raiber, Verbakel, & Visser, 2022; Schmitz & Westphal, 2017; Van Houtven et al., 2013). There are, however, more options that caregivers can choose from, both in the caregiving and paid work domain. We add – theoretically and empirically – two strategies on the employment side, namely changing to a new job and becoming self-employed (Fast et al., 2013; Henz, 2004). These strategies are relevant for combining work and childcare (Abendroth et al., 2014) and likely similarly relevant for working unpaid caregivers. We transpose the existing theoretical arguments from the childcare literature on choosing different strategies to adapt paid work to the case of unpaid caregiving. These additional strategies were not or hardly considered so far when it comes to unpaid caregiving because survey data on unpaid caregiving most often lack information about these additional strategies. All four strategies likely impact future employment and can have long-lasting consequences, resulting in potential inequalities between caregivers and non-caregivers, which is why it is relevant to look at all four of these strategies to better understand the employment consequences of unpaid care (Carmichael & Ercolani, 2016).

We fill this gap in the literature and focus on the active use of all four strategies, using survey data on caregivers that include explicit information on the occurrence of employment changes *because of* unpaid care provision rather than assuming that care provision was the reason to adapt paid work. Explicitly asking if the work adaptation was because of providing unpaid caregiving has the advantage that (a) other reasons for adapting work (e.g., childcare duties) are excluded, and (b) the focus is on active and conscious decisions to adapt employment for the sake of caregiving. All in all, analyzing the active use of multiple strategies instead of only two enables us to provide a richer understanding of how unpaid care affects employment.

In the first step, we look into the assumption that caregivers decide to pursue any of the four strategies because they experience a work-care conflict. After establishing that a work-care conflict is indeed a relevant reason to adapt paid work, as assumed by role conflict theories, we describe under which conditions, based on cost-benefit considerations and social norms related to both caregiving and paid work, caregivers choose a certain strategy. We do so by looking at employment adaptation strategies from a life course perspective, more precisely the timing of unpaid caregiving in the life course, and a gender perspective. We also explore how both perspectives are interconnected as (a) unpaid caregiving may occur in different stages of a person's life and therefore variously intersects with other life domains (Fast et al., 2013; Fast et al., 2020; Moen & DePasquale, 2017; Raiber, Visser, & Verbakel, 2022), and (b) caregiving and involvement in paid labor are highly gendered (Smith et al., 2020).

Previous research showed that strategies with regard to reducing labor supply are more often chosen closer to retirement and by women (Henz, 2004, 2006; Moussa, 2019; Smith et al., 2020), giving the impression that caregivers in later life stages and women are more likely to adapt paid work because of care. Caregivers in earlier life stages and male caregivers can similarly experience a work-care conflict and, subsequently, adapt paid work because of that conflict, yet their strategy might just be a different one. The strategies that were traditionally studied in the literature are likely those that are picked most by older adults and women. Looking at the alternative strategies (changing jobs or becoming self-employed), which were not observed in prior studies, could reveal that younger caregivers and men also adapt paid work, which then potentially has consequences for their career prospects as well. Put together, we explore to what extent caregivers (a) reduce working hours, (b) stop work, (c) change jobs, and (d) become self-employed if they experience high work-care conflict. We further explore whether the use of these strategies depends on the life stage in which a caregiving situation starts and whether female or male caregivers use different strategies.

We use retrospective primary data on unpaid caregivers in the Netherlands, collected among the sample of the Longitudinal Internet studies for the Social Sciences (LISS). We perform multilevel logistic regression analysis on 3,673 caregiver episodes of 2,112 caregivers who worked (at least for some time) while caregiving. Our observation window ranges from the first caregiving episode reported in 1954 until the moment of the survey in 2020. This unique dataset, based on a representative sample of the Dutch population, contains detailed information on past and current caregiving situations as well as a measurement of the active use of strategies to adapt paid work for separate caregiving episodes.

The Work-Care Conflict

Caregiving may not only have a negative influence on the caregiver but also may have positive effects, such as personal growth (Pysklywec et al., 2020). Adapting paid work because of unpaid caregiving may relieve stress and a life with paid work and care combined can be more fulfilling. However, to choose a work adaptation strategy, there

must be some kind of work-care conflict where the caregiver is not able to satisfactorily combine caregiving duties with employment. Caregiving can conflict with paid work when the new social role – the role of caregiver – is competing with the work role (Greenhaus & Beutell, 1985). Care and paid work then compete both role- and time-wise. Three proximate causes of work-care conflict are generally distinguished: *role strain*, *time constraints*, and *contradicting behavior* (Greenhaus & Beutell, 1985). *Role strain* means that worries of one role can spill over to another, making both roles more difficult and resulting in role strain. *Time constraints* refer to one role taking up too much time, not leaving sufficient time for the other role(s) as one can only devote time to one role at a time. *Contradicting behavior* implies that behavior and tasks in one role contradict the behavior and tasks in the other role(s), which makes the roles incompatible (e.g., emotional closeness expected in the care role but emotional distance in the work role, Greenhaus & Beutell, 1985). For all three reasons, if the work-care conflict is getting too strenuous, caregivers have to decide how to handle it (Lilly, Laporte, & Coyte, 2007). If a caregiver comes into a situation where care and paid work interfere to a worrisome level, either role- or time-wise, the caregiver might adapt paid work by considering the use of one of the here discussed strategies.

The Decision-Making Process

Choosing a certain strategy to adapt paid work is not easily done and it is a process during which alternative options are weighted, including choosing none of the here-discussed strategies. Not choosing a certain strategy represents situations in which the caregiver (a) has changed nothing at all, (b) has chosen a non-work-related strategy (e.g., changing the care situation), and/or (c) has chosen an alternative employment strategy (which we do or do not observe in this study). This means that not choosing a certain strategy not only includes alternative strategies but also the option of not changing anything, which directs the attention to the active decision to use that particular strategy.

The theory of compensating differentials states that workers are willing to give up some of their employment prospects for better working conditions (Yu & Kuo, 2017). Caregivers can use different strategies to lower the work-care conflict and have better working conditions to provide care. Reducing labor supply by reducing working hours or stopping paid work altogether is examined most often in the unpaid care literature and the relationship between unpaid caregiving and reducing labor supply is supported by many empirical studies (Gomez-Leon et al., 2019; Hohmeyer & Kopf, 2020; Pavalko & Henderson, 2006; Raiber, Verbakel, & Visser, 2022; Schmitz & Westphal, 2017). A reduction of working hours or dropping out of employment can normally be arranged with the employer relatively quickly, thus offering an immediate reduction of the work-care conflict. Reducing labor supply, however, comes at the price of reduced monthly income and long-term negative consequences for the work career, such as fewer promotion opportunities and reduced pensions. Stopping paid work completely is then the more extreme form of labor supply reduction while reducing working hours is a less extreme one, particularly in the Dutch context with a large share of part-time workers (Hartog & Salverda, 2018).

In contrast to strategies that reduce the salience of the work role, caregivers might choose strategies that do not diminish the work role but still have the potential to lower the work-care conflict. The first additional strategy, argued for in the childcare literature, is changing to another job that is easier to combine with unpaid care (Abendroth et al., 2014; Arai, 2000; Looze, 2017). As proposed in the theory of compensating differentials, caregivers might be willing to give up favorable features of their current job if their new job has better conditions to combine it with care provision, such as flexible working hours or an employer who has more understanding of what it means to be a caregiver (Yu & Kuo, 2017). However, finding a new job requires time and energy and could include the need to move. It may additionally bring the risk that caregivers harm their future employment because they choose less demanding jobs that are often associated with lower status and fewer career development opportunities (Abendroth et al., 2014; Arai, 2000).

Also discussed in the childcare literature is the strategy to become self-employed as it promises even more flexibility by choosing when and where to work (Arai, 2000; Budig, 2006; Lim, 2019; Matysiak & Mynarska, 2020). This is again a strategy that may make paid work and care more compatible but is also considered risky because starting your own company may fail and earnings are volatile (Ferrín, 2021). Becoming self-employed also requires energy, time, and financial investments (Conen & Debets, 2019). Especially for the solo self-employed, (the need for) higher earnings directly require long working hours (Arai, 2000). Furthermore, there are no mandatory disability and retirement schemes for the self-employed in the Netherlands (Conen & Debets, 2019). Self-employed persons have to arrange such (expensive) insurance themselves while wanting to invest profits into their company.

We consider four major factors influencing caregivers' decision-making concerning paid work adaptations and choosing a certain strategy. Each of these factors presumably works out differently depending on the caregiver's life stage and gender. We introduce the four factors here more generally and, in the next section, we relate them in more detail to life stage and gender. The first factor comprises family circumstances, other than the unpaid care provision, that may add to the work-care conflict, such as having young children. The second factor is caregivers' (personal, household, or network) financial resources that determine to what extent changes in paid work can be afforded. For certain strategies to be chosen, like becoming self-employed, more financial resources are needed, meaning that caregivers have to weigh the benefits of choosing certain strategies against the costs of worse labor market outcomes (e.g., potentially lower wages). The third factor relates to norms and expectations regarding unpaid caregiving as well as employment (Hamilton & Adamson, 2013). The fourth factor is about the employers' views on work commitment. People who show that they value something in their private sphere over work, such as caregiving, can deviate from 'the ideal worker' norm and be seen as less committed to paid work and this may have long-lasting consequences in the labor market (Ehrlich et al., 2019; Minnotte & Minnotte, 2021).

Gender and Life Stage

Life stages are highly gendered (Moen, 2001; Patterson & Margolis, 2019). Women and men in different life stages are in different relationships and social dependencies, especially when it comes to work and care (Moen, 2001). This implies different costs and benefits for men and women in choosing a certain strategy versus not choosing it. Similarly, there are norms on what men and women should do in the work and care domain. In the Netherlands, a country that still has traditional gender roles, women are generally seen as the primary caregiver and less involved in the workforce, whereas men are stereotypically the breadwinner who tends to value paid work over care (Kaufman & Uhlenberg, 2000; Smith et al., 2020; Vink, 2020). These views are internalized by male and female caregivers as well as employers, who might interpret a work reduction by men as a stronger sign of being less committed than for women as a result of deviating from the breadwinner norm (Cooklin et al., 2016). As a result, men could be more prone to pick strategies that keep a focus on paid work while combining it with care, that is, changing jobs and becoming self-employed. Women, in contrast, may be more likely to choose strategies that emphasize their care role by reducing work. However, these general explanations on gender differences are expected to be conditional on the life stages, which we discuss in the following after we explained the general mechanisms underlying the relation between each life stage and potential work adaptations.

We distinguish five life stages in which unpaid caregiving can start: (1) Young caregivers (24 or younger), (2) early family formation stage (25 to 34)⁸, (3) late family formation stage (35 to 44), (4) early middle age (45 to 54), and (5) late middle age (55 and older). Young caregivers form a special group because they started caregiving while still deciding on a job (Hamilton & Adamson, 2013) and are in a life stage in which caregiving is not yet socially expected (Bertogg et al., 2020). Young caregivers typically have fewer other responsibilities, such as childcare or financial expenses, which results in less dependence on their income, so fewer factors on the cost side to adapt work for care compared to other life stages. They are also more flexible to move to another location for a job. Nevertheless, young caregivers might focus more on educating themselves, gaining work experience, and developing relevant skills to find stable employment (Abendroth et al., 2014). For this age group, having few employment interruptions is important for accumulating human capital. Losses in or limited accumulation of human capital early in the work career can accumulate over the life course and set people back (Crystal, Shea, & Reyes, 2016). Thus, this (young) age group has to balance the need to improve their labor market position with the possibility to adapt paid work as they are less dependent on their income and have fewer restrictions in finding a new job or becoming self-employed. Because men and women in this life stage do not differ much in terms of resources and (own and employers') expectations are not highly gendered in this pre-family life stage, gender differences are expectedly relatively small in this life stage.

⁸ This is a reasonable age range considering the Dutch context. On average, both women and men have their first child within this age range and the majority of people who can afford buying a house has already done so (Statistics Netherlands (CBS), 2018, 2019). Shifting the scale up by two years (first category till 26) did not change our main results.

Caregivers in the early family formation stage may have a stronger focus on investing in employment and career building, as it is still early in their work career, yet they are also planning a family (Fast et al., 2020). This not only includes having children but might also mean buying a house and obtaining a mortgage (Keijer, Nagel, & Liefbroer, 2016). Combining the unpaid caregiving role, employment, and care for young children can create a so-called 'triple burden' with additional time issues and more strain, leading to even more work-care conflict (Brenna, 2021). Caregivers, as well as employers, might expect a work reduction in this life stage, but likely due to childcare and less as a result of unpaid care. Caregivers in the early family formation stage might not be able to afford to lose part of their income because of (further) reducing labor supply, yet cannot afford to do so career-wise, thus have higher costs of reducing labor supply compared to other life stages. It is likely that they choose a strategy that enables them to combine paid work and care, like changing jobs or becoming self-employed. Self-employment is arguably less favourable compared to switching jobs in this life stage as self-employment takes time and financial resources that might not be available. In this life stage of early family formation, men and women typically start following gendered paths more strongly than earlier in life. Partly as a result of this, men earn more than women, which makes it more costly for men to reduce their labor supply (Blau & Kahn, 2017). Strategies that maintain a strong focus on the work role will therefore presumably be more prominent among men than among women.

In the late family life stage, raising children and advancing in one's career is still relevant (Fast et al., 2020), but caregivers might be a bit more established in the labor market and children are getting older, decreasing the triple burden. Therefore, changing jobs (and to some extent self-employment) might still be a better option in the late family stage, though the need to combine paid work and care might be slightly less than in the early family formation stage. The late family life stage is still, but less compared to the early family stage, gendered with women potentially experiencing a greater 'triple burden' and men typically fulfilling the breadwinner role.

Early and late middle age are the life stages in which it is typical and expected to care for someone in the personal network (Fast et al., 2020). In both age groups, employment is usually more stable and work careers are in a more advanced stage. Other obligations (e.g., paying a mortgage) may become less important, which makes labor supply adaptations more affordable for some. Especially caregivers in late middle age are getting closer to their retirement and have comparably less to lose if they are reducing paid work because of unpaid caregiving because they typically do not make big career steps anymore or they paid sufficient pension contributions to receive their desired level of pension income (Damman, Henkens, & Kalmijn, 2013). Changing jobs is arguably the less likely route because caregivers who are already near retirement might be less willing to do so due to the higher risks and the efforts involved in searching for another job. They also have fewer chances of finding a new job compared to younger people related to stereotypical views of older workers or less time for employers to get returns for investing in workers closer to retirement (Wanberg, Kanfer, Hamann, & Zhang, 2016). Becoming self-employed could be an alternative for people in these life stages as they,

or their partner, could have the required financial resources and work experience to take this risk. Contrastingly, setting up a business takes time before it becomes profitable, making it less attractive for these age groups as retirement is nearing. As care for children is not central anymore in this life stage and – under the condition that the household income level is satisfactory – the breadwinner role becomes less pressing, that is, men and women may experience and feel less pressure to follow traditional gender roles. Similarly, women and men might have already chosen gendered career paths in previous life stages and arranged alternative pension resources (like relying on the pension of their partner). We, therefore, believe that gender differences in the strategies chosen may be limited in this life stage.

Methods

Data

The empirical analysis was conducted on a sample of caregivers retrieved from the Longitudinal Internet studies for the Social Sciences (LISS), administered by CentERdata (Tilburg University, the Netherlands). The LISS respondents are based on a representative sample of the Dutch population (see www.lissdata.nl and Scherpenzeel & Das, 2010 for more information). The analysis is based on an additional module named ‘Retrospective informal care career’ (Verbakel & CentERdata, 2021). All LISS respondents were asked in January 2020 if they care or ever cared for someone in their personal network (response rate 83%, 5,315 respondents).⁹ Those who answered ‘yes’ (71%) and were aged 16-78 were asked retrospective questions about up to seven unpaid caregiving episodes in March 2020¹⁰ (response rate 87.5%, 3,061 respondents¹¹). For a maximum of three episodes, respondents provided detailed information, including questions on employment during the caregiving episode. If more than three episodes were indicated (in 26% of the cases in our sample), three episodes were randomly chosen. Retrospective data have been criticized for relying too much on the memory of the respondent; respondents would not be able to recall all their past activities (so-called ‘recall bias’, see Kjellsson, Clarke, & Gerdtham, 2014). We are confident this is less of an issue in the current study as adapting work because of care is a very active and consequential decision, most likely remembered by respondents. Caregiving episodes that might have been forgotten are likely caregiving episodes with lower intensity and work-care conflict (Fast et al., 2020).

⁹ Survey question: “Below we will ask you to indicate all the people known to you to whom you have ever offered informal care on account of their health issues. These people could be your partner, a family member, a friend, neighbor, acquaintance or colleague who needs or needed help because of physical, psychological or mental limitations or because of old age. Examples of informal care are doing household chores, helping with washing and dressing, keeping company, providing transport or performing odd jobs. You may have done so for a short period or for a long period. It could involve people known to you to whom you provided care in the past, but could also involve people known to you to whom are providing care at present. Care provided as part of your occupation or as a volunteer does not count. Please take a moment to think about the people known to you to whom you have provided or are providing informal care on account of health issues.” (Verbakel @ CentERdata, 2021).

¹⁰ Raiber, Verbakel, and Visser (2021) found that the start of the COVID-19 pandemic in March 2020 did not influence the answer patterns regarding ongoing caregiving episodes.

¹¹ Those not in the final sample even when indicating caregiving in the January questionnaire were not significantly different in age or sex compared to the respondents in the final sample.

Sample Selection

We only selected caregiving episodes of caregivers when (a) the extended questionnaire – including the questions on paid work – was filled in (up to three random episodes), (b) the age at onset of unpaid care provision was before retirement (65 or younger), and (c) the caregiver worked at some point during the caregiving episode. Caregivers were excluded if no start or end date of the first care episode was available as no caregiving episodes could be constructed (38 caregiving episodes of 38 caregivers excluded). If the start date was before the birth date of the respondent or below the age of five, the caregiving episode was excluded because these values were considered unrealistic and likely measurement errors (12 caregiving episodes of 7 caregivers). Note that changing the lower limit to 10 years did not change our results and that even if the caregiving started at age 5 or above the episode was only included when the caregiver also experienced employment at any time during the episode (point c above). In case the caregiving episode was not identifiable as unpaid care (but for instance as paid care work or formal volunteering), we excluded the episode (86 caregiving episodes of 35 caregivers excluded). Finally, after the deletion of missing values (1.42%, 53 caregiving episodes) our final sample consisted of 3,673 caregiving episodes nested in 2,112 caregivers. For 57% of respondents, we have the extended information (including work adaptations) on one episode, for 30% on two, and for 13% on three episodes.

Measures

Dependent variables. Caregivers were asked the following survey questions:

*“Did your work situation change at any point **because of** the care you provide(d) to << name care recipient>>? (a) Did you start working fewer hours? (b) Did you stop working? (c) Did you start doing different work? (d) Did you start working in self-employment? (e) Did you stop attending an education program?”*

We only considered questions (a) to (d) as they relate to work outcomes. We created a dummy for each of the four strategies separately, assigning the value 1 if a strategy was used and 0 if a strategy was not used. This coding decision matches our goal to assess whether the strategy was chosen compared to the same strategy not chosen.

Main predictors. The first set of predictors relates to the causes of work-care conflict. Our first main predictor was caregiving intensity, measured as the average hours of providing care per week between the start and end of a caregiving episode, divided by ten hours for ease of interpretation in the multiple regression models. We expect a non-linear effect of intensity because the more hours of care, the weaker the impact (e.g., the difference between 50 and 51 hours may matter less compared to the difference between 1 and 2 hours). This is why we included a squared term. Caregiving tasks were measured as the sum of tasks provided at the beginning of the caregiving episode, with a maximum of nine tasks, which were: companionship or emotional support, transportation, assistance when visiting a doctor, administrative help, housekeeping, personal care, nursing care, arranging or coordinating care, and/or other tasks. Difficulties to combine work and care were measured on a 5-point Likert scale, ranging from completely disagree to completely

agree on the following item: “I find/found it stressful to combine my work with providing care to <<name care recipient>>”.

The timing of the caregiving episode was included as the life stage in which the episode started. We created five distinct life stages: (1) below the age of 24 (young caregivers, with a minimum age of 5), (2) between the age of 25 and 34 (early family formation stage), (3) between the age of 35 and 44 (late family formation stage), (4) between the age of 45 and 54 (early middle age), and (5) between the age 55 and 65 (late middle age, with the maximum age corresponding to the state pension age). For the variable biological sex of the respondent, we used the predefined variable from the LISS panel, coded man (0) and woman (1).

Control variables. At the caregiving episode level, three variables, all measured at the end of the caregiving episode, were used to indicate the health status of the care recipient: (a) an indicator of dementia (no memory problems, some memory problems, or serious memory problems), (b) an indicator of mental health problems (no mental health problems, some mental health problems, or serious mental health problems), (c) and an indicator of physical health problems, measured by the sum of daily activities the care receiver had difficulties with (IADL and ADL, specifically: problems with walking, dressing, eating, housekeeping, grocery shopping, or preparing meals). The relationship of the caregiver to the care recipient, related to (gendered) norms about adapting work for care and differences between people who need care in these categories, was measured with three categories: (1) close family, including partner, (step-)parents(-in-law), and (step-)children (with health issues; so not regular childcare), (2) other family members, and (3) friends or neighbors. Three life course controls were added: duration of the caregiving episode was measured as the time in years between the start and end date of the caregiving episode. If the caregiver was still providing care at the moment of the interview, the interview date was taken as the ‘end’ date. Order refers to the chronological order of the particular episode in the caregiver’s life course, with seven episodes being the maximum. We additionally took into account potential period effects by controlling for the middle calendar year of the caregiving episode as (gendered) norms and values towards work and care changed over time.¹²

Employment-related adaptations depend on factors beyond gender and the life stage in which care is given, such as occupation, socioeconomic status, a partner providing alternative income, and support of other people in the social network. Many of these factors were not available retrospectively for the observation window. Yet, at the caregiver level, we controlled for the highest obtained educational level of the caregiver at the time of the survey to account for socioeconomic status, potentially fewer resources to finance formal care, and for the feasibility of certain strategies.¹³

¹² Choosing the start year of the episode instead of the middle year did not change the results.

¹³ Education is partly related to some of the theoretical mechanisms and might mediate our main relationships. Excluding education did however not alter our findings.

Analytical Strategy

To account for the hierarchical structure of our data in which caregiving episodes were clustered in caregivers, we performed multilevel logistic regression analysis (melogit in STATA 17; significant intraclass correlation coefficients for empty models for reducing working hours: 0.54, stopping to work: 0.61; changing jobs: 0.61; becoming self-employed: 0.77). In four separate models, we regressed each of the four strategies on the indicators of work-care conflict, life stage, gender, and control variables. This means we compared caregivers who chose a certain strategy to caregivers not having chosen that strategy. For the presentation and interpretation of the results, we used marginal effects at the mean (MEM) (Mood, 2010). We included random coefficients for the life stage dummy variables in the models that estimated interactions between life stages and gender. Yet, these models only converged when all variances were kept equal and covariances were set to zero (predefined option in melogit), except for the model on becoming self-employed which did not converge even with equal variances. Thus, for the model on self-employment, we present the results from the model without random slopes.

Results

Descriptive and Bivariate Results

Caregivers adapted their work because of caregiving by using at least one strategy in 10.8 % of their caregiving episodes. At first glance, this number seems low. Other scholars reported substantially higher adaption rates for unpaid caregivers. For instance, 30% of caregivers made a change in the work domain in Great Britain in 1994-95 (Henz, 2004) and 20% of caregivers in Canada in 2007 (Fast et al., 2013). In contrast to previous research, we included caregiving episodes over the complete past of a person, meaning that also caregiving episodes of short length were included, which could explain the lower work adaption rate. On average, caregivers indicated that they felt difficulties with combining work and care in 17.2% of the caregiving episodes, partly explaining the lower rate of adaptations compared to previous research. Additionally, as some caregiving episodes did not end at the moment of the interview, the number of adaptations might in reality be slightly higher. Among those caregivers choosing at least one strategy, 73.6% chose only one strategy and 26.4% chose multiple ones (18.6% chose two, 6.0% three, and 1.8% all strategies).

Table 2.1 | Descriptive statistics

	Range	Percentage	Mean	S.D.
Level 1 – Caregiving episode (N=3,673)				
Reducing working hours	0/1	7.35		
Stopping work	0/1	3.81		
Changing jobs	0/1	1.74		
Becoming self-employed	0/1	1.82		
Average intensity in hours per week	1-168		7.85	14.89
Sum provided tasks	1-9		2.79	1.58
Difficulties combining work and care	1-5		2.15	1.19
Start of caregiving episode				
young caregivers	0/1	23.11		
early family formation	0/1	22.95		
late family formation	0/1	23.03		
early middle age	0/1	21.32		
late middle age	0/1	9.58		
Memory problems				
no problems	0/1	55.59		
some problems	0/1	25.73		
serious problems	0/1	18.68		
Mental health problems	0			
no problems	0/1	62.35		
some problems	0/1	28.04		
serious problems	0/1	9.61		
Problems with (instrumental) daily activities	0/6		2.20	2.07
Relationship type				
close family	0/1	65.15		
other family	0/1	17.07		
friends or neighbors	0/1	17.78		
Duration in years	0.83-66.25		6.50	8.47
Order	1-7		1.97	1.28
Middle year of the episode	1964-2020		2011	9.66
Level 2 – Caregiver (N=2,112)				
Sex				
men	0/1	43.32		
women	0/1	56.68		
Education				
primary school	0/1	4.26		
intermediate secondary education	0/1	16.48		
higher secondary education	0/1	9.14		
intermediate vocational education	0/1	26.75		
higher vocational education	0/1	30.30		
university	0/1	13.07		

Table 2.1 shows descriptive information on all variables. As expected in the Dutch context, a context where reducing working hours is relatively easily realized, reducing working hours happened most often, namely in 7.3% of the caregiving episodes. Stopping to work occurred in 3.8% of caregiving episodes, changing jobs in 1.7% of caregiving episodes, and becoming self-employed in 1.8% of caregiving episodes. The caregiving episodes started almost equally often in different life stages (between 21.3% and 23.1% for each life stage), with the exception that caregiving episodes started least often in late middle age (9.6%). This might sound surprising as we know from the literature that caregivers are on average middle-aged (De Boer, de Klerk, Verbeek-Oudijk, & Plaisier, 2020). Note that the numbers presented here are based on a retrospective data collection where we asked caregivers – of different ages – when their caregiving episodes started. Our sample of caregivers is on average 53 years old with over half of the respondents being older than 55, so half of the respondents could not have an episode starting after age 55. Furthermore, we focus on the starting age of caregiving, meaning that respondents older than 55 who are currently caregiving still could have started their caregiving before this age.

Work-care conflict. Regarding our measures of work-care conflict, we see that caregivers who used a strategy cared for more hours, had more tasks, and felt more difficulties in combining work and care. Figure 1 displays the average intensity, number of tasks, and difficulties combining work and care by strategy chosen versus not chosen. For becoming self-employed, the differences were smallest, but with still a notable difference in intensity. All bivariate differences were significant on the 5%-significance level based on t-tests, except for the relationship between the number of tasks and becoming self-employed.

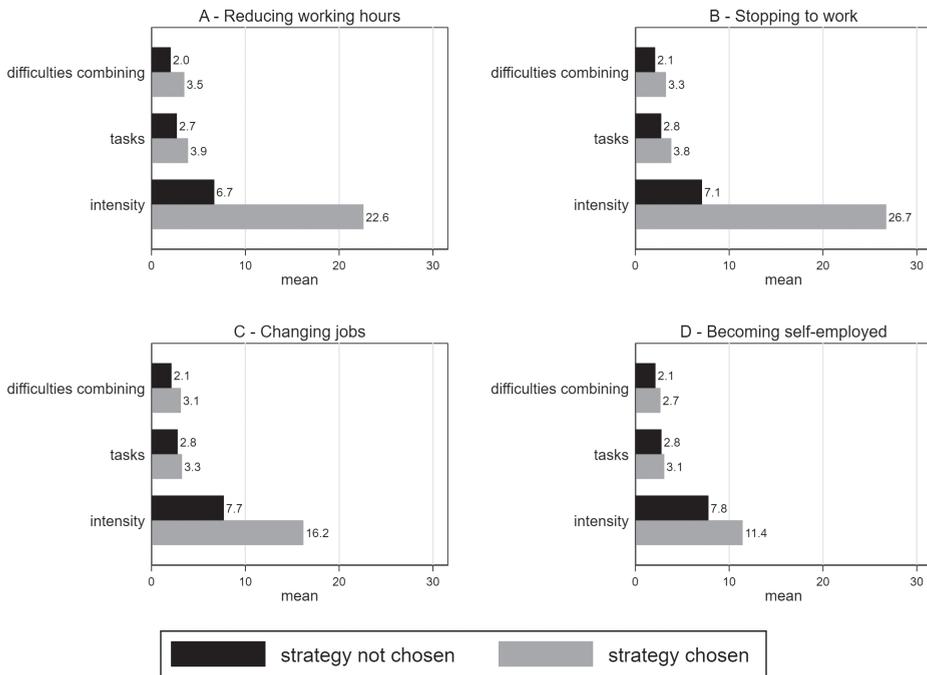


Figure 2.1 | Average values of intensity, number of tasks, and difficulties combining work and care for caregiving situations in which the strategy was (not) chosen. N=3,673 caregiving episodes of 2,112 caregivers. All differences were significant ($p < 0.05$), except for the number of tasks for becoming self-employed.

Life stages. Overall, bivariate relationships between the life stages and reducing working hours, stopping to work, and becoming self-employed were non-significant based on Pearson's chi2 tests, but significant for changing jobs ($\text{chi}^2=16.2$, $p=0.003$). Some of the descriptive values lie close to each other, meaning that differences are in general relatively small (see Figure 2.2). Reducing working hours was the most prevalent in caregiving episodes that started in the oldest as well as the youngest life stage (7.9% for both), followed by the late family formation stage, early middle age, and the least in the early family formation stage (6.4%). Caregivers who started in early middle age stopped working the most (4.9%), followed by late middle age (4.8%) and then young caregivers (3.8%). Changing jobs was most likely in caregiving episodes that started in the youngest life stage (3.2%). Caregivers in episodes that started in the early family stage chose to change jobs in 1.9% of the episodes, in the late family stage in 1.3% of the episodes, and in early and late middle age in less than 1% of the episodes. Last, we observed some small differences between the life stages for becoming self-employed, with late middle age being the life stage in which self-employment was chosen the most.

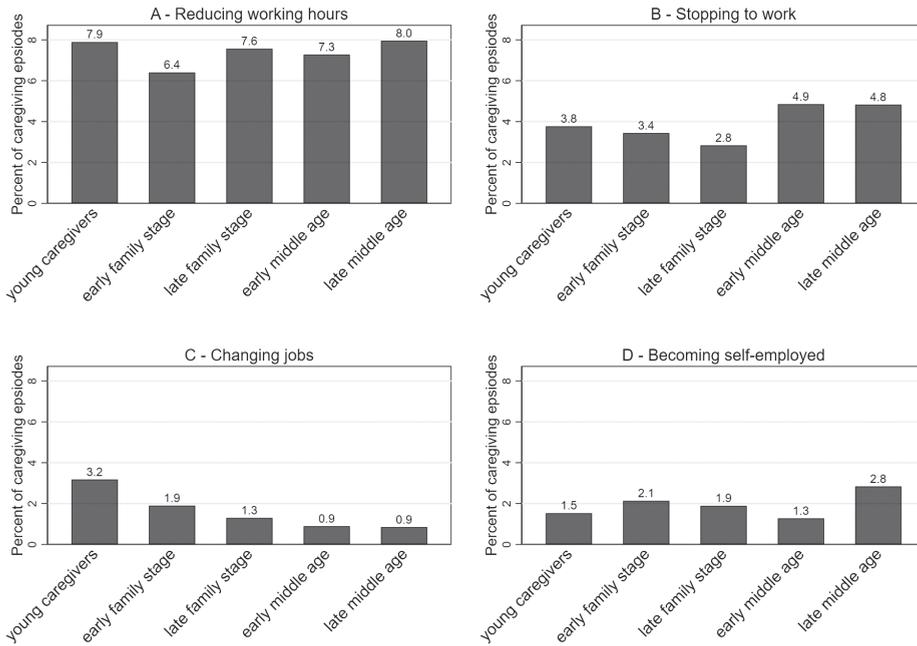


Figure 2.2 | Percentage of caregiving episodes in which the strategy was chosen by life stage. N=3,673 caregiving episodes of 2,112 caregivers. Differences between life stages are rather small and only for changing jobs, the life stages are distinct from each other on a 5%-significance level.

Gender. We observe that reducing working hours was chosen in 7.8% of caregiving episodes of women and 6.6% of the episodes of men (see Figure 2.3). There was no difference in stopping to work between women and men, both in 3.8% of their caregiving episodes. Changing jobs was chosen in 1.9% of the caregiving episodes of men, whereas women were slightly less likely to change jobs (1.7 %). Becoming self-employed was chosen more often by men (2.1% of their episodes) than women (1.7 % of their episodes). There were, however, no significant bivariate associations between the sex of the respondent and any of the four strategies based on chi2 tests.

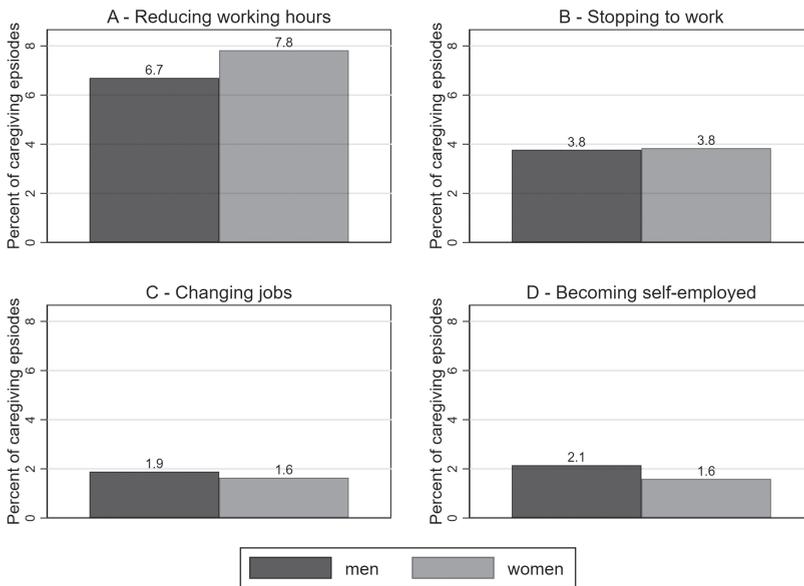


Figure 2.3 | Percentage of caregiving episodes in which the strategy was chosen by sex. N=3,673 caregiving episodes of 2,112 caregivers. Differences were not statistically different on a 5%-significance level.

Work-care conflict by life stage and gender. By running bivariate linear regressions with clustered standard errors, we found that caregiving episodes that started in the young caregiving stage were characterized by lower intensity (compared to the early family formation stage and early middle age), fewer tasks (compared to all life stages except late middle age), and fewer difficulties with combining work and care (compared to the late family formation stage and early middle age). Women experienced, on average, higher caregiving intensity and had more difficulties with combining work and care.

Multiple Regression Results

Work-care conflict. We see that for all four strategies, higher work-care conflict was positively related to the likelihood that a certain strategy was chosen. Experiencing difficulties in combining work and care was the most predictive of choosing any of the four strategies. A one-point increase on this scale increased the likelihood to reduce working hours by 3 percentage points, the other strategies all by 1 percentage point. The results further show that a ten-hour increase in intensity increased the likelihood to reduce working hours and stop working by 3 percentage points for reducing hours and 1 percentage point for stopping work. Every additional task increased the likelihood to reduce working hours by 1 percentage point.¹⁴

¹⁴ When excluding the item on felt difficulties to combine work and care, intensity became a significant predictor of changing jobs, and tasks became a significant predictor of stopping to work.

Table 2.2 | Multilevel logistic regression analysis of reducing working hours, stopping to work, changing jobs, and becoming self-employed

Predictors	Reducing working hours		Stopping to work		Changing jobs		Becoming self-employed	
	MEM	SE	MEM	SE	MEM	SE	MEM	SE
Average intensity divided by 10	0.03***	(0.00)	0.01***	(0.00)	0.00	(0.00)	0.00	(0.00)
Squared intensity	-0.00***	(0.00)	-0.00**	(0.00)	0.00	(0.00)	-0.00	(0.00)
Sum provided tasks	0.00*	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Difficulties combining work and care	0.03***	(0.00)	0.01***	(0.00)	0.01***	(0.00)	0.01**	(0.00)
Start of caregiving (ref. young caregivers)								
early family form.	-0.03*	(0.01)	-0.01	(0.01)	-0.01	(0.01)	0.01	(0.01)
late family form.	-0.03*	(0.01)	-0.01	(0.01)	-0.02**	(0.01)	0.01	(0.01)
early middle age	-0.03**	(0.01)	0.00	(0.01)	-0.02**	(0.01)	-0.00	(0.01)
late middle age	-0.02	(0.01)	0.01	(0.01)	-0.02**	(0.01)	0.01	(0.01)
Women (ref. men)	-0.00	(0.01)	-0.00	(0.00)	-0.00	(0.00)	-0.01	(0.01)
Memory problems (ref. none)								
some problems	-0.01	(0.01)	-0.00	(0.00)	0.01	(0.00)	-0.01	(0.00)
serious problems	-0.00	(0.01)	0.01	(0.01)	-0.00	(0.00)	-0.01	(0.01)
Mental health problems (ref. none)								
some problems	0.00	(0.01)	-0.00	(0.00)	-0.00	(0.00)	0.00	(0.01)
serious problems	-0.01	(0.01)	-0.01	(0.01)	0.00	(0.01)	0.00	(0.01)
Problems with daily activities	0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Relationship (ref. close family)								
other family	-0.01	(0.01)	0.00	(0.01)	0.00	(0.00)	0.00	(0.01)
friends or neighbors	-0.02*	(0.01)	0.00	(0.01)	-0.00	(0.00)	0.00	(0.01)
Duration in years	-0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Order	-0.00	(0.00)	-0.00	(0.00)	-0.00*	(0.00)	-0.00	(0.00)
Middle year of the episode	0.00**	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Education (ref. primary educ.)								
intermediate secondary	-0.01	(0.02)	0.00	(0.01)	-0.00	(0.01)	-0.00	(0.02)
higher secondary	0.01	(0.02)	-0.01	(0.01)	-0.01	(0.01)	-0.01	(0.02)
intermediate vocational	-0.01	(0.02)	-0.00	(0.01)	-0.01	(0.01)	-0.02	(0.02)
higher vocational	0.00	(0.02)	0.01	(0.01)	-0.01	(0.01)	-0.01	(0.02)
university	0.00	(0.02)	0.00	(0.01)	-0.01	(0.01)	-0.01	(0.02)

*** p<0.001; ** p<0.01; * p<0.05, MEM = marginal effects at the mean, SE = standard error, N=3,673 episodes of 2,112 caregivers

Life stages. The results for the different life stages are presented in Figure 2.4. For stopping to work and becoming self-employed, it did not matter in which life stage the caregiving episode started. Yet, young caregivers were 3 percentage points more likely to reduce working hours compared to three of the other life stages, that is, the early family formation stage, late family formation stage, and early middle age. No other statistical differences were detected for reducing working hours. In a similar vein, young caregivers significantly differed from people in other life stages when it came to changing jobs. Young caregivers had a 2 percentage point higher likelihood to change jobs compared to the late family formation stage and caregivers in early and late middle age.

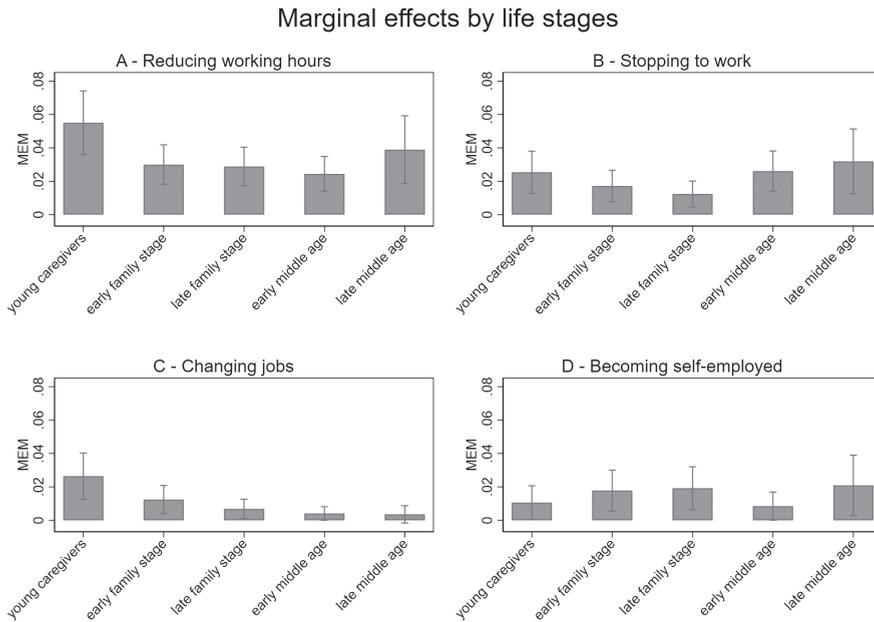


Figure 2.4 | Marginal effects at the mean for choosing a strategy by life stage. $N=3,673$ caregiving episodes of 2,112 caregivers. Life stages are significantly different from each other if the 95% confidence interval does not overlap with that of the other category.

Excluding the work-care conflict indicators (intensity, tasks, and having difficulties combining paid work and care) did not change the results for stopping work, changing jobs, and becoming self-employed (see Table A1 in the appendix). The difference between young caregivers and the other life stages in their likelihood to reduce working hours became non-significant, indicating that only when keeping work-care conflict stable, did some of the differences between the life stages become apparent. This hints at the following: only if caregivers with similar levels of work-care conflict were compared, we were able to observe that young caregivers were more likely to reduce working hours; in the bivariate results this tendency was masked by the fact that young caregivers on average experience less work-care conflict.

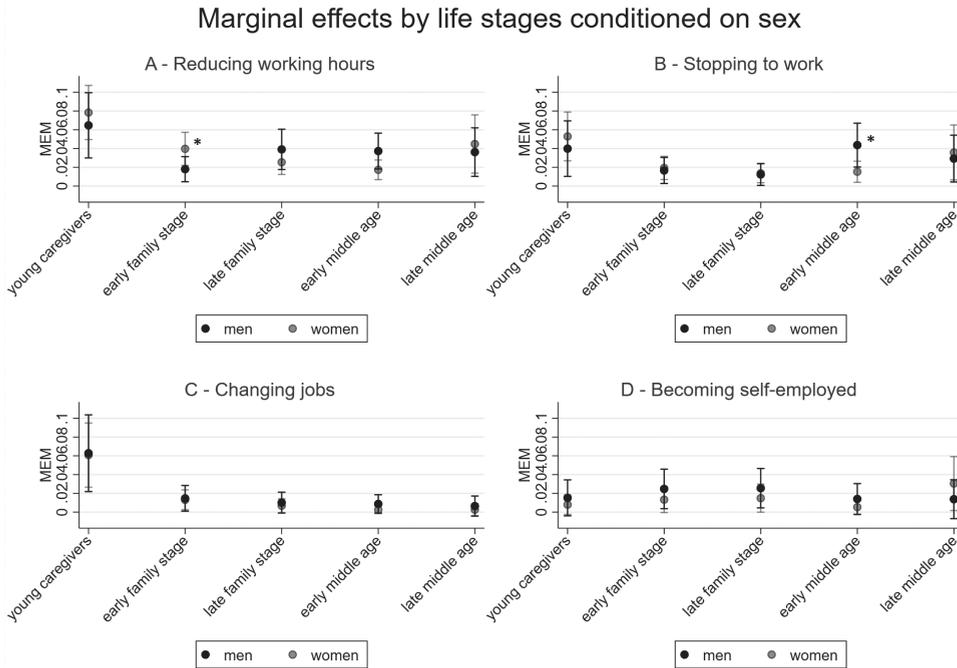


Figure 2.5 | Marginal effects at the mean for choosing a strategy in a certain life stage conditioned on sex. N=3,673 caregiving episodes of 2,112 caregivers based on the models presented in Table A2 in the appendix. Significant differences between men and women are highlighted by asterisks (* p<0.05).

Gender. Table 2.2 shows there were no statistical differences between women and men in choosing a given strategy. When looking at the interactions between sex and life stage (see Figure 2.5 and Table A2 in the appendix), we observe that an average woman was significantly more likely compared to an average man to reduce working hours by 2.2 percentage points in the early family stage. Contrastingly, men were 2.8 percentage points more likely than women to stop working in early middle age.

Conclusion

Starting to provide unpaid care means taking on a new role. Time and energy that before was available for other roles are reduced. A role that may get into conflict with the role of caregiver is the work role. In this study, we found that caregivers who experienced stronger work-care conflict were more willing to adapt paid work because of caregiving, supporting role conflict theories (Greenhaus & Beutell, 1985). Adding to existing literature, we not only considered the two typical strategies (reducing work hours and stopping to work) but added two alternative strategies related to the work sphere that

unpaid caregivers can also use when they work and care at the same time: changing jobs and becoming self-employed. We proposed that in the decision process to choose or not to choose a certain strategy, it is important to consider the life stage in which a caregiving episode started, the caregivers' gender, as well as the interaction between life stages and gender. We found that reducing working hours was associated with the timing of the start of the caregiving episode as this strategy was especially prevalent in caregiving episodes that started in the earliest life stage (age 24 or younger). Changing jobs was similarly more likely in the earliest life stage. For the other two strategies, stopping to work and becoming self-employed, we did not find an association with the life stage in which the episodes began. This shows that especially young caregivers need to and are more willing to reduce working hours or change jobs under the condition of an experienced work-care conflict. Theoretically, this finding may be interpreted as young caregivers being less dependent on their income and more flexible to change to another job, potentially by moving to another location for that new job. In later life stages, reducing working hours or switching jobs might not form a good alternative as caregivers are then too dependent on the income provided by paid work and/or are too settled or not flexible enough to relocate for a new job. This could mean that not choosing any strategy is then the better option compared to choosing a strategy with too many perceived disadvantages.

Regarding gender, we did not find indications that female and male caregivers generally made different decisions when it came to the strategies. What we did see and what potentially explains the non-existent gender gap is that in certain life stages women and men were more (or less) likely to choose certain strategies. Reducing working hours was more likely in the early family stage for women compared to men. This is in line with the theoretical idea that unpaid care and childcare together create a 'triple burden' for women as the traditional caregivers, but not for men. In contrast, in early middle age (between age 45 and 54) men were more likely than women to drop out of employment. A potential explanation, as put forward by gender role theories, is that men consider stopping to work as a reasonable strategy to improve their work-care conflict when they are already established in the labor market and have built a career for themselves. The importance of men's income for the household income (i.e., the male breadwinner model) might be lower in early middle age while women might still focus on their employment in this life stage. The fact that we did not find more gender differences could be because female and male caregivers might be very similar in their attributes. We kept constant, for instance, whether the caregiver provided care to a close family member (such as a partner or parent), other family members, or friends/neighbors. When controlling for different caregiving situations, similar caregivers choose similar work adaptation strategies. In addition, the women and men in our sample already decided to become caregivers, which could mean that they highly valued care, were willing to spend time on caregiving, and had comparable views on their labor market engagement (e.g., men who provide care might not be the typical breadwinners). Alternatively, women and men might have different positions in the labor market before starting to provide unpaid care, with women working and earning less (Blau & Kahn, 2017; Hartog & Salverda,

2018). Given these different starting points, two mechanisms might hinder both sexes from choosing the expected strategies. First, women might have working conditions that facilitate combining work and care. For instance, they on average work fewer hours, which makes the option to even further reduce work hours less feasible. Also, women already work more often in sectors or occupations that facilitate combining work and care, so changing work likely will not bring additional advantages. Second, men have on average higher wages, which may make it more costly to choose any strategy that adjusts work in favour of a better work-care balance.

We had the opportunity to look at four work adaption strategies and at the same time concentrate on the active and conscious use of these strategies. With previous data sources, it was not possible to include these alternative strategies and to disentangle the life stage and gender effects of unpaid caregiving for each strategy separately. However, our approach also comes with limitations. First, though we accounted for selection effects into caregiving by only comparing people who provided care, other potential selection effects may exist for which we could not control. One example is that women and men may have different labor market situations before they started caregiving. For instance, there might be ceiling or bottom effects depending on the previous working hours which are already gendered. To better detect gender differences in work adaptations, future research is invited to include employment characteristics (such as type of job, sector, and working hours) at the start of the caregiving episode. Second, we had no direct measurements of the proposed theoretical mechanisms. We simplified the decision-making process of caregivers by assuming that caregivers in the same life stage are homogeneous, for instance regarding the available financial resources, presence of young children, etcetera. Yet, caregivers likely vary in their levels of financial resources and other caring tasks (which for instance depend on the presence and income of a partner), even when being in the same life stage. To cancel out some heterogeneity between caregivers, we included the highest level of education in our models. To better understand the mechanisms for choosing a certain work adaptation strategy, direct measurements of the mechanisms are to be preferred. Third, although we know that the work adaption took place during the caregiving episode, we cannot completely be sure that the work adaption took place in the same life stage as the one in which caregiving started (which is our measurement of life stages). As a result, our conclusions regarding life stage differences may be less precise. Typically, such measurement error underestimates effects. At the same time, we have reason to think that this issue will not have seriously affected our conclusions regarding life stages. Only in a minority of cases, we will have linked the work adaption to the wrong life stage. Especially longer caregiving episodes may span multiple life stages, but in our sample half of the caregiving episodes span for a maximum of 3 years, whereas our life stages span for 10 years. Furthermore, anticipation effects may occur. Although the course of caregiving situations can never be fully predicted, it can be argued that in a part of the caregiving episodes that in the end appeared to be long, caregivers could already anticipate the potential burden of it at its onset. After all, duration and what will be expected from caregivers are related to the relationship to the care recipient (e.g., parent, partner, child) and his/her health

conditions. In such cases, the adaption may have taken place in the life stage in which the caregiving started.

To conclude, the Netherlands is a context in which working part-time is relatively easy to arrange, has similar employment protection and conditions as working full-time, and is less stigmatized compared to other countries (Hartog & Salverda, 2018; OECD, 2022). Looking at this context, we can draw some policy-related conclusions on the Netherlands and outside. Reducing working hours indeed proved the most chosen strategy and other strategies are used less frequently. The Dutch context can be considered a least likely case for strategies other than reducing working hours. This means that the differences in changing jobs for younger caregivers that we found in this context could be even stronger in others, making it important for policymakers to not only focus on the traditional group of caregivers in late middle age but also focus more on support for young caregivers. Other countries can infer from the Dutch case that more rights towards reducing working hours (but likely also other strategies for caregivers) can lead to a better combination of paid work and caregiving. However, decreasing working hours should ideally go hand in hand with financial security to prevent an increasing number of caregivers from suffering from poverty during caregiving or after it ends.



Chapter 3

Helping Helpers? The Role of Monetary Transfers in Combining Unpaid Care and Paid Work



A slightly different version of this chapter is published as:

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The study on which this chapter is based was presented at the European Consortium of Sociological Research (ECSR) Annual Conference for Early Researchers (online) on July 2nd, 2020 and the online Deutsche Gesellschaft für Soziologie (DGS) congress on September 23rd, 2020. The study received feedback at the Sociology seminar at the Radboud University.

Abstract

Caring for a friend or family member in need of care is time-consuming and stands in conflict with labor force participation. One idea to help unpaid caregivers is to compensate them with monetary transfers so that they can reduce work hours or (temporarily) exit employment. Although financial transfers may offer relief in terms of the experienced pressure, employment reductions may worsen caregivers' labor market positions in the long run. We study if monthly monetary transfers from the care recipient to the caregiver indeed give an incentive to reduce labor supply. Furthermore, we compare the influence of monetary transfers on unpaid caregivers' labor supply for women and men. We use waves 2 to 13 (2007-2019) of the German panel study 'Labour Market and Social Security (PASS)'. Using fixed-effects panel models we find that for women and men starting high-intensity caring increased the likelihood of becoming non-employed. Women were already likely to reduce working hours when starting non-intensive caring, whereas only intensive caring reduced working hours for men. Receiving low monetary transfers was a higher motivation to become non-employed for men and receiving low monetary transfers only reduced working hours for women.

Introduction

The number of people in need of care is growing steadily in many European countries because of population aging and a rise in chronic illnesses (Colombo, Llena-Nozal, Mercier, & Tjadens, 2011). Countries handle this new demand for care differently. In Germany, individuals are encouraged by the long-term care insurance scheme (LTCI) to get care at home, provided by their family or friends, rather than institutional care (Schulz, 2010). This non-institutional care is called unpaid care (also often referred to as informal care): providing health-related care or help to friends and relatives who suffer from a disease or need to be cared for due to reasons of old age (Broese van Groenou & de Boer, 2016). Receiving care at home might be preferable for the care recipient, and many caregivers report positive experiences (Broese van Groenou, de Boer, & Iedema, 2013). At the same time, however, providing unpaid care can be time- and energy-consuming and can conflict with employment (Lee & Tang, 2013). This raises the question of how policies and care recipients can help caregivers with their work-care conflict. Many countries have implemented policy instruments that financially support unpaid caregivers. Financial compensation can allow caregivers to reduce their working hours or (temporarily) exit employment, which may facilitate the combination of work and care, without serious financial consequences. This study does not, per se, evaluate the role of the cash benefits available in the German LTCI (*Pflegegeld*) directly, but instead assesses whether the underlying assumption that monetary transfers to the unpaid caregiver stimulate employment reductions holds. This is important to know because although financial transfers may offer relief in terms of work-care conflict, employment reductions may worsen caregivers' position in the labor market in the long run, as work careers are known to be cumulative (Ehrlich et al., 2019).

Germany, the country of study, has a long-standing policy of cash-for-care. The social security system supports people who are cared for in their homes by transferring monetary benefits to cover the costs of unpaid care; in addition, some receive professional care at home (Schulz, 2010). The monetary benefits are given to the person in need of care and mainly aim to offer care recipients autonomy in how to arrange their care. Money from the LTCI can be used explicitly to compensate the caregiver (cash-for-care) and thus may simultaneously support caregivers (Schulz, 2010). This means that care recipients have access to financial resources through the LTCI to compensate their caregivers. At the same time, care recipients may compensate their caregivers using their personal financial resources (other than from the LTCI). This is important to consider, as the cash benefits provided by the LTCI can be used to cover any type of care cost and may not be sufficient to compensate the caregiver(s) financially as well. To explore this, the study presented here includes not only the monetary transfers that may come (indirectly) from the LTCI, but also any monetary transfers that come from the care recipient's resources. It is the total amount of compensation that can offer caregivers some (financial) relief, which could result in a labor supply reduction.

Previous studies have found that caregivers are more likely than non-caregivers both to be, or to become, non-employed (e.g., Gomez-Leon et al., 2019; Hohmeyer &

Kopf, 2020; Lee & Tang, 2013; Pavalko & Henderson, 2006) and to reduce their working hours (e.g. Gomez-Leon et al., 2019; Schmitz & Westphal, 2017). We extend these studies by examining whether receiving monetary transfers fuels decisions to reduce employment among unpaid caregivers. Moreover, we explicitly acknowledge differences between women and men, as caring, also in general, is considered to be gendered (Wattis et al., 2013). However, whether women and men make different employment decisions and react differently to monetary transfers in making these decisions is yet unclear, especially for the context of Germany. This could have wider implications for gender inequality in the labor market, especially against the backdrop of rising demand for care. In sum, we answer the following research questions: *To what extent is unpaid caring negatively related to working hours and to being employed; to what extent are these expected negative relations conditional upon whether caregivers receive money directly from the care recipient; and to what extent do all these relations vary for women and men?*

This study contributes to the literature in three ways. First, previous research on monetary compensation lacked information on whether caregivers receive money from the care recipient. Only caregivers who lived with the care recipient and received benefits from the LTCI were examined. In this specific context, it was found that cash benefits from the LTCI indeed provide an incentive to reduce labor supply (Geyer & Korfhage, 2015; only for men: Geyer & Korfhage, 2018; Korfhage, 2019). The current study comes to a closer understanding of the actual mechanism behind monetary compensation by concentrating on the received amount of money for caring. Second, many scholars exclusively focused on women when looking at the association between care and employment (e.g., Ehrlich et al., 2019; Kelle, 2020; Korfhage, 2019), while those that compare women and men have reported mixed results. For North America, scholars have found that women are more likely than men to quit working when they start caring (Pavalko & Henderson, 2006) and that women are more likely than men to decrease their working hours (e.g., Smith et al., 2020). In a German sample, Meng (2013) found only small effect sizes, but men reduced their working hours more than women. The increasing demand for unpaid care will presumably affect everyone, both women and men. Thus, we argue that it is important to consider women as well as men. Third, we use waves 2 to 13 of the panel study ‘Labour Market and Social Security (PASS)’¹⁵, covering the period from 2007 to 2019. This allows us to use a rich database with observations spanning twelve years and to take a longitudinal approach. We do so by using fixed-effects panel models to relate changes in labor supply to changes in caring and in receiving monetary transfers. These models have the advantage that time-invariant characteristics are automatically controlled for. This is especially important because caregivers are a selective group in terms of personality traits and background characteristics (Broese van Groenou & de Boer, 2016). Although we do not claim a causal understanding, we come closer to understanding the relationship between unpaid care, labor supply and the role of monetary transfers by controlling for all time-stable characteristics.

¹⁵ This study uses the anonymous data of the Panel Study ‘Labour Market and Social Security’ (PASS), wave 14. Data access was provided via a Scientific Use File supplied by the Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the Institute for Employment Research (IAB). DOI: 10.5164/IAB.FDZD.2114.de.v1

Theory and Hypotheses

Work-Care Conflict

Most scholars report a negative association between providing unpaid care and labor supply (e.g., Pavalko & Henderson, 2006; Schmitz & Westphal, 2017). The explanation for this negative association is that when an individual starts caring for a relative or friend, they take on a new social role, the role of caregiver. This new role competes with other roles and causes conflicts, especially with the work role. In classic literature on conflicts between work and family roles, three major causes for conflict are described: *strain*, *time constraints*, and *contradicting behavior* (Greenhaus & Beutell, 1985). The theory of role *strain* states that having multiple roles can have a negative impact because of worries resulting from one role spilling over to another (Lee & Tang, 2013). The second cause of conflict between care and work is *time constraints*. Time can only be devoted to one role at a time, which hinders carrying out multiple roles. At some point, the caregiver might be unable to combine work, care, and leisure (Heitmueller, 2007) as well as other duties, such as household tasks or childcare. *Contradicting behavior* means that behavior in one role is incompatible with behavior and expectations in another behavior. An example is that at work a person needs to generally display emotional distance whereas, from a caregiver perspective, emotional interaction is expected (Greenhaus & Beutell, 1985). Concluding, all three causes – *strain*, *time constraints*, and *contradicting behavior* – have in common that by having multiple roles, a conflict between the roles occurs as it is difficult to meet expectations in all roles.

Working caregivers may come to a point where they have to decide how to solve the (role) conflict between care and work (Lilly et al., 2007). Caregivers basically have three major options (others are possible, but less likely). First, giving up leisure time and combining work with caring. Second, reducing care by outsourcing care or by finding other caregivers who can take over some of the tasks. Third, reduce their labor supply. The actual choice depends on the existence of alternatives for care and the costs and quality of these alternatives. People who start caring are likely to value caring, which is why some caregivers are willing to reduce leisure time and/or adapt their working arrangements, rather than reduce their care tasks. Moreover, if there is no other preferred or feasible form of caring for the person in need, and if the time for leisure, housework, and childcare is already reduced to a minimum, the only option left is to reduce labor supply. This means that labor supply reduction is a likely option for caregivers who suffer from a role conflict due to strain, time constraints, or contradicting behavior.

In adapting work, the most common strategy is to reduce full-time to part-time work (Wattis et al., 2013). Although relatively many people work part-time in Germany (48% of employed women and 11% of working men, see Bundesagentur für Arbeit, 2019), part-time employment is not always feasible in every kind of job. Some people might just reduce their commitment to work by two or three hours. Those who cannot reduce their hours in their occupation, those who already work part-time, and those who feel that they can no longer work, may drop out of the labor market completely to manage caring. The risk of role conflict increases the more time a person spends caring

for someone. Intensive caregivers, meaning spending a workday (8 hours) or more on caring, are expected to have the highest likelihood of encountering conflict between work and care and are thus also more likely to reduce their labor supply (e.g., Kelle, 2020). This leads to the hypothesis that *a change towards (more) caring is associated with a higher likelihood of becoming non-employed (H1a) and/or of reducing working hours (H1b)*. Similarly, this implies that when caring stops or the time spent on caring is reduced, the conflict between the caring role and the work role diminishes. Caregivers who reduced work, quit work, or did not search for a new job because they cared for someone, are assumed to increase their labor supply when caring ends or reduces.

Monetary Transfers

Monetary compensation is supposed to help caregivers reduce a potential conflict between work and care by financially compensating the caregiver for their caring efforts. In the decision about whether to reduce working hours or to quit working, direct cash transfers from the care recipient might give an incentive to reduce labor supply. The cost of reducing labor supply is lower because the transfers make the caregiver less dependent on income from their job (Korfhage, 2019). Lundsgaard (2005) illustrated that monetary transfers for care can also incentivize unemployed caregivers not to search for a (new) job, even when the amounts are relatively low (€205 per month in specific situations). Monetary transfers may work not only as an incentive in the calculation of opportunity costs related to work, but also as a form of appreciation by the care recipient, increasing the value of the care activities. This could lead to a preference and stronger incentive for a reduction in labor supply than a reduction in care. Hence, it is hypothesized that *when caregivers start receiving (more) money from the care recipient, they are more likely to become non-employed (H2a) and/or to reduce their working hours (H2b)*. Again, this also works the other way around. Once monetary compensation stops or decreases, caregivers would lose the incentive to be non-employed or to work less and will need to compensate for the loss in income by taking up a job or increasing their working hours.

Differences between Women and Men

Women with the same working hours as men are more likely to experience a work-care (role) conflict because their higher involvement, on average, in household and childcare tasks induces a higher risk of experiencing *time strain* (Treas & Hilgeman, 2007). Furthermore, Swinkels, Tilburg, Verbakel, and Broese van Groenou (2017) found that women who care for their partners more often experience problems in combining different tasks compared to their male counterparts. Consequently, women are more likely than men to come into a situation where they have to adjust something.

In their decision process, women and men might then choose differently when it comes to work versus care. Even when women participate fully in the labor force, it is assumed that they are the primary caregivers and are therefore more likely to adjust their work situation (Wattis et al., 2013). The literature on childcare includes the argument that women value family norms more and consider it their role to care for their families (Kaufman & Uhlenberg, 2000). Women not only take on more care but also

adjust their work role rather than their caring role more often. Men, by contrast, are often still seen as the breadwinner whose role is to provide (most of) the family income (Kaufman & Uhlenberg, 2000; Smith et al., 2020), which is why they may be less willing to reduce work for care and try to organize care around their work (see Auth et al., 2015). We propose that *women who experience a change towards (more) caring are more likely to become non-employed (H3a) and/or to reduce working hours (H3b) compared to men.*

Following again the argument that women are more willing to adjust work when caring, we expect that they may not need an incentive such as monetary transfers to do so. Men, who are seen as breadwinners, in contrast, may need a financial incentive before deciding to reduce labor supply to be sure their household income will not suffer too much from their work reduction. This argument is in line with the findings of Geyer and Korfhage (2018), who found that LTCI payments at the household level influence the labor supply of men, but not of women. We expect that *women who start receiving (more) money from the care recipient are less likely to become non-employed (H4a) and/or to reduce working hours (H4b) than men.*

Methods

Data

We use data from waves 2 to 13 of the panel study 'Labour Market and Social Security (PASS)', covering the period 2007-2019.¹⁶ PASS is a household panel on topics such as socio-demographics, economic situation, social situation, unemployment and benefits receipt, and work-related attitudes and behavior. The interviews were conducted as computer-aided telephone or personal interviews (CATI/CAPI) (Trappmann et al., 2019; Trappmann, Beste, Bethmann, & Müller, 2013). The panel is composed of two subsamples; the first is drawn from unemployment benefit recipients and the second from the German residential population, where low-status households were oversampled (Trappmann et al., 2013). It is important to keep the composition of the original sample in mind when interpreting the descriptive results (see also section on robustness checks), as the numbers only represent the distribution in the sample and not the population.

We considered respondents in the age range 18 to 64 only, and excluded respondents who are still in full-time education, so as to include only people for whom a conflict between care and work can arise. Because our second research question is on sex differences, respondents with missing values on sex or a transition in their sex were excluded ($N_{res}=32$). Finally, we included only respondents who participated in two or more waves (i.e., an unbalanced panel). For the analysis of employment status, we used the full sample ($N_{obs}=110,418$, $N_{res}=21,995$). For the analysis of working hours, we selected employed people because only they are at risk of reducing their working hours ($N_{obs}=50,371$, $N_{res}=10,499$).

¹⁶ We decided not to include more recent waves because the COVID-19 pandemic influenced unpaid care (and gendered effects of it; Raiber and Verbakel, 2021) and because we want to rule out this influence.

Measures

Dependent variables. Employment status was defined as being employed versus not being employed. Being employed meant paying social security contributions, which in Germany equals average monthly earnings above €450 (€400 until 2012) (Hohmeyer & Kopf, 2020). Working hours were defined as the ‘weekly contractual working hours for all positions held by the respondent at the time of the interview’ (Berg et al., 2020, p.45)). We chose contractual working hours over actual working hours (including overtime) because reducing the former is a decision with more consequences for employment and is thus more interesting from a social policy perspective (for results on actual working hours see robustness checks). The measurement of working hours was based on the generated variable provided with a top coding at 60 hours a week.

Main predictors. Caregivers were identified by the survey question “We now come to the topic of caring for other people who are severely ill or have to be cared for due to reasons of age. Do you provide care, personally and on a regular basis, for relatives or friends in or outside your household? We are not referring to providing nursing care as an occupation.” (Berg et al., 2020). By also taking the care intensity into account, we created three dummy variables: (1) non-caregivers (reference category), (2) caregivers who provided care less than 8 hours per week, and (3) intensive caregivers who provided 8 or more hours care per week. We decided on a categorical variable for care and intensity because we can then disentangle starting and stopping care and changes in intensity among caregivers. Observations in which respondents provided care but did not indicate their care intensity were set to missing ($N_{\text{obs}}=389$).

Monetary transfers were defined as regularly obtaining a certain amount of money from the person to whom they were providing care. In contrast to other research on the topic that only considered payments to the care recipient (Geyer & Korfhage, 2015, 2018), we identified whether there was an active transfer of money to the caregiver. Because non-caregivers cannot receive monetary transfers by definition (both non-caregivers and caregivers without monetary transfers receive no money), we constructed an extended version of the caring variable that also incorporates the reception of monetary transfers, distinguishing the following categories; (1) non-caregivers, (2) caregivers with no monetary transfers, (3) caregivers with low monetary transfers, and (4) caregivers with high monetary transfers. The cut-off point for low or high monetary transfers was based on the median amount of monthly monetary transfers among respondents who received transfers in that respective wave (median values varied between €205 and €300 per month). We decided to use a statistical cut-off point because a relational one with, for instance, relative to (household or personal) income would already include parts of the outcome. After all, a labor supply reduction will usually also mean an income reduction (see robustness checks for results using a relative measure).

Control variables. As we used fixed-effects models that focus on change, time-invariant characteristics (e.g., sex and cultural background) were automatically controlled for, which is why in the following we only discuss time-varying controls included in our

analysis. We included age and age squared to account for curvilinear age effects because we assume that the willingness to work is higher earlier in life (Ehrlich et al., 2019; Lilly et al., 2007). Furthermore, families with children living in the household¹⁷ might experience a double burden due to multiple caring roles. Children in the household were indicated with dummy variables on the youngest child; (1) youngest child under four, (2) youngest child between four and 14, and (3) no children under 15 in the household. We also included whether a person had a partner and if this partner was living in the household. A partner might help to cope with the work-care conflict by providing emotional support, helping with caring and/or doing other tasks like household duties (Wattis et al., 2013).¹⁸ The partner variable was coded as (1) no partner, (2) partner living in the household, (3) partner living outside the household, and (4) missing information on partner.

All observations with missing values on unpaid care or monetary transfers were dropped (0.5% of the observations, N=554).

Analytical Strategy

To better understand how changes in labor supply were related to changes in caring, we first ran logistic fixed-effects panel models for the binary employment variable (Models 1 and 3), also known as conditional maximum likelihood panel models (Allison, 2009). We used the function 'bife' including bias correction in R and presented average partial effects (see Stammann, Heiss, & McFadden, 2016).¹⁹ Second, we applied linear fixed-effect models (Models 2 and 4) for our second outcome variable working hours by using the plm package (Croissant & Millo, 2008). In all models, between-variation was eliminated and only within-variation was considered. For the linear models, this was reached by transforming the data by subtracting personal means ('demeaning') (Brüderl & Ludwig, 2015). For the logistic models, this was done by conditioning the maximization of the likelihood for each respondent on the overall probability of observing a change in employment within one wave (Allison, 2009). Within-estimators give the association between a change in caring and a change in labor supply. This is why we refer to changes in the results section, even if a variable did not directly measure change. Also, only those who experienced a change contributed to the estimates (Brüderl & Ludwig, 2015). The estimated fixed effects were based on changes towards and away from a category, independent of the category the respondents were in before. For additional models, including the direction of change, see the appendix.

¹⁷ Note that we do not have information on the relationship between caregiver and care recipient, which means that the partner might be the person cared for.

¹⁸ The decision to reduce labour supply depends on the economic situation of the household (Ehrlich et al., 2019). However, our models would only capture changes in household income and these are not a good predictor of the economic situation of a person and household. Income arguably increases if a person receives monetary transfers. We, therefore, did not include household income in our models.

¹⁹ We used R version 4.1.2 and RStudio version 1.2.5033.

Results

Sample Descriptives on Caregiving

We first present a description of the answer patterns of the respondents in our sample (that cannot be generalized to the German population). A first important note is that only a few respondents in our sample provided care at the time they were interviewed (see descriptive Table B1 in Appendix B). In each wave, similar to numbers from the Socio-Economic Panel (SOEP, see Ehrlich et al., 2020), around 6.2% to 7.9% (depending on the wave) of the respondents provided care. Among those who provided care, 54.4% cared for 8 or more hours per week (intensive caregivers). Looking at all waves, we see that 16% of the respondents cared at least once. Figure 3.1 (left panel) shows the percentage of women and men who were employed by caring status (all waves combined). Among both women and men, intensive caregivers worked the least. Non-intensive caregivers worked as often or even slightly more often than non-caregivers. Considering changes, we found that, on average, 4.1% of respondents in our sample experienced a change from employment to non-employment; 6.0% experienced a change from non-employment to employment between two consecutive waves (see Table B2 in Appendix B). 3.8% of respondents changed towards more care, whereas 3.4% made the opposite transition between two consecutive waves (also Table B2). Becoming non-employed occurred relatively often among those who picked up intensive care. Becoming employed was most likely among those who stopped intensive care (see Table 3.1).

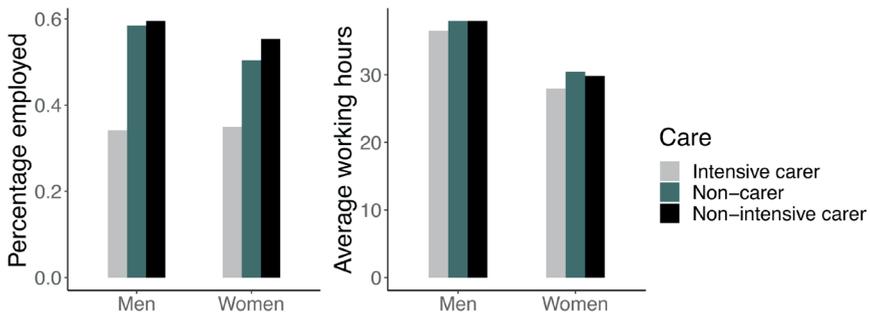


Figure 3.1 | Employment status (left) and average working hours (right) by caregiver status, averaged over all waves. All groups differ significantly based on chi-square tests.

In the reduced sample, we focused on employed respondents and, as a consequence, observed fewer caregivers, especially fewer intensive caregivers. 13.5% of respondents included in the analysis of working hours cared at least once. In Figure 3.1 (right panel) we display the average working hours across caregiver states. Female caregivers, especially intensive caregivers, worked fewer hours. Men in comparison worked less only when they provided care intensively.

Table 3.1 | Changes in care by changes in employment for succeeding years (in row percentages)

	Changes	Employed to non-employed	Non-employed to employed	No changes in employment status	N
Towards non-intensive caring		3.72%	5.86%	90.41%	2014
Towards intensive caring		5.20%	4.13%	90.67%	1501
Towards non-caring		3.42%	6.88%	89.70%	2428
No changes in care		4.05%	5.98%	89.96%	76,964
N		3,355	4,953	74,599	82,907

Source: PASS panel waves 2 to 13, change rates are based on respondents with observations in two subsequent waves

Multiple Regression Results of Caregiving

In line with the descriptive results, we found that for both women and men becoming an intensive caregiver was negatively related to employment (Table 3.2, Model 1a for women and Model 1b for men). People who started to care intensively had a higher likelihood to become non-employed. Changes towards intensive care increased the likelihood to become non-employed by 3 percentage points for women and 4 for men. H1a is therefore supported for intensive care but not for non-intensive care. By including interaction terms, we found no statistical indication that the effect of caring on employment status differed for women compared to men (non-intensive care*women: $APE=-0.00, p=0.38$, intensive care*women: $APE=0.01, p=0.11$). H3a is thus rejected.

Table 3.2 | Conditional fixed-effects analysis of binary employment status

	Women		Men	
	Model 1a	Model 3a	Model 1b	Model 3b
Non-caregiver	ref.	0.02 *** (0.00)	ref.	0.26 * (0.11)
Non-intensive caregiver	-0.01 (0.00)		-0.00 (0.00)	
Intensive caregiver	-0.03 *** (0.00)		-0.04 *** (0.00)	
Caregiver without monetary transfers		ref.		ref.
Caregiver with low monetary transfers		0.01 (0.02)		-0.07 * (0.03)
Caregiver with high monetary transfers		0.01 (0.00)		0.03 (0.04)
Age	0.06 *** (0.00)	0.06 *** (0.00)	0.07 *** (0.00)	0.07 *** (0.00)
Squared age	-0.00 *** (0.00)	-0.00 *** (0.00)	-0.00 *** (0.00)	-0.00 *** (0.00)
Single	ref.	ref.	ref.	ref.
Partner outside the HH	0.01 ** (0.00)	0.01 * (0.00)	0.02 *** (0.00)	0.02 *** (0.00)
Partner inside the HH	0.00 (0.00)	0.00 (0.00)	0.05 *** (0.00)	0.05 *** (0.00)
Partner missing	0.01 (0.03)	0.01 (0.03)	0.05 (0.03)	0.05 (0.03)
Youngest child under 4	ref.	ref.	ref.	ref.
No children under 15 in HH	0.16 *** (0.00)	0.16 *** (0.00)	0.00 (0.00)	0.00 (0.00)
Youngest child between 4 and 14	0.09 *** (0.00)	0.10 *** (0.00)	-0.01 (0.00)	-0.01 (0.00)
N		59,068		51,350
Nevents		29,417		29,679

The presented coefficients are average partial effects. Standard errors in parenthesis. Significance levels: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Source: PASS panel waves 2 to 13

The analysis of working hours showed the same pattern as the descriptive results. We see that women reduced working hours when they changed towards intensive or non-intensive caring (see Model 2a in Table 3.3). *Ceteris paribus*, women worked 0.6 hours a week less when they experienced a change towards non-intensive care and 1.0 hours less when they experienced a change towards intensive care. For men, we only found

a negative association with intensive caring (see Model 2b in Table 3.3). When men started intensive care, they decreased their weekly working hours by 0.7 hours. H1b is thus largely confirmed, as we found that a reduction in working hours was related to changes towards more caring among women and towards intensive caring among men. These relations, however, were not statistically different for women and men (non-intensive care*women: $b=-0.41$, $p=0.14$, intensive care*women: $b=-0.27$, $p=0.48$), which means that H3b was rejected.

Table 3.3 | Linear fixed-effects analysis of working hours

	Women		Men	
	Model 2a	Model 4a	Model 2b	Model 4b
Non-caregiver	ref.	0.61 *** (0.16)	ref.	0.24 (0.17)
Non-intensive caregiver	-0.58 ** (0.18)		-0.08 (0.19)	
Intensive caregiver	-1.01 *** (0.23)		-0.70 * (0.27)	
Caregiver without monetary transfers		ref.		ref.
Caregiver with low monetary transfers		-1.28 ** (0.46)		-0.92 (0.69)
Caregiver with high monetary transfers		-0.64 (0.58)		1.11 (1.05)
Age	0.08 (0.06)	0.08 (0.06)	0.40 *** (0.05)	0.40 *** (0.05)
Squared age	0.00 (0.00)	0.00 (0.00)	-0.00 *** (0.00)	-0.00 *** (0.00)
Single	ref.	ref.	ref.	ref.
Partner outside the HH	0.13 (0.16)	0.13 (0.16)	-0.02 (0.14)	-0.02 (0.14)
Partner inside the HH	-0.07 (0.18)	-0.06 (0.18)	0.32 * (0.16)	0.31 (0.16)
Partner missing	1.19 (0.82)	1.17 (0.82)	-2.21 * (0.95)	-2.22 * (0.95)
Youngest child under 4	ref.	ref.	ref.	ref.
No children under 15 in HH	4.31 *** (0.20)	4.30 *** (0.20)	0.27 (0.14)	0.27 (0.14)
Youngest child between 4 and 14	1.77 *** (0.17)	1.77 *** (0.17)	0.08 (0.12)	0.08 (0.12)
N	25,823		24,548	

All continuous predictors are mean-centered and scaled by 1 standard deviation. Standard errors in parenthesis. Significance levels: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$. Source: PASS panel waves 2 to 13

Sample Descriptives on Monetary Transfers

Across waves, between 9.5% and 17.0% of caregivers in our sample received monetary transfers, ranging from €5 up to €1,600 per month, with averages per wave between €255.6 and €358.8. The median, the cut-off point for low and high transfers, lay between €205 and €300.

This amount could already be meaningful for caregivers as a motivation to reduce work. Intensive caregivers, women, older adults, and non-employed individuals were more likely to receive monetary transfers. Both women and men who received monetary transfers were less likely to be employed according to the left-hand side of Figure 3.2. For men, no clear differences between low and high monetary transfers were visible, whereas for women receiving high monetary transfers was associated with the lowest likelihood to be employed.

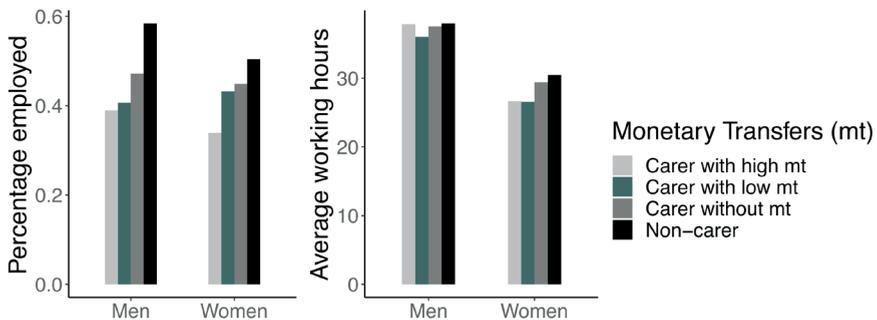


Figure 3.2 | Employment status (left) and average working hours (right) by monetary transfer status, averaged across all waves. All groups differ significantly based on chi-square tests.

Looking at the descriptive findings concerning monetary transfers and working hours (right-hand side of Figure 3.2), we observe that among men only, those with low monetary transfers had non-negligible lower average working hours. Working hours of women, on the contrary, seemed to be negatively related to the presence of any monetary benefits, regardless of the amount.

Multiple Regression Results of Monetary Transfers

The results of the regression analysis (see Model 3a for women and Model 3b for men in Table 3.2) show that men had a 5 percentage point higher likelihood of becoming non-employed when they started to receive low monetary transfers. For women, we found no statistical evidence that starting to receive monetary transfers is associated with becoming non-employed. We thus found some support for H2a for men. The different results for women and men regarding low monetary transfers were significant (non-caring*women: $APE=0.00$, $p=0.99$, care with low monetary transfers*women: $b=0.06$, $p=0.02$, care with high monetary transfers*women: $b=-0.0$, $p=0.83$). Receiving low monetary transfers was a higher motivation for men to become non-employed

($APE=0.11$) compared to women, meaning that we found some evidence for H4a with regard to sex differences in the role of low monetary transfers.

The descriptive pattern for monetary transfers in relation to working hours was confirmed by the fixed-effects panel model (see Model 4a for women and Model 4b for men in Table 3.3). For men, we found no clear indication that changes in monetary transfers mattered in reducing working hours. On the contrary, for women, a change towards low, but not high, transfers, reduced working hours. Starting to receive low amounts of money reduced the working hours of women by 1.3 hours. Hence, we found some evidence for H2b, but only among women and for low monetary transfers, not among men. We also found no statistical indication that monetary transfers mattered differently for both sexes (non-caring*women: $b=0.41$, $p=0.11$, care with low monetary transfers*women: $b=-0.73$, $p=0.45$, care with high monetary transfers*women: $b=-2.48$, $p=0.08$), which means H4b is rejected.

Robustness Checks

To evaluate the robustness of our results, we ran five additional analyses. First, when examining actual working hours (including overtime) instead of contract hours, we observed that changes towards intensive caring for men ($p=0.14$) and to low monetary transfers for women ($p=0.13$) were no longer related to a reduction of working hours. Second, we evaluated that taking 11 hours as a cut-off point (often used as a cut-off point in the literature) for caring intensity changed the results. We found that, in contrast to the 8-hour cut-point, with a cut-point of 11 hours changes towards non-intensive care for women ($APE=0.002$, $p=0.00$) were related significantly to stopping to work. The effects of intensive care differed significantly between women and men, with women less likely to become non-employed when starting to care intensively (intensive care*women $APE=0.02$, $p=0.03$). Furthermore, intensive care ceased to be significantly associated with reducing working hours for men ($p=0.06$). Third, we checked whether excluding respondents close to retirement made a difference, as their labor market decisions are arguably different. Reducing the sample to an age range of 18 to 55 changed the results regarding the employment status outcome. For women, a change towards non-intensive care also made them more likely to become non-employed ($APE=0.02$, $p=0.00$). Receiving low monetary transfers ceased to influence the employment status of men ($p=0.25$) and the difference between women and men regarding low monetary transfers was similarly not found in this subsample ($p=0.06$). These three robustness checks mean that some of the results depend on the decisions we took and that in specific circumstances non-intensive caring already made women more likely to become non-employed.

Fourth, in the main analysis, we categorized monetary transfers as high or low on the basis of the median level of transfers. In a check, we related the monetary transfers to the household income to categorize them as high or low. We used respondents' household income as reported in the earliest wave and kept it constant in later waves to avoid household income being influenced by the monetary transfers or outcome variables (e.g., reduced labor supply implies lower pay and thus lower household income). However, the first measurement of household income could already have been

influenced by unpaid care and monetary transfers. Changing the monetary transfers to a relative measure (monetary transfers below and above 10% of the household income) did not change the results. Last, we checked whether the oversampling of low-status households in the analysis of working hours affected our main relationships by including interaction terms between our main independent variables and socioeconomic status (SES), based on the European Socio-economic Classification (ESeC) of the current job (predefined variable coded into low, middle, and high SES). There was no statistical evidence that SES was a moderator. Note that the oversampling of non-employed people cannot influence the results regarding employment status, as this group is part of the dependent variable. Moreover, controlling for SES would not make sense, because SES cannot be based on a job for non-employed persons, meaning that the outcome of being non-employed and the category missing SES would be identical.

Conclusion

In this study, we examined whether reducing working hours and becoming non-employed is more likely when providing unpaid care and receiving monetary transfers for this care. As expected from the theory on work-care conflict and in line with previous research (see Kelle, 2020), we first conclude that a change to intensive caring is associated with a higher likelihood of employment exit and working hours reductions among both women and men. By reducing work, caregivers can (partly) resolve a work-care conflict, especially by relieving the time constraint elements of having to combine (intensive) care and work. We replicate previous findings through a panel analysis that accounts for time-invariant characteristics, strengthening the theoretical interpretation that caregivers come into situations where they are unable to combine work and care, and then choose to become non-employed or to reduce their working hours.

In the second part of this study, we directed our attention to direct monetary transfers from the care recipient to the caregiver. We assessed the underlying mechanism of how cash benefits can motivate caregivers to reduce labor supply. We found support for our hypotheses for low monetary transfers, albeit among men only for becoming non-employed, and among women only for reducing working hours. These results add to the literature by showing that direct monetary transfers have the potential to incentivize caregivers to become non-employed or to reduce their working hours. Interestingly, this only holds for low monetary transfers, not for high ones. A potential explanation is that high monetary transfers may coincide with caring intensively. If the care is intense, care recipients may want to give back more to their caregivers. Caring intensively in this case drives the decision to reduce labor supply and offers sufficient motivation to do so. The extra incentive of monetary transfers is thus not needed. Future research could look at the interaction between monetary transfers and care intensity.

Because we concentrated on direct monetary transfers, we cannot conclude anything about the indirect effects of cash benefits. For instance, in the case of partner care (or less likely other care within the household, see Ehrlich & Kelle, 2019), there is probably no direct monetary transfer; the cash benefits from the state may simply

enter the joint household income without being explicitly transferred to the caregiver (Lundsgaard, 2005). This being the case, our sample will have included only those caregivers who did not share their household income with the care receiver. Nor can we rule out other financial transfers or benefits that caregivers could have received and that may have influenced their employment decisions. To empirically disentangle indirect and direct cash transfers, data are needed that include information on caring relationships, caring location (inside or outside the household), direct transfers passed on, other sources of financial benefits for caring, and the amount of the cash benefit provided by the LTCl. However, theoretically speaking, we have no reason to believe that the mechanism for indirect and direct transfers would differ for a reduction in labor supply.

Our second focus was on how the relation between care and labor supply, as well as the relation between monetary transfers and labor supply, varied for women and men. We found similar patterns for the association between starting to care intensively and reducing employment but also saw that the patterns in the female sample differed slightly from those in the male sample. For instance, among women, we saw that starting to care non-intensively is associated with reducing working hours. We expected that women would be more likely to reduce or stop work. We did not find this, however. This can be interpreted in at least three ways. First, it could be the result of the relatively low number of male caregivers in our sample. This makes it difficult to reach sufficient statistical power, especially when changes in caring are concerned. Second, it may mean that differences between men and women were neutralized by time-invariant and important time-varying confounding factors, meaning that women and men in a similar situation may make similar decisions. Our study adds to the mixed results in previous studies, leaving it an open question whether there are indeed gendered choices among similar people when it comes to decreasing labor supply because of caring.

Third and last, it could also be that men do need monetary transfers to consider reducing labor supply. We argued that women and men might see monetary transfers as an incentive to reduce labor supply differently. Our results showed one difference between women and men, giving some credibility to our expectations. In line with our theoretical ideas, we found that low monetary transfers had a bigger incentive effect on men becoming non-employed than on women. Not finding more differences could also be due to the relatively low number of men in our sample, and the even fewer men who received monetary transfers. We have, however, provided the first evidence that a financial incentive motivates men, but not women, to cut back on their employment. This indicates that classic gender norms play a role. Men, who stereotypically are expected to provide the income, are more likely to consider cutting back on paid work if they receive some financial compensation. With the prospect of increasing demand for unpaid care, which is likely to affect women and men, we hope future studies will be conducted that validate the gendered patterns our results have revealed.

Although the use of fixed-effects panel models helps to bring us closer to understanding how changes in caring and monetary transfers are related to labor supply, we cannot claim to have found causal effects as even the strong design we used has its

limitations. First, we observed the outcomes and predictors at the same time point, so we cannot tell exactly which event came first. We would need monthly, weekly, or even daily data to overcome this issue. Nonetheless, based on theory and prior studies we assumed that the order of events is in most cases first a change in care or monetary transfers and then a change in labor supply. Second, receiving monetary transfers is not random, but plausibly depends on unobserved characteristics. If monetary transfers are a way of valuing your caregiver, it may be that valued caregivers are more willing to reduce their paid work. Yet it could also be the other way around: those with a good relationship may find it easier to handle both roles and thus be less likely to reduce work. It could also mean that care recipients transfer money if they think the caregiver needs this (Colombo et al., 2011). Furthermore, changes in the relationship may affect whether someone provides less or more care, or whether the caregiver receives monetary transfers, which in turn may affect their willingness to reduce their labor supply. We were unable to include the quality of the relationship between the caregiver and the care recipient. Analysis of data that includes information on relationship quality could enhance our insights.

We are unable to generalize our findings to other countries directly, but our conclusions may apply to other contexts where cash benefits for care are implemented. Policies that support care at home also (implicitly) support care and the consequences for caregivers, such as the demonstrated reduction in working hours and the risk of becoming non-employed. Monetary benefits transferred indirectly or directly to the caregiver are another incentive offered to caregivers to reduce working hours. Although the idea behind monetary transfers is to help caregivers combine care and work, they may have negative long-term consequences for caregivers. Without regulations in place for monetary transfers, caregivers may be trapped in low-paid positions that do not cover their foregone income from reducing paid work, in the short and longer term. Monetary transfers can also make caregivers dependent on their care recipient as a source of income, which may change the relationship between caregiver and care recipient (Ungerson, 1997). Still, monetary transfers are there to compensate for time spent on caring and to recognize the efforts of caregivers (Colombo et al., 2011). Monetary transfers should not be the only form of help for caregivers. Germany already has a second benefit scheme in place to buffer the long-term consequences of a loss of income due to caring as caregivers can receive more pension when they are caregivers in certain circumstances (Schulz, 2010; Yeandle, 2020). For the conflicts perceived during caring, other support in the form of basic training, counseling, and flexible work environments (Colombo et al., 2011) can additionally help to reduce stress and the negative consequences of caring.



Chapter 4

Wage Premium or Wage Penalty? Gendered Long-Term Wage Development of Unpaid Caregivers



A slightly different version of this chapter is currently under review at an international journal. Katja Möhring, Mark Visser, and Ellen Verbakel are co-authors of this chapter. The study on which this chapter is based was presented at the Dag van de Sociologie (DvdS) in Groningen on June 16th, 2022, the European Consortium of Sociological Research (ECSR) Annual Conference in Amsterdam on July 6th, 2022, and the British Society for Population Studies (BSPS) Conference in Winchester on September 5th, 2022.

Abstract

Testing hypotheses derived from conflict and enrichment theory, this study theoretically and empirically assesses the relationship between unpaid caregiving and gendered wage development in the Netherlands. With populations aging, more people will need to take care of family members or friends with health issues, here called unpaid care. However, providing care can have long-lasting impacts, for instance on wage development. Based on conflict theory, it is expected that caregiving is associated with a wage penalty, whereas enrichment theory argues that caregivers could benefit from caregiving due to enriched social skills and recognition. Both mechanisms are potentially gendered. Growth curve modeling is used to analyze hourly wages from 19 years of register data combined with information on caregiving episodes, retrospectively collected among a Dutch sample (N=2,659 respondents clustered in 324,940 months). Caregiving is distinguished between have-never cared, current caregivers, and past caregivers, as well as by duration and intensity. The results show that men's wage growth slightly improved after caregiving stopped and when they provided intensive care. Women's wage development, was slightly weaker after caregiving stopped and when they provided intensive care. Whether providing care is related to a wage growth premium or penalty depends on the gendered caregiving situation in terms of past caregiving and intensity. Only men partly benefit from caregiving in terms of their wage growth, not women.

Introduction

Population aging leads to more older people with complex health issues in need of care. In response, the Dutch government decided to decrease formal care and put more responsibility on families. As a result, unpaid care is expected to increase. However, unpaid caregiving – providing health-related care to sick, disabled, or older people in the personal network (here excluding regular childcare) – is often difficult to combine with employment (Patterson, Freedman, Cornman, & Wolff, 2023). Unpaid caregiving and work can compete both time- and role-wise, as discussed under the umbrella of work-care conflict theory (Greenhaus & Beutell, 1985; Lee & Tang, 2013). When caregiving is not combinable with paid work anymore, some caregivers work less (e.g., Gomez-Leon et al., 2019; Moussa, 2019; Raiber, Verbakel, & Visser, 2022; Schmitz & Westphal, 2017), stop working (e.g., Gomez-Leon et al., 2019; Hohmeyer & Kopf, 2020; Lee & Tang, 2013; Pavalko & Henderson, 2006; Raiber, Verbakel, & Visser, 2022), or switch to a more flexible job (Fast et al., 2013; Raiber, Visser, & Verbakel, 2023). Such strategies likely come at the cost of lower wages. On top of that, employers may consider unpaid caregivers to be less productive on the work floor (see the review of Martsolf et al., 2019), which might imply a reduction in caregivers' wages. Caregivers may experience wage consequences in the short term, but also in the long term as employment careers are known to be cumulative (Crystal et al., 2016) and occupational pensions are based on life-earned wages.

In contrast to the often-found negative effect of unpaid caregiving on wages (Carmichael & Ercolani, 2016; Earle & Heymann, 2012; Ehrlich et al., 2020; Heitmueller & Inglis, 2007; Raiber, Visser, et al., 2022; Schmitz & Westphal, 2017; Van Houtven et al., 2013), enrichment theory states that wages increase with caregiving (Greenhaus & Powell, 2006). Skills learned from caregiving, such as time management, setting priorities, empathy, reflective power, or self-confidence, might be used to improve one's labor market position during or after a period of providing care, potentially resulting in a stronger increase in wages compared to non-caregivers.

In this chapter, we examine wage developments of caregivers and non-caregivers, considering wage growth as the net outcome of the expected contradictory positive (enrichment) and negative effects (conflict) of unpaid caregiving. Wages are a good indicator of social inequality and help to understand inequalities between unpaid caregivers and non-caregivers. Compared to past research (Ehrlich et al., 2020; Glauber, 2019; Raiber, Visser, et al., 2022), we assess the *development* of hourly wages over people's working lives and examine whether unpaid caregiving episodes are associated with different individual wage development patterns. The focus on the *development* of wages is crucial as it is less dependent on the overall position of groups in the hourly wage distribution, including the starting position as lower wages potentially motivate to pick up care (selection into caregiving). This allows us to determine if there is an overall positive influence, as assumed by enrichment theory, or negative influence, as assumed by work-conflict theory, of unpaid caregiving on the wage development of those who provided care compared to those not having provided care.

Additionally, we apply a gender perspective because unpaid caregiving, in general, is highly gendered, but also wage developments, skills potentially learned during caregiving, and expectations of employers are potentially gendered. We know from the childcare literature that women face a motherhood penalty, while men often get a fatherhood premium (Glauber, 2018; Hodges & Budig, 2010). It is, however, less clear how wage growth is influenced differently for men and women when caring for others with health problems (Earle & Heymann, 2012; Ehrlich et al., 2020; Van Houtven et al., 2013). In this study, we contribute to the literature by disentangling the gendered relation between unpaid care and wage development, both theoretically and empirically, and take into account that women have dissimilar starting positions with lower wages than men. The focus on wage developments can give insights into whether the gender wage gap is increasing or decreasing as a result of unpaid caregiving. Altogether, this results in the following research questions: *How do unpaid caregiving episodes influence wage development and how does this differ for women and men?*

We address these questions by applying growth curve modeling, analyzing 19 years of hourly wage data in the Netherlands taken from tax administrations – the longest possible observation window in Dutch register data – combined with retrospective unpaid caregiving episodes collected in the Longitudinal Internet studies for the Social Sciences (LISS) in January and March 2020. This unique and first-time combination of data offers the advantage of using an objective measure of wages from tax data, resulting in fewer measurement errors and fewer (or even no) missing values compared to survey data used in previous studies. Furthermore, we examine caregiving careers instead of only snapshots as was usually done (Fast et al., 2020). We obtained a dataset in which we have information on 2,664 respondents covering 329,561 months of their lives, including information on caregiving and wages in each month. Growth curve analysis allows us to examine whether wages develop differently in periods in which a person cared compared to not cared (yet) and whether this is dependent on being a woman or man by comparing estimated individual wage trajectories. Our models take into account whether respondents did not care (yet), cared for short compared to longer duration, cared non-intensively or intensively, and if caregiving effects are visible after stopping care. This is important as unpaid caregiving can be provided for few or many hours and for a short or long period of time and is thus potentially heterogeneous in relation to hourly wage developments along these lines. With this focus on caregiving having potentially cumulative effects over the life course and by distinguishing by caregiving intensity, we add more nuanced details in understanding wage development effects and how these are gendered.

Work-Care Conflict Theory

The most-used theoretical foundation in family sociology to understand the employment consequences of unpaid caregiving is the work-care conflict theory. This theory assumes that work and care compete both time- and role-wise (Greenhaus & Beutell, 1985). When taking on a new social role, the role of unpaid caregiver, time that

before was devoted to paid work or leisure, must now be spent on unpaid care, making the combination of work and unpaid care difficult (Greenhaus & Beutell, 1985; Patterson et al., 2023). Additionally, as discussed in the theory of role strain (Lee & Tang, 2013), worries and issues in one role can spill over to the other role, making both roles more difficult. When work and care are competing, there are two main ways through which a work-care conflict can result in lower wage growth.

First, in case the work-care conflict is too strenuous, unpaid caregivers might choose to *adapt work* to better facilitate the combination of work and care (Lilly et al., 2007). One way to adapt paid work is by reducing labor supply, that is, by reducing working hours or by dropping out of employment completely. This has been shown to be a widely used strategy to adapt work among unpaid caregivers (see the review by Moussa, 2019). If a person starts to work fewer hours, the salary will decrease, and in case of employment exit, there will be no salary at all anymore. Arguing from human capital theory, working less will also affect hourly wages since work hours relate to building up work experience. Work careers tend to be cumulative, meaning that early interruptions and loss of capital can intensify over time, which implies less wage growth (Crystal et al., 2016; Möhring, 2018).

Furthermore, related to the theory of compensating differentials, unpaid caregivers – similar to childcare – might choose to change to a job that is more flexible and therefore combinable with caregiving (Abendroth et al., 2014; Arai, 2000; Yu & Kuo, 2017). Such desired features in the new job may come at the cost of lower hourly wages. Jobs that can be more easily combined with care are likely lower demanding jobs. Lower-demanding jobs are often associated with lower status and fewer career development options, which can result in lower wages (Abendroth et al., 2014; Arai, 2000).

Second, unpaid caregivers tend to perform poorer at work, are less productive, and experience more work disruptions (Martsof et al., 2019). Being less productive can hinder promotions, resulting in lower wage growth compared to non-caregivers. Even in the case that unpaid caregivers are similarly productive, being an unpaid caregiver might reduce wage growth as employers might view unpaid caregivers as less committed and potentially lower in productivity in the future (Abendroth et al., 2014). Both adapting work and (perceived) lower productivity point to a negative influence of unpaid care on wage development and leads to our first hypothesis: *Unpaid caregiving episodes are associated with smaller wage growth compared to have-never cared episodes (H1a)*.

Unpaid caregiving cannot be seen as a single event whose impact stops after caregiving has ended. Rather, it has to be looked at dynamically. Unpaid caregiving situations are highly heterogeneous and can be described in terms of episodes that can be long or short (Fast et al., 2020) and with high or low intensity (Möhring et al., 2023). Both longer periods of caregiving and higher intensity make a work-care conflict more likely as both imply that caregivers spend more hours and energy on caregiving that is not available for employment anymore. As a result, caregivers will feel a stronger urge to adapt work and employers' perceptions of the caregiver's productivity level are likely to be more negative. If a certain threshold is reached (e.g., caring for more than one day a week or for more than a year), the impact on employment will be more visible in wage

growth. Put together, this leads to the following two hypotheses: *Longer duration of caregiving episodes is associated with a larger wage growth penalty compared to have-never cared episodes (H1b). Higher caregiving intensity is associated with a larger wage growth penalty compared to have-never cared episodes (H1c).*

Enrichment Theory

Building on the concept of enhancement, the basic idea of enrichment theory is that having multiple social roles can be beneficial (Gonzales, Lee, & Brown, 2015; Greenhaus & Powell, 2006; Rozario, Morrow-Howell, & Hinterlong, 2004; Sieber, 1974). Having multiple roles functions as a buffer in the sense that stress in one role can be buffered by positive experiences in the other role (Gonzales et al., 2015; Greenhaus & Powell, 2006; Patterson et al., 2023). Having multiple roles also enriches a person's personality (Sieber, 1974) and people can feel like they are realizing their potential more and are boosting their self-esteem (Kulik, Shilo-Levin, & Liberman, 2015). These resources are in general helpful for one's employment career but are especially needed for better-paid management positions. More specifically, enrichment theory argues that different roles can benefit from each other because positive experiences in one role lead to positive outcomes in the other (Greenhaus & Powell, 2006). Resources, values, and skills acquired in the care domain can be used to improve reputation and productivity at work (Greenhaus & Powell, 2006). Some skills that are typically learned in care situations are related to successful work careers. Examples can be communication skills related to social relationships, time management, taking responsibility, handling difficult situations, and emotional security (Bovenberg, 2008). Unpaid caregivers can use their acquired skills and strengthened personalities to increase their chances of promotions and thus increase their wages. In sum, the arguments based on enrichment theory contradict the arguments of work-care conflict theory and lead to an alternative hypothesis regarding the relationship between unpaid care and development in wages, namely: *Unpaid care episodes are associated with greater wage growth compared to have-never cared episodes (H2a).*

Furthermore, one can argue that spending more time on caregiving, either in terms of longer duration or higher intensity, implies more experience in caregiving to acquire new and additional skills that can have positive effects on wages. Here again, certain thresholds are important. For example, in two weeks of caregiving, few skills can be acquired, and the same holds for low intensity. Yet, with longer duration and higher intensity, the tasks provided are likely to get more complex with more opportunities to learn and adapt. Thus, we formulate an alternative hypothesis related to the influence of caregiving duration on the relationship between unpaid care and wages: *Longer duration of caregiving episodes is associated with a greater wage growth premium compared to have-never cared episodes (H2b). Higher caregiving intensity is associated with a greater wage growth premium compared to have-never cared episodes (H2c).*

Gender Differences

Both caregiving and wage developments are strongly related to gender norms, not only in general but also specifically in the Netherlands (Vink, 2020). Women are portrayed as having their primary role as family caregivers while men are portrayed as breadwinners who are expected to provide most of the family income (Kaufman & Uhlenberg, 2000; Smith et al., 2020). These gender norms also play a role in the influence of unpaid caregiving episodes on wage development. Although arguments related to gender norm deviation predict that men who provide care experience less wage growth than female caregivers, we argue that women are more likely to suffer from unpaid caregiving. This expectation is comparable to findings from the childcare literature that show that childcare reduces women's wages more than men's wages, which even appear to increase when they become a dad (Glauber, 2018).

This is because work-care conflict is arguably stronger for female than male unpaid caregivers. Women, on average, tend to do a larger share of the household tasks in addition to their paid work and care tasks, resulting in stronger time conflicts (Treas & Hilgeman, 2007). Also, caregiving is stereotypically seen as a feminine task that women (should) provide more, might value (or feel expected to value) more, and/or women are penalized more as employers might view caring women as less productive (Kaufman & Uhlenberg, 2000; Wattis et al., 2013). This could have the consequence that women are more likely than men to adapt their work when combining it with caregiving or find it acceptable to miss work for care, resulting in more work interruptions and, consequently, less human capital accumulation (Robison, Fortinsky, Kleppinger, Shugrue, & Porter, 2009). Moreover, related to enrichment, women are already (expected) to have skills related to caregiving because those are stereotypically female skills (e.g., empathy). On the contrary, men can widen – or employers may believe that their male employees widened – their skill set, including skills that were not expected of them before. Similar to the literature on the daddy bonus, men who take care of someone with health issues might signal dependability and loyalty (Hodges & Budig, 2010). Men might also try – or are expected – to organize caregiving around work so that the spillover between work and care is as small as possible (Auth et al., 2015). From this, we derive the following hypothesis: *Men benefit (or have less negative consequences) from caregiving in terms of their wage development compared to women (H3)*. The arguments about caregiving duration and intensity also apply here: more time on caregiving – both through longer duration and higher intensity – means more opportunity for women to experience a stronger conflict compared to men. For men, it means more time to learn (new) skills from which they might benefit more than women.

Methods

Data

We used data from a study on unpaid caregiving collected in the sample of the Longitudinal Internet studies for the Social Sciences (LISS) and linked these data to register data (based on tax data; Statistics Netherlands) of the same individuals. The LISS panel is based on a representative sample of the Dutch population and offers the opportunity for researchers to collect data within the panel in addition to the main modules (see www.lissdata.nl and Scherpenzeel & Das, 2010 for more information). The unpaid caregiving data was collected in two steps. In January 2020, the complete LISS panel received the following question:

“Below we will ask you to indicate all the people known to you to whom you have ever offered unpaid care on account of their health issues. These people could be your partner, a family member, a friend, neighbor, acquaintance or colleague who needs or needed help because of physical, psychological or mental limitations or because of old age. Examples of unpaid care are doing household chores, helping with washing and dressing, keeping company, providing transport or performing odd jobs. You may have done so for a short period or for a long period. It could involve people known to you to whom you provided care in the past, but could also involve people known to you to whom are providing care at present. Care provided as part of your occupation or as a volunteer does not count. Please take a moment to think about the people known to you to whom you have provided or are providing unpaid care on account of health issues.” (Verbakel @ CentErdata, 2021).

This question was used to classify caregivers (provided care at least at one point in their lives) and non-caregivers (never provided care during their lives, at least until the moment of the interview). Those who provided care at least once in their life got an extended questionnaire in March 2020. In this month, the first measures by the government against the COVID-19 pandemic were announced and the answer patterns could have potentially been influenced by the pandemic. However, Raiber et al. (2021) found that the answer patterns before and after the announcement of these measures were not statistically different. In this extended questionnaire, the caregivers were asked to provide information on up to seven caregiving episodes, including the start and end date of the caregiving episodes so that we could reconstruct nearly complete caregiving histories. For up to three randomly chosen episodes more detailed information was asked (such as caregiving intensity).

The register data provide monthly information on salaries and hours worked as well as information on children, partners, and job characteristics (like sector). Hours worked were available from January 2001, which determines the beginning of our observation window. The end of our observation window was January 2020, when the classifying question on caregiving was asked. We prepared our data in long format, implying that we covered each month of a respondent's life between January 2001 and January 2020. Our analytical sample included $N=324,940$ months of 2,659 respondents.

Measures

Dependent variable. Our outcome variable was monthly hourly wages reversed lagged by three months (e.g., in January 2014 wages of April 2014 are examined). We argue that reversed lagging of the outcome variable is necessary because changes in wages will not be directly visible since wages are based on employment contracts, which makes them rather stable over time. However, as we look at wage development, we will pick up all wage changes thereafter (that is, within the observation window). We chose hourly wages rather than labor income as we are interested in wage effects independent from hours worked. To calculate the hourly wages based on wages per month, we used the part-time indicator in the register data, which defines 1fte as 40 hours worked per week. Note that due to building on register data, there were no missing values on the dependent variable.

Main predictors. Caregiving was operationalized in three ways. First, we created a categorical variable with (0) for months in which the respondent did not provide care and had never done so (have-never cared), (1) if the respondent was providing care for one or multiple people in that month (current caregiver) and (2) for respondents who cared in the past but were not providing care anymore in that particular month (past caregiver). We argue it is important to distinguish the latter category (2) as past caregiving might have impacted the employment situation (they had a conflict and/or had the opportunity to learn new skills due to caregiving in the past), meaning these respondents are likely dissimilar from the have-never cared (0), but there is also no current conflict or enrichment possibilities, which makes them dissimilar from current caregivers (1).

Second, *caregiving duration* was based on the sum of months in which the respondent provided care in the past for one or multiple people. This means that caregiving duration increases with one month compared to the previous month even if the respondent cared for multiple people that month. To take into account the overall enrichment and conflict the caregiver experienced, this measure is cumulative, meaning that the time spent in previous caregiving episodes was included in the sum of months when the caregiver entered a new care episode. For this measure, we did not restrict ourselves to the observation window (January 2001-January 2020) but used all information before that period. We categorized the sum of months of caregiving to integrate the information with the have-never cared and past caregivers categories (to avoid zero inflation as all months with no caregiving before have zero duration). We used the following categories in each specific month both based on theoretical considerations (how long it takes to have an impact on employment) and the distribution of caregiving months: (1) have-never cared, (2) cared less than one year, (3) cared one to five years, (4) cared more than five years, and (5) past caregivers.

Third, for the *intensity of caregiving*, we used the hours cared for per week at the beginning and the end of the episode. We chose the highest value to define the intensity of the caregiving episode (at least intensive at one moment) and defined 8 or more hours per week as intensive (more than one working day of caregiving). Also here the reason

for categorization was to be able to compare it with have-never cared. In case there were overlapping episodes, we took the sum of hours cared for per week. This resulted in the categories (1) have-never cared, (2) non-intensive caregivers (less than 8 hours per week), (3) intensive caregivers (8 or more hours per week), and (4) past caregivers. Intensity was available for up to three caregiving episodes per respondent. This means that for the analysis in which we differentiated by intensity, we excluded time points with missing information on one or multiple caregiving episodes, except if we knew that the caregiving was already intensive in that particular month because one of the episodes we did have information on already exceeded the threshold of 8 hours.

Time was modeled by (*potential*) *work experience* to only compare respondents to those with similar work experience and therefore also similar age. This indicator increased every month by one and the value at the start of the observation window was defined by the number of months that had passed since ending education. However, as we lacked information on the exact date of ending education, we assumed this to be the normal age at which one's highest educational level could be achieved. Cut points, based on Kraaykamp and Notten (2016), were age 16 for primary education and intermediate secondary (also compulsory school age), 18 for higher secondary, 19 for intermediate vocational (adjusted to Kraaykamp and Notten (2016) as only very few are finishing earlier), 21 for higher vocational, and 22 for university. More precisely, work experience refers to the current age in a particular month minus the number of months assumably spent on education. Negative work experiences were possible when the respondent was starting to work before the expected end of their education, yet, we only included negative work experience for up to two years (see restriction sample). For the variables *sex*, we used the predefined variable from the LISS panel with the categories (1) men and (2) women.

Control variables. We included *children in the household* because in addition to caregiving for family and friends with health issues, being responsible for children can create more conflict and affect wages. This variable consisted of four categories, each measured monthly: (1) child under 4 living in the household, (2) child between 4 and 14 living in the household, (3) no child under 15 living in the household. Furthermore, information on a *partner living in the household* was included as the partner can be a resource by helping with unpaid care, children, and household duties or by being economically supportive. We chose the following categories: (1) no partner in household, (2) partner without employment, (3) partner with part-time employment, (4) partner with full-time employment, and (5) self-employed partner, including helping in a family business.

Additionally, we controlled for *months being unemployed* as a count variable, increasing with each additional month of receiving unemployment benefits. Information on the employer, as a way to control for work environments in which it is easier to combine work and care, was incorporated by two control variables. First, for *sector*, we used the predefined sectors included in the register data: (1) private company, (2) subsidized sector (private companies with government funding), and (3) public sector. Second, the *size of the firm* was based on own calculations (sum of all taxpayers in the Netherlands

registered at the same firm in the same month using the complete data available in the register data), creating the following categories based on the categorization of Statistics Netherlands: (1) up to 9 people working at the firm, (2) 10 to 99 people working at the firm, (3) 100 to 499 people working at the firm, and (4) more than 500 people working at the firm. Both sector and firm size were reversed lagged, just as wages, as they should be measured at the same time as hourly wages to have the firm information for the wages of interest. We obtained the highest level of *education* in categories (primary school, intermediate secondary, higher secondary, intermediate vocational, higher vocational, and university) from the LISS panel. In addition, we used birth year to create *cohorts*, distinguishing (1) 1941 to 1951, (2) 1952 to 1961, (3) 1962 to 1971, (4), 1972 to 1981, (5) 1982 to 1991, and (6) 1992 to 2004. We decided to control for cohort effects as they are related to (gender) norms regarding both caregiving and employment (Glauber, 2019). In a robustness check, we looked into period effects instead of cohort effects. Compared to cohorts, periods are potentially more strongly related to wages but less to caregiving.

Sample Restrictions

We restricted our sample to (a) respondents aged 78 or younger in January 2020 as only in this age range respondents got the March questionnaire (Verbakel & CentERdata, 2021), which is why we chose the restriction for both caregivers and non-caregivers (see also restriction (i) on pension age), (b) respondents who also filled in the March questionnaire if they indicated in January that they provided unpaid care to at least one person in their life (response rate March questionnaire: 87.5%), (c) respondents with realistic caregiving episodes (e.g., used for the duration measurement, more precisely caregiving starting at or after age 5 and identifiable as unpaid caregiving), (d) respondents who allowed linking of the LISS and register data (90% of LISS respondents), (e) respondents who worked at least one month in the observation window, (f) months in which the outcome variable was observed (restricting (a) to (f) left us with N=486,625 observations of 3,460 respondents), (g) months of respondents in which they were not self-employed or not self-employed before (465,270 months of 3,381 respondents left), (h) months in which our time variable had reasonable values, meaning we only included records with positive values and up to 2 years before the expected start of the working career. For example: if someone obtained a university degree, that person's labor market career is expected to start at age 22, but it can well be that this person has wage data from age 19 or 20 on, then we excluded the record for age 19, but included the record for age 20 (334,219 months of 2,670 respondents left). Like this only respondents with realistic working ages are included, (i) educational level was not missing (334,139 months of 2,667 respondents left) and excluded all employment months since the year the respondents turned 65 (i.e., state pension age) (330,070 months of 2,662 respondents left), and (j) excluded outliers with extremely high hourly wages as their disproportionately high wage growth influenced our results. In more detail, we excluded all months after a person earned more than the chosen cutoff point of 100 euros per hour (see also Robustness Checks). The final sample included 324,940 months of 2,659 respondents (290,651 months of 2,386 respondents for the sample on intensity).

Analytical Strategy

We estimated growth curve models using the *xtmixed* command in Stata16. Growth curve models estimate differences between groups (random effects) based on within-person changes (fixed effects) (Curran, Obeidat, & Losardo, 2010). In the first step, for each respondent, we modeled individual wage trajectories and compared those between the different groups of caregiving at a similar moment in their work career. Wage development is modeled by interacting the caregiving categories with time (in our design potential work experience). In the second step looking at the gendered effects, the previous interactions (time * caregiving) were again interacted with sex to test our hypothesis on gender differences (results not shown in the tables because of extremely high complexity, but they are discussed in the text and presented as figures). Based on the best model fit, as assessed with likelihood ratio tests, we modeled time as cubic and included random intercepts on the respondent level as well as random slopes for time and time squared. For a more straightforward interpretation and reasons of convergence, we decided to not include cubic time in the random slopes or interact caregiving with cubic time. The random intercept and slopes were needed to model individual wages, which can have different starting wages (intercept) and potentially develop differently (slope), allowing for the evaluation of the relation between caregiving and wage development.

Results

Descriptive Results

Table 4.1 shows the descriptive statistics for all variables. Women were providing care in about one-third of all months observed and provided care in the past (but not at the moment the survey was administered) in 17.85% of the months. In the remaining half of the months, they have never cared. Men were providing care in about a quarter of the months, were past caregivers in 12.67% of the months, and in 63.29% of the months, they belonged to the have-never cared group. In terms of how long people took care of someone, the majority of months were characterized as long duration, that is, for more than five years: 21.91% for women and 16.21% for men. Regarding intensity, we see that women provided non-intensive care in 10.72% of the months and intensive care in 13.18% of the months. For men, the respective numbers were 8.11% and 7.74%. Furthermore, men on average earned more than women (22.98 compared to 16.83 euros per hour). Figure 4.1 shows the empty model (without any controls) for the wage growth difference between women and men. It highlights the wage difference between women and men over the complete time span, yet the wage growth for women and men was not statistically different on a 5%-significance level.

Table 4.1 | Descriptive statistics

	Women			Men		
	Range	Mean / %	S.D.	Range	Mean / %	S.D.
Hourly wages	0.01-99.9 ⁺	16.83	7.54	0.01-99.9 ⁺	22.98	10.60
Caregiving overall						
have-never cared	0/1	49.49		0/1	63.29	
current caregivers	0/1	32.66		0/1	24.03	
past caregivers	0/1	17.85		0/1	12.67	
Caregiving by duration						
have never cared	0/1	49.49		0/1	63.29	
less than a year	0/1	2.32		0/1	1.82	
one to five years	0/1	8.43		0/1	6.01	
more than five years	0/1	21.91		0/1	16.21	
past caregivers	0/1	17.85		0/1	12.67	
Caregiving by intensity*						
have-never cared	0/1	55.92		0/1	70.11	
non-intensive care	0/1	10.72		0/1	8.11	
intensive care	0/1	13.18		0/1	7.74	
past caregivers	0/1	20.17		0/1	14.04	
Work experience	-24/591	204.84	154.90	-24/591	205.15	143.65
Children						
child under 4 living in the household	0/1	6.83		0/1	8.71	
child between 4 and 14 living in the household	0/1	26.02		0/1	23.05	
no child under 15 living in the household	0/1	67.15		0/1	68.24	
Partner						
no partner in household	0/1	26.63		0/1	23.44	
partner without employment	0/1	17.04		0/1	27.79	
partner with part-time employment	0/1	6.29		0/1	34.17	
partner with full-time employment	0/1	45.89		0/1	10.31	
self-employed partner	0/1	4.15		0/1	4.29	
Unemployment in months	0/81 [^]	4.75	11.33	0/87 [^]	5.13	12.65
Sector (reversed lagged 3 months)						
private company	0/1	49.30		0/1	69.12	
subsidized sector	0/1	30.64		0/1	9.21	
public sector	0/1	20.05		0/1	21.67	
Firm size (reversed lagged 3 months)						
up to 9 employees	0/1	8.69		0/1	5.96	
10 to 99 employees	0/1	17.71		0/1	22.13	
100 to 499 employees	0/1	18.22		0/1	22.87	
more than 500 employees	0/1	55.39		0/1	49.04	

Cohorts				
1941 to 1951	0/1	18.72	0/1	26.28
1952 to 1961	0/1	26.53	0/1	27.67
1962 to 1971	0/1	24.83	0/1	21.23
1972 to 1981	0/1	19.49	0/1	16.18
1982 to 1991	0/1	5.18	0/1	4.83
1992 to 2004	0/1	5.26	0/1	3.81
Education				
primary	0/1	7.35	0/1	6.44
intermediate secondary	0/1	23.90	0/1	20.06
higher secondary	0/1	7.89	0/1	7.47
intermediate vocational	0/1	27.69	0/1	26.57
higher vocational	0/1	24.83	0/1	27.38
university	0/1	8.35	0/1	12.08
N months		151,578		173,362
N respondents		1,293		1,366

For time-changing variables, the means across all months are displayed.

* This value is based on a smaller sample size of 290,651 months of 2,386 respondents.

+ This is the range of possible values as the actual range in the sample cannot be reported in line with the regulations of Statistics Netherlands (to not identify single respondents).

^ Due to Statistics Netherlands regulations, the maximum is not reported here but the 99.90th percentile.

To look at how wages were different between caregivers and non-caregivers before the former group started to provide care (selection into caregiving), we looked at the wages of caregivers six months before they started caregiving and compared those to the wages of non-caregivers with the same average work experience (172 months or about 14 years of work experience). T-tests revealed that men who would become caregivers earned significantly less than men who would never start caring (22.90 compared to 25.31 Euros per hour). No difference was found among women (17.34 Euros for non-caregivers and 17.43 euros for caregivers). Accordingly, there was a selection into caregiving of those earning less among men, but not among women, supporting the focus on wage growth rather than wage levels.

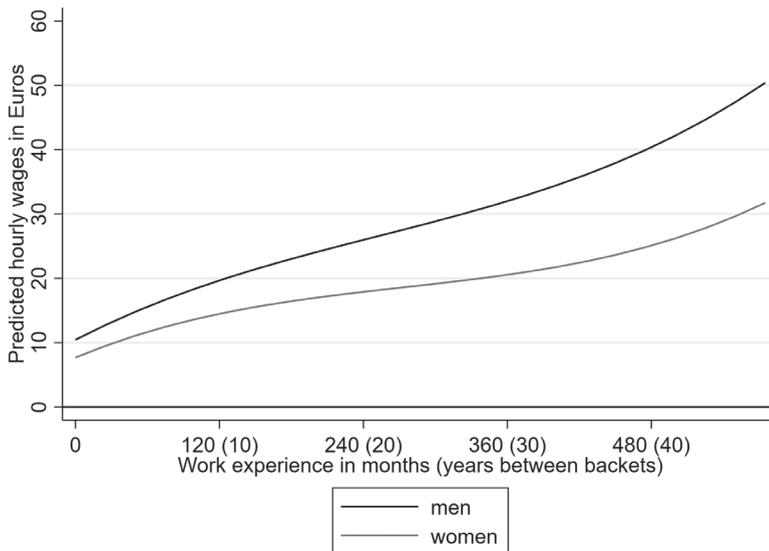


Figure 4.1 | Predicted hourly wages by work experience for the empty growth curve models including time, squared and cubic time, and their interactions with sex. N=324,940 months of 2,659 respondents.

Multivariate Results

We found a general wage growth of about 9 to 13 euro cents per month for the have-never cared in all models (see Tables 4.2 to 4.4). Comparing how this general wage growth is different for caregiving groups, we look at current caregivers and past caregivers first (see Table 4.2). We found that the wage growth of female current caregivers was similar to that of have-never cared women. However, female past caregivers had significantly lower wage growth compared to the have-never cared and current caregivers (we changed the reference category to test this, coef: 0.004*). In other words, after giving care women's wage development slowed down. For men, we found the opposite, thus a positive effect of past caregiving on wage development, yet only compared to current caregivers (again, tested by changing the reference category, coef: -0.003*). This means that, for men, having caregiving experience from the past went together with a wage (growth) bonus compared to currently being in a caring role, but not compared to never having been a caregiver. Note that the difference in wage growth for female and male past caregivers was below one cent (0.003 euros for female past caregivers and 0.004 euros for male past caregivers). When calculating this on a yearly basis, a person having cared in the past but not anymore would have 0.036 euro (0.003 euros * 12 months) more hourly wage growth compared to current caregivers which would mean 74.88 euros per year more wage growth when working full-time (full-time work with 2080 hours per week * 0.036 euros).

We found that the above-described patterns for female and male past caregivers were also statistically different from each other. To visualize the complex wage growth

models and how they differ by sex, we depicted the predicted hourly wages for men and women for the significantly different categories in Figure 4.2. Though Figure 4.2 also illustrates that the wage growth differences between the caregiving groups were small in size, the pattern that emerged from our models imply interesting sex differences. Male past caregivers had lower wages at the beginning of their careers, but eventually, their wages went above the line of the have-never cared – thus higher wage growth for past caregiving –, while for women the opposite was the case.

Table 4.2 | Growth curve analysis of hourly wages, caregiving overall

	Women		Men	
Have-never cared	ref.		ref.	
Current caregivers	0.068	(0.141)	-0.080	(0.182)
Past caregivers	0.283	(0.195)	-0.317	(0.246)
<i>Wage growth</i>	0.084***	(0.009)	0.129***	(0.014)
*Current caregivers	-0.001	(0.001)	-0.000	(0.002)
Past caregivers	-0.003	(0.002)	0.003	(0.002)
<i>Squared wage growth</i>	-0.000***	(0.000)	-0.000***	(0.000)
*Current caregivers	-0.000	(0.000)	0.000	(0.000)
*Past caregivers	0.000	(0.000)	-0.000	(0.000)
<i>Cubic wage growth</i>	0.000***	(0.000)	0.000***	(0.000)
<i>Controls</i>				
Children (ref. no children)				
child under 4 living in the household	0.423***	(0.074)	-0.402***	(0.069)
child between 4 and 14 living in the household	0.102	(0.052)	-0.215***	(0.054)
Partner (ref. no partner)				
partner without employment	-0.337***	(0.066)	-0.204**	(0.067)
partner with part-time employment	0.047	(0.074)	-0.184**	(0.068)
partner with full-time employment	0.190**	(0.063)	-0.174*	(0.076)
self-employed partner	-0.469***	(0.109)	0.130	(0.104)
Unemployment months	-0.093**	(0.030)	-0.019	(0.033)
Sector (ref. private company)				
subsidized sector	-0.408***	(0.077)	0.474***	(0.118)
public sector	0.173	(0.101)	-0.008	(0.125)
Firm size (ref. more than 500)				
up to 9 employees	-0.412***	(0.078)	-1.583***	(0.089)
10 to 99 employees	-0.519***	(0.059)	-0.604***	(0.061)
100 to 499 employees	-0.542***	(0.052)	-0.177***	(0.052)
Cohorts (ref. 1962 to 1971)				
1941 to 1951	-6.212***	(1.220)	-10.397***	(1.333)
1952 to 1961	-3.115**	(1.021)	-5.618***	(1.256)
1972 to 1981	4.721***	(1.155)	5.274***	(1.497)
1982 to 1991	5.068	(2.626)	2.616	(3.329)
1992 to 2004	14.429***	(2.547)	16.862***	(3.649)

Education (ref. university)			
primary	-27.111***	(2.374)	-34.303*** (2.738)
intermediate secondary	-24.032***	(1.646)	-32.177*** (1.773)
higher secondary	-14.785***	(1.898)	-14.510*** (2.067)
intermediate vocational	-14.964***	(1.546)	-15.366*** (1.571)
higher vocational	-8.809***	(1.563)	-6.004*** (1.564)
Constant	21.880***	(1.787)	24.077*** (2.113)
Months	151,578	173,362	
Number of groups	1,293	1,366	

Standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05

Table 4.3 shows the results for duration of caregiving. Among both women and men, there were no differences in wage growth by caregiving duration compared to the have-never cared category. This implies that, compared to those who have never cared, it does not matter how long one fulfills a caregiving role. We only found that women who provided care for one to five years experienced a slightly, but significantly, higher wage growth than women who cared for less than a year (effect size below half a cent). This result implies some indication for enhancing wage growth effects with expanding caregiving periods for women, but this pattern did not extend to even longer duration categories. We also found no differences in the interaction models meaning no differences between women and men in the difference in wage growth by duration.

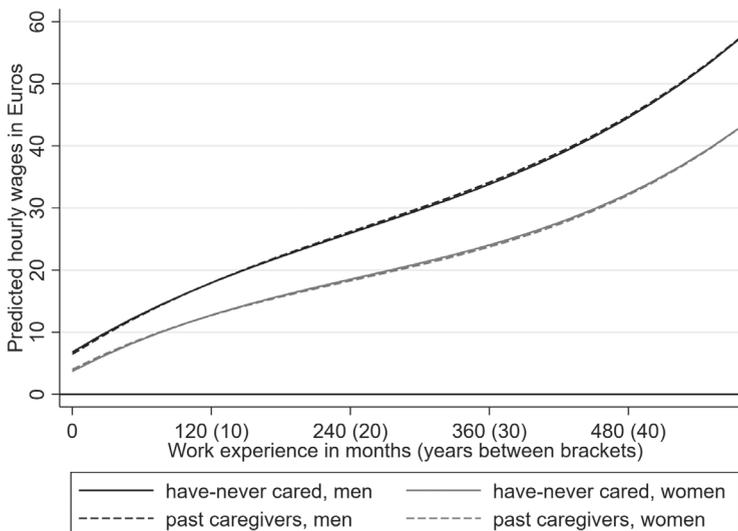


Figure 4.2 | Predicted hourly wages by work experience, comparing have-never cared to past caregivers differentiated by gender (based on interaction model with sex; not shown in tables). N=324,940 months of 2,659 respondents.

Table 4.3 | Growth curve analysis of hourly wages, caregiving duration

	Women		Men	
Have-never cared	ref.		ref.	
Less than a year cared	-0.081	(0.154)	-0.217	(0.199)
One to five years cared	-0.009	(0.175)	0.184	(0.228)
More than five years cared	-0.750**	(0.244)	-0.090	(0.314)
Past caregivers	0.023	(0.208)	-0.272	(0.262)
<i>Wage growth</i>	0.084***	(0.009)	0.129***	(0.014)
*Less than a year cared	0.001	(0.001)	0.001	(0.002)
*One to five years cared	0.000	(0.002)	-0.002	(0.002)
*More than five years cared	0.002	(0.002)	0.000	(0.003)
*Past caregivers	-0.003	(0.002)	0.003	(0.002)
<i>Squared wage growth</i>	-0.000***	(0.000)	-0.000***	(0.000)
*Less than a year cared	-0.000	(0.000)	-0.000	(0.000)
*One to five years cared	-0.000	(0.000)	0.000	(0.000)
*More than five years cared	0.000	(0.000)	0.000	(0.000)
Past caregivers	0.000	(0.000)	-0.000	(0.000)
<i>Cubic wage growth</i>	0.000***	(0.000)	0.000***	(0.000)
<i>Controls</i>				
Children (ref. no children)				
child under 4 living in the household	0.425***	(0.074)	-0.401***	(0.069)
child between 4 and 14 living in the household	0.106*	(0.052)	-0.214***	(0.054)
Partner (ref. no partner)				
partner without employment	-0.325***	(0.066)	-0.205**	(0.067)
partner with part-time employment	0.052	(0.074)	-0.187**	(0.068)
partner with full-time employment	0.191**	(0.063)	-0.174*	(0.076)
self-employed partner	-0.458***	(0.109)	0.125	(0.104)
Unemployment months	-0.092**	(0.030)	-0.019	(0.033)
Sector (ref. private company)				
subsidized sector	-0.408***	(0.077)	0.473***	(0.118)
public sector	0.188	(0.101)	-0.012	(0.125)
Firm size (ref. more than 500)				
up to 9 employees	-0.414***	(0.078)	-1.583***	(0.089)
10 to 99 employees	-0.516***	(0.059)	-0.604***	(0.061)
100 to 499 employees	-0.537***	(0.052)	-0.176***	(0.052)
Cohorts (ref. 1962 to 1971)				
1941 to 1951	-6.324***	(1.225)	-10.389***	(1.334)
1952 to 1961	-3.159**	(1.026)	-5.608***	(1.257)
1972 to 1981	4.785***	(1.160)	5.266***	(1.498)
1982 to 1991	5.198*	(2.639)	2.540	(3.331)
1992 to 2004	14.580***	(2.558)	16.754***	(3.652)

Education (ref. university)			
primary	-27.131***	(2.385)	-34.257*** (2.740)
intermediate secondary	-24.196***	(1.654)	-32.158*** (1.775)
higher secondary	-14.776***	(1.907)	-14.516*** (2.069)
intermediate vocational	-14.925***	(1.553)	-15.355*** (1.572)
higher vocational	-8.767***	(1.571)	-6.003*** (1.565)
Constant	21.930***	(1.796)	24.059*** (2.115)
Months	151,578	173,362	
Number of groups	1,293	1,366	

Standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05

Last, when differentiating caregiving by intensity (see Table 4.4), we found a negative effect on wage growth of intensive caregiving compared to have-never cared for women (0.004 euros). Hence, having cared intensively created a wage growth penalty for women. The small quadratic effect means that the wage growth penalty took place slowly over time. For men, we did not find a clear indication that caregiving intensity mattered for their wage growth. Yet, in the interaction models, we observed that female and male intensive caregivers differed. Men had stronger wage growth – a wage growth bonus – for intensive caregiving compared to women, who had a wage growth penalty when they cared intensively, both compared to women and men who have-never cared with a difference of 0.009 euros. This is illustrated in Figure 4.3. Male intensive caregivers initially started with lower wages and gained an advantage over time, namely a steeper wage growth, whereas female intensive caregivers lost their advantage in wages as they had slower wage growth. For the comparison between non-intensive caregiving and have-never cared in their wage growth, no clear differences between women and men were found.

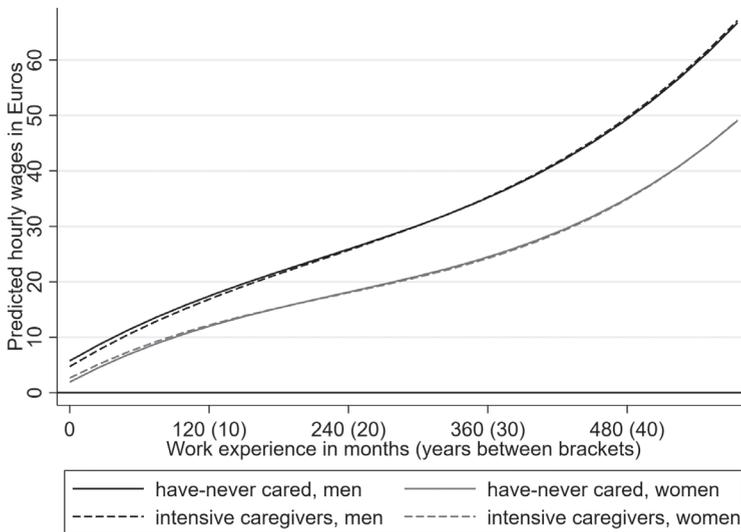


Figure 4.3 | Predicted hourly wages by work experience, comparing have-never cared to intensive caregivers differentiated by gender (based on interaction model with sex; not shown in tables). N=290,651 months of 2,551 respondents.

Table 4.4 | Growth curve analysis of hourly wages, caregiving intensity

	Women		Men	
Haver-never cared	ref.		ref.	
Non-intensive caregivers	-0.105	(0.192)	-0.149	(0.268)
Intensive caregivers	0.673**	(0.232)	-1.023***	(0.307)
Past caregivers	0.219	(0.220)	-0.249	(0.281)
<i>Wage growth</i>	0.125***	(0.014)	0.115***	(0.013)
*Non-intensive caregivers	-0.001	(0.002)	0.001	(0.002)
Intensive caregivers	-0.004	(0.002)	0.004	(0.003)
*Past caregivers	-0.006**	(0.002)	0.001	(0.002)
<i>Squared wage growth</i>	-0.000***	(0.000)	-0.000***	(0.000)
*Non-intensive caregivers	0.000	(0.000)	-0.000	(0.000)
*Intensive caregivers	0.000	(0.000)	-0.000	(0.000)
*Past caregivers	0.000***	(0.000)	0.000	(0.000)
<i>Cubic wage growth</i>	0.000***	(0.000)	0.000***	(0.000)
<i>Controls</i>				
Children (ref. no children)				
child under 4 living in the household	0.229**	(0.074)	-0.425***	(0.074)
child between 4 and 14 living in the household	0.103	(0.054)	-0.209***	(0.058)
Partner (ref. no partner)				
partner without employment	-0.301***	(0.068)	0.044	(0.072)
partner with part-time employment	-0.067	(0.075)	-0.235**	(0.073)
partner with full-time employment	0.038	(0.064)	-0.241**	(0.081)
self-employed partner	-0.550***	(0.109)	0.277*	(0.110)
Unemployment months	-0.018	(0.042)	-0.014	(0.033)
Sector (ref. private company)				
subsidized sector	-0.341***	(0.078)	0.588***	(0.125)
public sector	0.190	(0.099)	-0.420**	(0.137)
Firm size (ref. more than 500)				
up to 9 employees	-0.713***	(0.080)	-1.842***	(0.093)
10 to 99 employees	-0.603***	(0.060)	-0.666***	(0.064)
100 to 499 employees	-0.659***	(0.053)	-0.251***	(0.054)
Cohorts (ref. 1962 to 1971)				
1941 to 1951	-4.585**	(1.667)	-10.466***	(1.342)
1952 to 1961	-3.330*	(1.434)	-5.617***	(1.262)
1972 to 1981	7.349***	(1.726)	5.211***	(1.515)
1982 to 1991	1.187	(4.390)	2.316	(3.329)
1992 to 2004	12.829**	(4.123)	12.857***	(3.764)

Education (ref. university)				
primary	-24.418***	(3.308)	-33.725***	(2.750)
intermediate secondary	-21.621***	(2.391)	-31.319***	(1.797)
higher secondary	-15.506***	(2.795)	-14.167***	(2.094)
intermediate vocational	-15.998***	(2.323)	-15.179***	(1.595)
higher vocational	-9.772***	(2.353)	-5.907***	(1.591)
Constant	16.055***	(3.108)	25.566***	(2.117)
Months	134,136		156,515	
Number of groups	1,232		1,319	

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Robustness Checks

To test whether some of our decisions influenced our results, we ran six robustness checks. First, we corrected the hourly wages for yearly inflation, so we corrected for the rise in consumer prices (retrieved from <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/83131NED>). The results above were reproduced. Second, we excluded respondents who, at some point, earned more than 100 euros per hour (before we only excluded months after the first time earning 100 euros). This did not affect our results. Next, we included periods instead of cohorts, which again did not change our results. Changing the cut-off points for intensive caregiving to 11 hours instead of 8 hours showed that intensive caregiving was not differently influencing wage growth for women and men anymore. Yet, we found interesting results for non-intensive caregiving similar to those for intensive caregiving in the main models. Among men, non-intensive caregiving was related to a wage growth bonus whereas among women non-intensive caregiving was related to a wage growth penalty (compared to have-never cared). Changing the categories of duration to (1) up to five years (2) 5 to 10 years, and (3) more than 10 years, to have more differentiation among long-term caregivers, showed that, for women, having cared for more than 10 years was related to higher wage growth compared to have-never cared (coefficient=0.005, $p=0.032$); this implies that the enhancing wage growth effect of duration we found in the main models was extended in even longer durations. Finally, we checked if our results on caregiving overall and caregiving duration were also reproduced on the smaller sample we needed to use for the caregiving intensity models, which was the case. Altogether, the robustness checks showed similar patterns as in the main analysis.

Conclusion

In this study, we described the potential impact of unpaid caregiving on wage development based on work-care conflict and enrichment theory. We wanted to know how the combination of these two opposite mechanisms would work out: would caregivers face a wage growth penalty or bonus throughout their careers? And would that be different for women and men? We used three ways of conceptualizing caregiving: (1) the overall effect of caregiving, including a category for those who gave care but stopped,

(2) the duration of caregiving, and (3) caregiving intensity. The relationship between unpaid caregiving and wage development turned out to be gendered and the specific characteristics of caregiving (duration, intensity) indeed mattered. Past caregiving and intensive caregiving were in fact beneficial for wage development of men, while for women both past and intensive caregiving hampered their hourly wage development over time. This means that for men – under some conditions – there are signs that the enrichment mechanism outweighs the conflict mechanism, whereas for women the conflict mechanism overshadows the potential positive impact of enrichment. This was in line with our hypothesis that men can benefit (more) from caregiving. Once having stopped caregiving – meaning having acquired relevant resources while not being in an actual role conflict anymore – men experienced more wage growth compared to those that had never cared. For women, however, even after caregiving, the impact of experienced role conflict did not seem to end, presumably because they adjusted their work during caregiving to such an extent that they experienced the wage growth penalties of those adjustments even after caregiving stopped. In consequence, this gendered caregiving effect could widen the already existing gender pay gap.

Interestingly, besides some indications that longer caregiving durations enhanced female wage growth, there was generally little evidence for duration effects, both for women and men. Here more insights (e.g., from qualitative work) are needed to better understand the caregiving process. For example, how long can caregivers keep up with their paid work and combine it with care without having to change paid work or display lower productivity? Or how long is it acceptable to not be as productive as usual? It would also be interesting to know more about whether it was anticipated that caregiving would go on for a long time. This would also be helpful in understanding where relevant thresholds lie and when caregiving is short- or long-term.

Furthermore, high-intensity caregiving was associated with a bonus for men, but a penalty for women. One explanation for this finding could be that men caring intensively signal reliability and loyalty to their employer (an argument related to enrichment theory and the literature on the daddy bonus), while non-intensive caregiving might be unrecognized by the employer. Women, on the contrary, seem to be more penalized when caring intensively.

Although we found relevant results for enrichment theory and gender differences, it has to be noted that the effect sizes were generally small. Differences of less than a cent in hourly wage growth might not make the financial situation clearly better or worse for the specific caregiver or those not having cared. Other similar studies using yearly data only have also found small effect sizes when focusing on wage changes (Ehrlich et al., 2020). This can also be a positive conclusion that even if caregivers are reducing their working hours, their hourly wages are not yet substantially impacted. However, it has to be noted that small differences in hourly wage growth cumulate over time. Furthermore, given that populations are aging, caregiving is likely to increase further in the future and even little differences can scale up when calculated for complete societies and full employment careers. We invite future research to look into how much income is gained or lost for complete economies.

The Netherlands is a specific context when it comes to norms towards care and paid work. There is a clear shift away from formal care toward more unpaid care (Broese van Groenou, Jacobs, Zwart-Oldde, & Deeg, 2016). Compared to other countries, one strategy to combine care and paid work, namely reducing working hours, is facilitated and common in the Netherlands, even in high-status occupations (Hartog & Salverda, 2018; Pennings, 2018). Hourly wages are arguably less affected by reduced working hours in the Dutch context as it does not signal poor work commitment, making the Netherlands a least likely case. This means that the caregiving effects we found here are likely to be stronger in other contexts. However, reducing working hours is one of many mechanisms that can potentially lead to lower hourly wage growth. We focused on the overall effect of caregiving, not being able to look at the exact mechanism underlying wage growth or decline. The next step for future research could be to look more specifically into those mechanisms.

Being able to combine retrospective survey data with administrative tax data makes for a unique dataset having many benefits compared to other data sources. Still, there are two limitations we would like to address. First, we only focused on respondents who earned a wage, meaning that they had to be employed to be included in the models. We did control for months of unemployment, but those who do not come back to work after caregiving ends – which finds evidence in the literature (Ehrlich et al., 2019) – are not observed anymore. This means that the groups underlying our analysis are those caregivers that did manage to stay in (regular) employment, yet, quitting your job is the most detrimental consequence for a person's wage. This is not captured in our analysis or theoretical model and should be looked at separately in future research. Second, although we did have many relevant control variables measured monthly and the exact timing of (non)-caregiving, we missed information on the occupation of respondents. In the register data, the industry is available, but not the occupation within industries. Knowing the occupation of caregivers and non-caregivers could have said more about potential selection effects, for instance, respondents in certain occupations (e.g., care-related occupations) with (high or) low wage growth selecting themselves more into caregiving.

Overall, this study showed that considering both negative (because of role conflict) and positive (because of enhancement) caregiving effects on wage development helps to better understand the consequences of unpaid care, and to understand how those consequences may be different for men and women. Furthermore, this detailed analysis, based on unique retrospective unpaid care career data linked to register data over a period of 19 years, gave insights into long-term wage consequences that would not have been possible with cross-sectional data or even longitudinal data. Unpaid caregiving is heterogenous in its forms and one or multiple snapshots will not capture the heterogenous experiences with unpaid care (Fast et al., 2020).



Chapter 5

The Wage Penalty for Unpaid Caregivers from a Life Course Perspective



A slightly different version of this chapter is published as:

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The study on which this chapter is based was presented at the Population Association of America (PAA) conference (online) on May 7th, 2021 and the Trade, Technology, and Demographics: 6th international conference of the DFG Priority Program 176 (online) on July 16th, 2021. The study received feedback at the Sociology seminar at the Radboud University.

Abstract

Caring for a friend or family member in need of care has been found to have negative consequences for wages. This study contributes to the literature by studying how three major life course factors, namely timing of first caregiving, duration of caregiving, and the number of caregiving episodes, help to explain the (hourly) wage penalty for unpaid caregivers (i.e., providers of health-related care to older or disabled people in the personal network). We used unique retrospective data of 1,417 unpaid caregivers in the Netherlands that map start and end dates of up to seven caregiving episodes. Findings showed that a higher number of caregiving episodes was related to a stronger wage penalty, whereas timing of first caregiving was not associated with a wage penalty. Opposite to our expectation, we found that the wage penalty decreased the longer someone cared, potentially even resulting in a wage premium for long-time caregivers. We conclude that applying a life course perspective is relevant when examining employment consequences of unpaid caregiving and that caregiving possibly fosters skills that are beneficial for employment careers in the long run.

Introduction

In recent years the Dutch government has decided to decrease formal care (i.e., care by professionals who are trained and paid for it) and put more responsibility onto families (Broese van Groenou et al., 2016), which together with a growing older population increases the need for unpaid care. However, unpaid care, meaning the provision of health-related care to older or disabled people in the personal network (excluding help provided in a professional context or regular childcare), often stands in conflict with employment. Unpaid caregivers are more likely to reduce labor supply by reducing working hours (Gomez-Leon et al., 2019; Henz, 2004; Schmitz & Westphal, 2017; Van Houtven et al., 2013) or by dropping out of employment completely (Gomez-Leon et al., 2019; Henz, 2004; Hohmeyer & Kopf, 2020; Lee & Tang, 2013; Pavalko & Henderson, 2006). Additionally, unpaid caregivers generally earn less compared to (currently) non-caregivers (Carmichael & Charles, 2003; Carmichael & Ercolani, 2016; Earle & Heymann, 2012; Heitmueller & Inglis, 2007; Schmitz & Westphal, 2017; Van Houtven et al., 2013). This study focuses on the wage penalty that comes with unpaid caregiving and looks at three major life course factors that may explain why the wage penalty varies among caregivers, namely: timing of first caregiving, duration of caregiving, and the number of caregiving episodes.

Experiencing unpaid caregiving is distinct for most caregivers as caregiving can start in any life stage of a person, the duration can differ from short-term helping to lifelong caregiving, and a person can care for one or for multiple persons. To understand these heterogeneous experiences, and therefore also the heterogeneous employment consequences potentially resulting in lower wages, the life course perspective can provide a useful theoretical lens. The life course perspective enables us to approach the consequences of unpaid care provision from a long-term perspective taking into account that wages of unpaid caregivers can be affected by caregiving situations earlier in life, even those that have already ended (Schmitz & Westphal, 2017). We consider the care provision to one particular care receiver (for instance, the partner or father) as a care episode in one's life, with all care episodes together defining caregiving trajectories that span over the life course (Keating et al., 2019). The life course perspective acknowledges that it matters for the wage penalty when and how caregiving enters one's life for the first time (i.e., timing) as disadvantages early in life can accumulate. Also, by characterizing care histories in terms of duration of caregiving and number of caregiving episodes as indicators of longer and more potential employment interruptions, we improve our understanding of what aspects of the caregiving career are related to wages later in life. Altogether, we answer the following research question: *How do the timing of the first caregiving episode, the duration of caregiving, and the number of caregiving episodes matter for the wage penalty for unpaid caregivers?*

So far, only a few scholars empirically focused on caregiving from a life course perspective (see Keating et al., 2019) and little attention has been paid to how the consequences of unpaid care for employment differ over the life course (Carmichael & Ercolani, 2016; Fast et al., 2013; Fast et al., 2020; Hamilton & Cass, 2017; Henz, 2004).

Henz (2004) found that unpaid caregivers who started caregiving later in life were more likely to reduce labor supply and to not increase paid work again after care ended. Additionally, the longer the duration of the first caregiving episode, the less likely unpaid caregivers experienced a change in employment at the end of that episode. We follow Henz's (2004) life course focus and add to it by theorizing and empirically testing the consequences of unpaid care for wages and in doing so take a closer look at long-term rather than short-term consequences. The literature on wage penalties due to caregiving from a life course perspective mostly focuses on childcare (e.g., Muller, Hiekel, & Liefbroer, 2020). Unpaid care, however, is in general far less predictable than childcare and it can intersect with paid work at more various moments throughout the life course (Ehrlich et al., 2019; Henz, 2004). Our theoretical contribution is that we transfer the life course arguments often used in research on the impact of childcare on wages, namely role strain theory and human capital theory, to unpaid care and test whether these are plausible when applied to unpaid care.

We built our analysis on unique retrospective data on unpaid caregiving that includes 1,417 current and past unpaid caregivers in the Netherlands. Unpaid caregivers were selected from the participants of the Longitudinal Internet studies for the Social Sciences (LISS) if they indicated that they are or were caring for someone. Unpaid caregivers (thus referring to both current and past caregivers) were asked retrospective questions on their caregiving episodes so that full caregiving histories of the unpaid caregivers could be reconstructed. The unpaid care wage penalty was assessed by matching the caregivers in our sample to non-caregivers (outside our empirical sample) who were similar in terms of educational level, partner, children, age, and sex. Next, we assessed in our sample of caregivers to what extent the unpaid care wage penalty in hourly wages in 2020, or wages right before retirement, depended on the life course factors timing of first caregiving, duration, and the number of episodes, which we derived from the detailed caregiving histories.

Theory and Hypotheses

Unpaid Care Wage Penalty

Although caregiving could have positive effects on unpaid caregivers' lives, many scholars found a negative relation between care and paid work (Fast et al., 2013; Gomez-Leon et al., 2019; Henz, 2004; Hohmeyer & Kopf, 2020; Kelle, 2020; Korfhage, 2019; Lee & Tang, 2013; Pavalko & Henderson, 2006; Schmitz & Westphal, 2017; Van Houtven et al., 2013). Unpaid caregiving often stands in conflict with paid work because the caregiving role competes with the employment role. According to role strain theory, this conflict arises because it can be difficult to combine and meet all the expectations in both roles due to time restrictions and spillover of strain from one role to the other (Greenhaus & Beutell, 1985; Lee & Tang, 2013).

If the role conflict between care and paid work becomes too pressing, unpaid caregivers have to find a way to better combine both roles. One option to lower strain is handing over caregiving tasks to other formal or unpaid caregivers. However, a frequent

option and for some caregivers perhaps the easier way to cope with the conflict is to adjust employment. Caregivers may reduce labor supply by reducing their working hours or by quitting their job altogether. Other ways to better combine paid work and care are to become self-employed or to change to a job that accommodates care and paid work (Fast et al., 2013). A strategy could be to choose less demanding jobs, which are often jobs with lower status and fewer career prospects (Abendroth et al., 2014).

Our starting point is that scholars (not explicitly testing the life course perspective) found that decisions on the side of work employment because of care provisions can have long-lasting consequences (e.g., Schmitz & Westphal, 2017; Skira, 2015) also after caregiving has ended as employment decisions (e.g., labor supply reduction) are often not reversed (Ehrlich et al., 2019; Schmitz & Westphal, 2017; Skira, 2015). Even if there is no intended employment adjustment, paid work can still be influenced by caregiving. For instance, unpaid caregivers might miss out on a promotion because they miss work more frequently or have (or are stigmatized to have) lower work performance (for a literature review see Martsolf et al., 2019)). Reducing labor supply, changing jobs, becoming self-employed to be more flexible, missing a promotion, negative work performance (or the stigmatization as such), and employment interruptions are all mechanisms that explain why we expect that those who ever provided care in their lives on average earn less compared to those who have never provided care with similar characteristics.

There are thus several mechanisms that explain why unpaid caregiving would harm wages. The life course perspective adds to these mechanisms by taking into account that paid work-related changes can accumulate over the life of the caregiver. In this study, the separate mechanisms are not directly tested because the focus is on the total effect of the life course factors on the wage penalty for unpaid caregivers as an indicator of short-but also long-term consequences. In the following section, we will elaborate on how the life course factors potentially impact the unpaid care wage penalty by arguing how the mechanisms of time or role conflict work out differently, depending on when (timing), for how long (duration), and how often (number of episodes) care was provided over the life course. All life course factors are interrelated with each other, meaning that the earlier in life unpaid caregivers start to care, the more likely they are to care longer and to have more caregiving episodes in their lives. Nevertheless, we can distinguish them theoretically (as well as empirically).

Timing of Caregiving

Starting to care is a turning point in a person's life and can have long-term consequences by shaping identity, behavior, and events and transitions in other life domains, such as the employment domain (Elder et al., 2003). How impactful an event or new episode is, depends on the timing in a person's life (Elder & Giele, 2009). Thus, unpaid caregiving can be experienced and approached differently depending on when in someone's life it occurs (Abendroth et al., 2014; Elder et al., 2003). This also means that paid work is disrupted differently in different life stages, and consequently, that timing of caregiving affects the unpaid care wage penalty. In the following, we borrow arguments from the literature on the motherhood penalty literature, in which becoming a mother has weaker

employment consequences the later in life the first child was born (Abendroth et al., 2014), and adapt them to unpaid caregiving.

Handling the work-care conflict that potentially arises with unpaid care is arguably the most difficult in early adulthood since scaling back paid work could reduce career prospects. When caregiving, especially those who are younger will be restricted in their opportunities in the domain of paid work. For instance, they might not be able to move far for a job if they care for someone, restricting their employment career opportunities. After early adulthood, in which we argue it is mainly the transition into the first job that is influenced by caregiving, traditionally comes the family formation stage. In this stage, employment and unpaid care might strongly clash if the unpaid caregiver additionally cares for young children. When still in the career-building phase in life, this 'triple burden' can result in missing promotions and/or might motivate people to choose a lower-status career that is easier to combine with unpaid caregiving and childcare (Abendroth et al., 2014).

Furthermore, disadvantages in the domain of paid work accumulate over the life span: inequalities earlier in the employment career intensify and the loss in wages will add up over the life course (Crystal et al., 2016; Möhring, 2018). A loss or stagnation in human capital will have long-lasting consequences if it occurs early in working life when it is important to gain experience, educate yourself, develop skills, show productivity, and establish a career (Abendroth et al., 2014; Florian, 2018; Muller et al., 2020). It is more influential for the employment development when the conflict occurs earlier in life as young caregivers might be perceived as less committed to work, less productive, and less suited for promotion (Abendroth et al., 2014; Ehrlich et al., 2019). Older unpaid caregivers, in contrast, have already established their careers, accumulated human capital, and built a professional social network to rely on (Florian, 2018). Altogether, the impact of caregiving on the wage penalty for unpaid caregivers should be higher for unpaid caregivers who started earlier with caregiving than caregivers who started later in life. This leads to the following hypothesis: *The earlier the life stage in which caregiving started, the larger the wage penalty for unpaid caregivers (H1).*

Duration of Caregiving

Using a similar argumentation, integrating the life course perspective and human capital theory, we expect the wage penalty to be conditional on the duration of caregiving. The duration is the time between starting and ending a caregiving episode (Elder et al., 2003), with the total duration being the number of months people provided care in one's life, either to one or multiple people simultaneously. Starting to care can involve a change in status, identity, and often behavior (Elder et al., 2003). The conflict between care and paid work is a process and has to first develop and amplify before the impact on paid work becomes apparent. In the case that caregiving and paid work have to be combined for a longer time, adaptations on the side of employment become more likely and the caregiver is (perceived as) less productive for a longer time. This implies that with longer duration more human capital is potentially lost. It is easier to catch up in terms of human capital and rebuild professional relationships after a short time of caregiving, resulting

in a lower wage penalty (Keating et al., 2019). *We hypothesize that the longer the duration of caregiving, the larger the wage penalty for unpaid caregivers (H2).*

Number of Caregiving Episodes

The last factor potentially influencing the wage penalty for unpaid caregivers is the number of caregiving episodes. In our definition, a caregiving episode refers to a period of care for one particular person (e.g., mother). People may have experienced multiple caregiving episodes in life (e.g., care for one's mother and partner), potentially at the same time (i.e., overlap). Even when overlapping for some time, the episodes count separately. From the literature on childcare, we know that the wage penalty increases with each additional caregiving episode (Abendroth et al., 2014). Compared to one-time unpaid caregivers, unpaid caregivers who take up multiple caregiving episodes during their lives more often come in the situation where the caregiving and paid work role are in conflict. For each additional caregiving episode, they again have to find a way to combine paid work and care. Each episode is unique and potentially involves additional and distinct work-care conflicts as the relationships in each episode are different resulting in more but also different conflict situations. This means that each potential conflict has to be addressed and an own handling has to be found. Hence, unpaid caregivers with a higher number of caregiving episodes might have a higher likelihood of having reduced employment (as found in the Canadian context, see Fast et al. 2013) or having changed to a job in which they are better able to combine paid work and care, just as mothers with multiple children (Abendroth et al., 2014). Consequently, the loss in human capital leading to a reduction in wage is higher the more caregiving episodes a person experiences. From this, we derive the hypothesis that *the more caregiving episodes a person experiences, the larger the wage penalty for unpaid caregivers (H3).* This relationship might not be linear as the wage loss per caregiving episode might not be equal. Some of the adjustments, like reducing working hours, might not have to be arranged again in the following episodes. Moreover, the (negative) employer's perception of the caregiver likely becomes more stable the more often the caregiver cares for someone, as it is for having children (Abendroth et al., 2014).

Caregiving Situation

How large the wage penalty for unpaid caregivers is and how that can be explained by the life course factors can be partly attributed to differing care situations. Care situations vary over the life course and are related to employment outcomes. We want to filter out the independent effects of the life course factors, which is why we control for factors related to the care situation. First, the extent to which caregiving influences wages depends on the relationship between the unpaid caregiver and the care recipient. Caring for a child or partner where the unpaid caregiver is the main unpaid caregiver compared to caring for a friend or neighbor, influences the work-care conflict and how it is addressed (Henz, 2004). For instance, unpaid caregivers might be willing to reduce employment to care for a close family member, but not for a neighbor. In a similar line of argumentation, the work-care conflict might differ depending on whether unpaid

caregivers see the caregiving task as their duty or not. In the ethics of care, it is argued that it is not the same to care for a person out of obligation as to care out of sympathy (Rachels & Rachels, 2012). A person who cares out of sympathy rather than obligation will be more willing to give up other tasks or roles. Third, the relationship between caregiving and wages depends on how intensive the caregiving is. Scholars found that the negative impact of care on employment is stronger as the number of hours spent on caregiving is higher (e.g., Hohmeyer & Kopf, 2020; Kelle, 2020). Fourth and last, doing several tasks for one person in need arguably requires more effort than doing only one or a few different tasks, which could also affect paid work-related decisions.

Methods

Data

Our analysis of the influence of the three life course factors on the wage penalty for unpaid caregivers will be based on a sample of unpaid caregivers only. However, to create our outcome variable, i.e., the unpaid care wage penalty, we used information on non-caregivers too. We used the 'Retrospective informal care career' data collected among the Longitudinal Internet studies for the Social Sciences (LISS) panel administered by CentERdata (Tilburg University, the Netherlands). The panel is based on a representative sample of the Dutch population (see www.lissdata.nl and Scherpenzeel & Das, 2010 for more information). While the data on current wages was collected yearly in the core studies, the caregiving study consisted of a two-step data collection. The first time, in January 2020, the complete panel was asked:

"The following questions are about providing unpaid care to people you know with health problems. These people could be your partner, a family member, a friend, neighbor, acquaintance or colleague who needs or needed help because of physical, psychological or mental limitations or because of old age. Examples of unpaid care are doing household chores, helping with washing and dressing, keeping company, providing transport or performing odd jobs. You may have done so for a short period or for a long period. It could involve people known to you to whom you provided care in the past, but could also involve people known to you to whom you are providing care at present. Care provided as part of your occupation or as a volunteer does not count. Have you ever provided this type of care in your life?" (Verbakel @ CentERdata, 2021).

82.9% of the panel answered this question (N=5,315) (Verbakel & CentERdata, 2021). Those who care or cared at least once in their life were regarded as unpaid caregivers, whereas those who never did were considered non-caregivers.

The second time, in March 2020²⁰, the subsample of unpaid caregivers aged 16-78 was asked retrospective questions on up to seven past or current caregiving episodes (87.5% response rate among those who indicated they cared in January, N=3,061) (Verbakel & CentERdata, 2021). This unique data collection allowed us to reconstruct full caregiving histories, including information on each caregiving episode, and to combine

²⁰ The data collection took place during the start of the COVID-19 pandemic. However, the data appeared not to be biased as the responses on potentially biased variables of people answering the questionnaire before and after March 15 did not differ statistically (Raiber et al., 2021).

these histories with background and wage information of the respondents from the core modules of the LISS panel, which are repeated yearly.

We considered two kinds of respondents in our sample²¹: (a) the ones who were employed or self-employed in March 2020 and (b) the ones who were employed or self-employed but retired in or after 2009, which is the year from which on we have data on wages before retirement.²² We decided to include the self-employed because self-employment can be a coping strategy for unpaid caregivers when experiencing a care-work conflict (see also Robustness Checks). For respondents who were still working, the available information on wages in the LISS panel was from the previous year, that is, 2019. We therefore trimmed caregiving histories at the end of 2019. As a result, 42 unpaid caregivers who only had caregiving episodes in 2020 were considered non-caregivers. For retirees, we used their last fully (self-)employed year as the foundation for their wage. Caregiving episodes after retirement were not included in the analysis because they cannot affect wages anymore (54 retired respondents with caregiving episodes only after retirement were considered non-caregivers) and caregiving episodes that span from pre-retirement into retirement were cut at the end of the last (self-)employed year. The final sample to start constructing our measures consisted of 1,417 current and past unpaid caregivers (N=16 deleted before the main analysis due to missing values on control variables) and 1,013 non-caregivers.

Measures

Dependent variable. Our dependent variable, the unpaid care wage penalty, reflected the calculated difference in hourly wages between unpaid caregivers (i.e., those who ever in their life provided unpaid care) and similar non-caregivers (i.e., those who never provided care), measured at the respondent level. As a first step, we constructed hourly wages for both caregivers and non-caregivers. We choose hourly wages rather than monthly or yearly wages to avoid having an indirect measure of the number of weekly working hours. The hourly wages were constructed based on the total annual wages of all jobs the respondent had in 2019, or the year before retirement, divided by 52 (to make it weekly wages) and divided by the self-reported weekly (contractual) working hours in 2019, or the year before retirement, in their main job and side job (if any), top-coded at 60 hours.^{23,24} For self-employed and on-call employees, we used actual working hours as these groups do not have fixed working hours (for an analysis without self-employed see Robustness Checks).

²¹ Before defining the sample several caregivers were excluded from the caregiver sample. 38 caregivers were excluded due to missing on the start date of the caregiving, the baseline for the life course variables. 35 caregivers were excluded because they were not clearly definable as informal care or non-caregiving. 7 caregivers were excluded because they indicated a starting date for caregiving before the age of five.

²² Due to this sample definition we excluded 2,710 non-caregivers and informal caregivers who did not work or retired before 2009.

²³ In case there were missing values on the exact annual wage, we used the mid-value of the categorical question, e.g., 12,000 Euros for the category 8,000 to 16,000 Euros per year.

²⁴ The data on wages were from wave 13 of the 'Economic Situation: Income' questionnaire of the LISS panel, collected in June and July 2020 because the question in 2020 asked for the annual wages in 2019. Hours worked are collected in April and May 2019 in wave 12 of the 'Work and Schooling' questionnaire because they asked for current hours worked.

Both the wage and working hours variable had missing values in our sample of employed caregivers and non-caregivers (wage 30% missing values; working hours 19% missing values). Those missing values were potentially not random (Riphahn & Serfling, 2005). We imputed 25 datasets with multivariate imputation using chained equations (MICE) (see Royston & White, 2011) in STATA 16 separately for women and men to impute wages and hours worked. We used multiple, relevant variables for the imputation (educational level, children, partner, age, caregiving yes/no, income including wages and other sources besides paid work, working hours the year before, age squared, and wage information from the year before), which is why we are confident that we came as close as possible to the real value.²⁵ After the imputation and subsequent calculation of hourly wages, we coded all hourly wages below 1 Euro (bottom 0.05%) to 1 Euro per hour (similar to Langner, 2018) and coded all wages above 580 Euro (top 0.05%) to 580 Euros to make them more realistic (see also Robustness Checks).

The second step consisted of creating the unpaid care wage penalty by assessing the difference in hourly wages between similar unpaid caregivers and non-caregivers. This step is both necessary and innovative. It is necessary because this study is about testing whether the penalties for caregiving vary across caregivers with different life courses. Non-caregivers logically have no valid information on our life course factors (timing of first caregiving, duration of caregiving, and number of caregiving spells). Hence, our main analysis must be based on a sample of caregivers only. We used the nearest neighbor approach (nnmatch algorithm in STATA, see Abadie, Drukker, Herr, & Imbens, 2004). This implies that we compared the wage of a caregiver with that of non-caregivers who were very similar in several respects based on the matching variables. We matched, split by sex, the unpaid caregivers to non-caregivers with the most similar values on the variables educational level, partner, children, year of retirement, and age. The unpaid caregivers were matched to a minimum of four (or, in case multiple non-caregivers were equally close, more than four non-caregivers) (Abadie et al., 2004). Of the 1,013 non-caregivers in our sample 97 percent (N=980) were used in the matching process. The average estimated distance between the matches was 0.19 for men and 0.31 for women. For both sexes, the median was very close to the optimal match, with a distance of 0.02 for men and 0.05 for women. For women, 12% of the matches were perfect matches (distance zero) and for men, it applied to 14% of the matches.

For each caregiver, the average wages of the non-caregivers matched to them were subtracted from the wages of the caregiver to calculate the wage difference. This unpaid caregiving wage penalty, now assigned as an individual characteristic to each caregiver in our sample, was our dependent variable. On the final scale (see also Figure 1), positive values mean that unpaid caregivers earned more than non-caregivers (i.e., a wage premium) and negative values mean that unpaid caregivers earned less than non-caregivers (i.e., a wage penalty).

²⁵ The imputation was used to construct our outcome variable, which is why we took the average for weekly wage and hours worked from the imputed datasets to construct hourly wages.

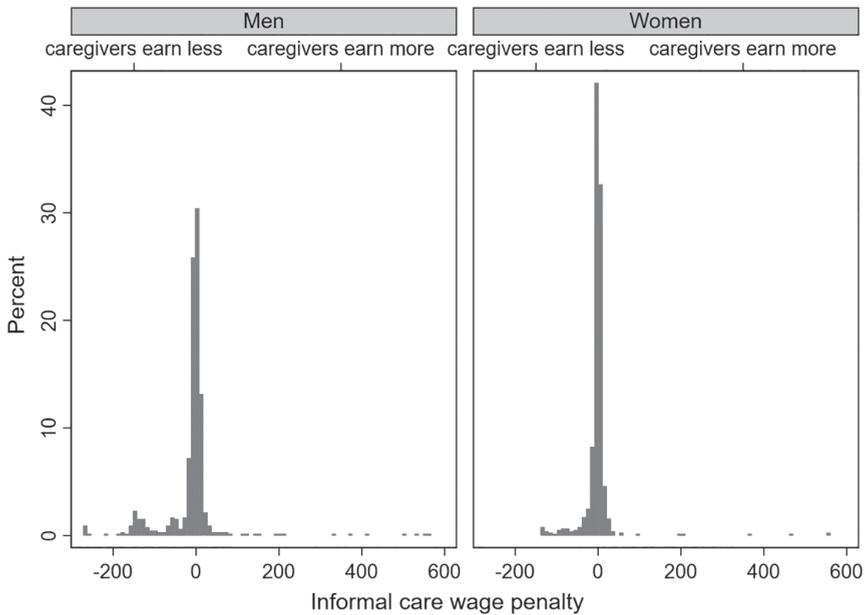


Figure 5.1 | Distribution of the informal care wage penalty (wage difference between caregivers and non-caregivers). Men N= 654 and women N=763.

The wage difference between unpaid caregivers and non-caregivers after matching was on average negative for both women (-1.81 Euro) and men (-11.08 Euro), meaning that there was indeed a wage penalty for unpaid caregivers, which was larger for men than for women (see Table 1 for all descriptive results). To test if the difference between caregivers and non-caregivers was significant on a 5%-level, we ran an OLS regression on the wages comparing both caregivers and non-caregivers with the matching variables as control variables. For men, the wage penalty was significant, but for women, it was not. However, in this study, we want to explain *variation in the wage penalty* by the life course factors. For women, the hourly wage difference had a standard deviation of 44; for men, it was 74. Hence, for both women and men, there was sufficient variation in our outcome to be possibly explained by the life course variables.

Main predictors. Our first predictor variable was the timing of first caregiving. For unpaid caregivers with multiple episodes, the age at the start of the first episode was chosen. We defined six life stages: (1) young caregivers with a starting age before 17, (2) young adult caregivers between age 18 and 27 (reference category),²⁶ (3) caregivers in the early family formation stage between age 28 and 37, (4) caregivers in the late family

²⁶ Both young caregiver and young adult caregiver are life stages based on Hamilton and Adamson (2013). 27 years was used as the end of the young adult life stage because 28 seems a realistic cut point as the start of the family formation stage for both women and men as well as for different generations (Statistics Netherlands (CBS), 2018).

formation state from age 38 to 47, (5) older caregivers between age 48 and 57, and (6) caregivers near retirement with an age at first episode above 57.²⁷ Second, the duration of caregiving was measured as the total number of months over one's life spent on caregiving. Months with simultaneous caregiving episodes only counted once. Last, the number of episodes reflected the total number of episodes which equals the number of different people the caregiver cared for.²⁸

Control variables. The control variables combined information from all caregiving episodes to make the most use of the available data. This means that all control variables were aggregated to the level of the caregiver. First, we included three separate dummy variables (0/1 coded) on the closeness of relationships: (1) ever cared for close family, meaning partner, parents, or child, (2) ever cared for other family members, and (3) ever cared for non-family. Caregivers might thus score one in multiple categories, for instance, when they cared for their partner and their sister. The next control variable was a dummy on felt obligation as a reason for caregiving. If unpaid caregivers in one of their episodes indicated that they experienced caregiving as an obligation, they scored 1 on the obligation dummy. If a caregiver never felt obligated the value is 0. The intensity of caregiving was reported for the start and end (or current situation) of each caregiving episode. We took the average of all episodes' maximum hours of caregiving, meaning the sum of the maximum intensity per episode divided by the number of episodes for which we knew the intensity. Finally, we calculated the number of different tasks (differentiating companionship or emotional support, transportation, assistance when visiting a doctor, administrative help, housekeeping, personal care, nursing care, arranging or coordinating care, and other care) per episode averaged over all episodes for which the tasks were known.

Analytical Strategy

We ran linear regression models on the wage penalty on our sample of unpaid caregivers. The three predictor variables – timing, duration, and the number of caregiving episodes – were first added one by one (on top of the control variables) so that we could observe what they separately added to explain the wage penalty. The final model included all life course factors simultaneously in one linear regression model, so controlled for each other. The model was estimated for women and men separately, because of their different norms and behavior towards paid work and care (Smith et al., 2020). We compared the results of the sex-specific analysis to the overall results.

²⁷ Using a continuous variable for age at first caregiving did not change any of our conclusions.

²⁸ It was possible to enter details on up to seven episodes. We excluded all respondents with more than seven episodes (N=75) because we could not accurately assess their age at first caregiving or the total duration.

Results

Descriptive Results

When looking at the main predictors in Table 5.1, we see that unpaid caregivers in our sample on average started to care below the age of 40, with women on average at age 36 (median is also age 36) compared to men who started to care a few years later, on average at age 39 (median is age 40). For both women and men, the average duration of caregiving episodes was around 9 years (112 months for women and 107 months for men), both with high standard deviations (130 months for women and 123 months for men). The median duration was 57 months for men and 61 months for women (approximately 5 years). Regarding the number of caregiving episodes, both women and men mostly had two caregiving episodes (median), with women having a slightly higher average (2.25 versus 2.05).

Table 5.1 | Descriptive statistics

	Women (N=763)			Men (N=654)		
	Range	Mean / %	S.D.	Range	Mean / %	S.D.
Outcome variable						
Unpaid care wage penalty	-139.06-559.22	-1.78	43.38	-272.23-559.28	-11.06	73.48
Predictor variables						
Age at first caregiving						
5 to 17	5-17	7.47		5-17	8.26	
18 to 27	18-27	21.89		18-27	14.37	
28 to 37	28-37	25.29		28-37	21.56	
38 to 47	38-47	21.10		38-47	23.70	
48 to 57	48-57	19.13		48-57	23.09	
58+	58-71	5.11		58-78	9.02	
Duration in months	1-711	112.31	129.71	1-733	106.58	123.22
Number of episodes	1-7	2.25	1.44	1-7	2.05	1.31
Control variables						
Relationship: Close family	0/1	74.97		0/1	73.65	
Relationship: Family	0/1	47.58		0/1	44.83	
Relationship: Non-family	0/1	31.98		0/1	28.97	
Obligation	0/1	26.34		0/1	28.38	
Tasks	1-9	3.24	1.56	1-9	3.2	1.58
Intensity	1-168	7.46	13.67	1-168	6.97	12.94

Figure 5.2 shows the descriptive patterns in the wage penalty in combination with the life course variables. We do not observe the expected tendency that caregivers who started caregiving in an earlier life stage experienced a larger wage penalty than caregivers who started later. Caregivers who started at age 58 or older even had the highest wage penalty with 11.74 Euros. For caregiving duration, we see that until 350 months (about 29 years) there was a wage penalty, meaning that unpaid caregivers earned less compared to similar non-caregivers. After 400 months (about 33 years) there seems to be a wage premium for caregivers. These values are, however, driven by very few caregivers (<1%) and should therefore be interpreted with caution. Regarding the number of caregiving episodes, a tendency is visible that unpaid caregivers earned less for each additional episode until five episodes. From six episodes on (N=30), the wage penalty decreased and even became a wage premium at seven episodes, indicating a non-linear relationship. However, it should be noted that only 11 caregivers in our sample experienced seven episodes.

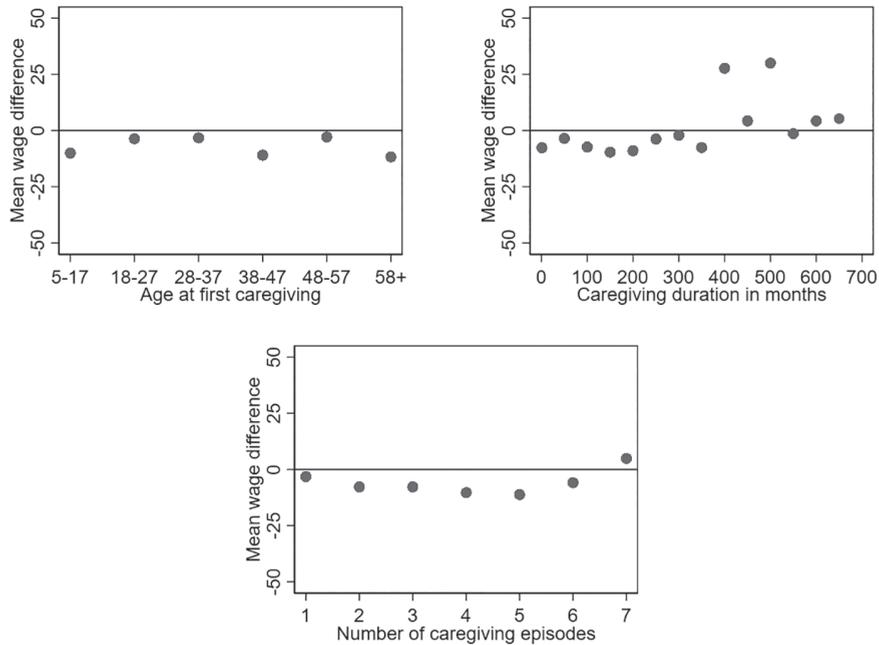


Figure 5.2 | Mean values of the unpaid care wage penalty are displayed by the main predictors. Note: for visibility reasons, caregiving duration in months was categorized. N=1,417.

Correlations between Life Course Factors

The life course factors were, not surprisingly, correlated. The more caregiving episodes a person had, the longer the duration was (*Pearson's* $r=0.40$, $p=0.00$). Age at first caregiving was negatively related to both the number of caregiving episodes (*Pearson's* $r=-0.23$, $p=0.00$) and duration (*Pearson's* $r=-0.34$, $p=0.00$). The earlier a person started

with caregiving, the more caregiving episodes they had and the longer the duration of caregiving was. In the multivariate analysis, we included the life course factors one by one as well as simultaneously.

Multiple Regression Results

Table 5.2 presents the results of the multiple regression analysis. We found no effects of timing of first caregiving (i.e., the different life stages), not in Model 1 nor in Model 4. This means that we found no evidence for H1 that caregivers who started providing care at an earlier age would have experienced a greater wage penalty.

Regarding the duration of caregiving, we found a significant positive effect on the wage penalty for unpaid caregivers (Model 2), which contradicts H2 that the wage penalty would be larger with a longer duration. This means that for each additional caregiving month, the wage penalty compared to similar non-caregivers was smaller. The effect size of 3 cents per additional caregiving month, or 40 cents per extra caregiving year, can be interpreted as a small effect.

Figure 5.3 shows the calculated average marginal effects of the unpaid care wage penalty by duration of caregiving in months. A caregiver with only one month of caregiving earned 9.25 Euros less than a similar non-caregiver. The difference decreased for each additional month of caregiving significantly until 170 months, that is the first 14 years, to -3.93 Euros. After 14 years of caregiving, the results are less certain, which is probably due to the smaller amount of observations (80% of the observations involved less than 14 years of caregiving).

Table 5.2 | OLS regression analysis of the wage difference between unpaid caregivers and non-caregivers, unstandardized coefficients

	Model 1	Model 2	Model 3	Model 4	Model 5a women	Model 5b men
Age at first caregiving						
5 to 17	-5.26 (6.77)			-5.23 (6.80)	-9.27 (6.89)	-1.20 (12.63)
18 to 27	ref.			ref.	ref.	ref.
28 to 37	0.66 (4.97)			1.44 (4.97)	1.41 (4.72)	0.55 (9.88)
38 to 47	-6.19 (5.06)			-5.27 (5.09)	-4.13 (5.01)	-7.57 (9.78)
48 to 57	1.98 (5.15)			3.64 (5.23)	2.32 (5.20)	3.92 (9.95)
58+	-7.24 (7.18)			-5.31 (7.26)	9.27 (8.01)	-15.42 (12.58)
Total duration in months		0.03* (0.01)		0.03* (0.01)	0.01 (0.01)	0.06* (0.03)
Number of episodes			-8.85 (5.16)	-10.22* (5.18)	-4.02 (5.17)	-17.90 (9.75)
Squared number of ep.			0.93 (0.74)	1.07 (0.74)	0.36 (0.72)	2.08 (1.44)
Close family	-5.24 (3.92)	-6.62 (3.97)	1.23 (5.09)	0.20 (5.11)	1.64 (5.12)	-1.23 (9.56)
Other family	-2.45 (3.45)	-3.83 (3.41)	3.29 (4.54)	2.92 (4.57)	1.61 (4.57)	3.78 (8.50)
No family	2.80 (3.62)	1.46 (3.64)	7.70 (4.65)	7.49 (4.66)	4.63 (4.64)	10.75 (8.72)
Obligation	0.97 (3.86)	0.68 (3.86)	1.18 (3.86)	0.45 (3.86)	3.36 (4.08)	-2.40 (6.80)
Number of tasks	-0.44 (1.09)	-0.59 (1.09)	-0.41 (1.08)	-0.56 (1.10)	0.67 (1.12)	-1.63 (1.98)
Intensity	0.05 (0.12)	0.06 (0.12)	0.05 (0.12)	0.04 (0.12)	0.02 (0.12)	0.07 (0.23)
Sex	8.91** (3.21)	9.41** (3.18)	9.33** (3.19)	9.05** (3.21)		
Constant	-13.05 (8.11)	-15.63* (6.99)	-11.41 (8.05)	-9.55 (9.00)	-2.66 (7.32)	11.91 (14.45)
Number of caregivers	1,417	1,417	1,417	1,417	763	654

Note: Standard errors in parentheses. Significance levels: ** p < 0.01; * p < 0.05.

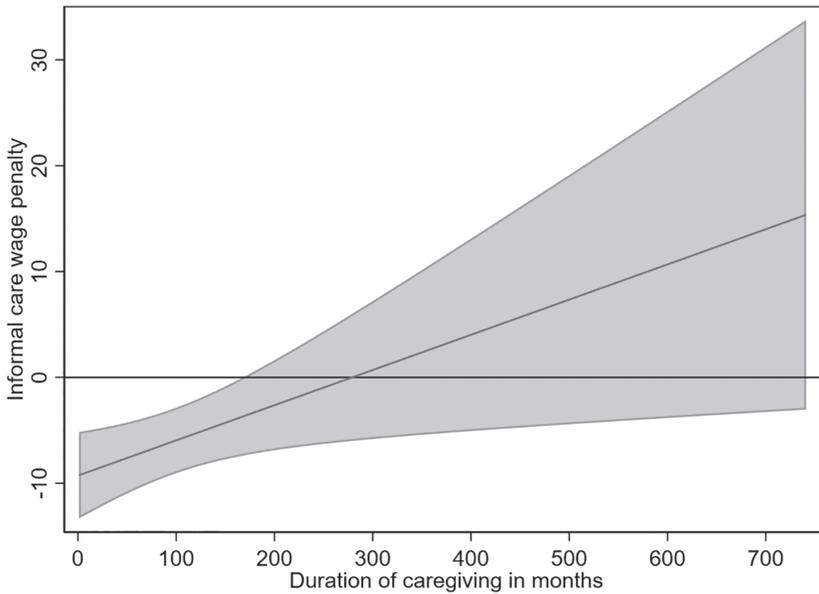


Figure 5.3 | Average marginal effects of the informal care wage penalty by duration of caregiving in months. The grey area indicates the 95% confidence interval. N=1,417

For the number of caregiving episodes, we found in the full model (including the other life course factors, see Model 4) that for each additional caregiving episode, the wage penalty significantly increased. The effect size of 10.22 euros increase per episode can be considered a strong effect. Figure 5.4 again shows the average marginal effects of the wage penalty. It can be seen that one-time caregivers did not differ in wages from non-caregivers, but that there was a wage penalty from two episodes on. The wage penalty increased with a maximum difference of 55.55 euros at seven episodes.

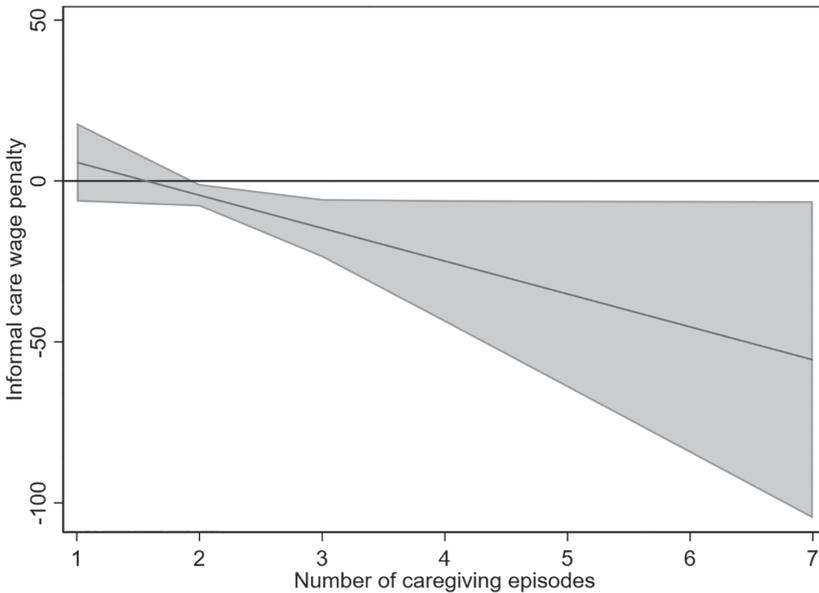


Figure 5.4 | Average marginal effects of the informal care wage penalty by number of caregiving episodes. The grey area indicates the 95% confidence intervals. N=1,417

When splitting the full model for women and men, results showed that for men the effect of duration was reproduced and the effect of the number of episodes was somewhat less certain ($p=0.07$). The model for women reproduced the results but was not significant on a 5% significance level, which means that the results seemed to be driven by men. We conclude that duration had an effect on the wage penalty, especially for men, but that the effect was in the opposite direction than expected. The number of caregiving episodes was negatively related to the unpaid care wage penalty, especially for men, which gave some support for H3 that more caregiving episodes would increase the wage penalty.

Robustness Checks

To check the robustness of our results, we ran six additional analyses. First, we bottom-coded the hourly wages to 4.50 euros instead of 1 euro because 4.50 is a more reasonable minimum amount someone earns per hour in the Netherlands.²⁹ This did not change our results. Second, we checked if there is, similar to the number of episodes, also a non-linear effect of duration. This was not the case. Third, in the matching procedure to create our outcome variable, we varied the number of non-caregivers to which the unpaid caregivers were matched (three or five rather than four). The results for the duration effect were unaffected, but the effect of the number of episodes became less certain. In

²⁹ There is no general minimum hourly wage in the Netherlands. The value was chosen because it is a reasonable cut point for all sectors and because it is unlikely to have a lower hourly wage in the Netherlands.

the fourth robustness check, we checked whether outliers on our dependent variable, meaning very high values on the wage difference, were driving our results. Reducing the range of the wage difference to -200 to +200 (or alternatively to -50 to 50) did again not influence the results regarding duration but did make the effect of the number of episodes less certain. Next, we checked if high values on the life course variables could have influenced the results. Top-coding high values on duration at 524 months (highest 1% top-coded), or the number of caregiving episodes at 6 episodes (highest 1% top-coded), did not change the results. Excluding the high values of duration (more than 524 months) did not result in different results. Dropping caregivers with more than 7 episodes resulted in insignificant results for the number of episodes ($p=0.11$). However, we have reasons to believe that it is not unrealistic to have cared for seven people and that those caregivers add to our understanding of the wage penalty. Last, when excluding the self-employed, the results for the duration were again reproduced, whereas the effect of the number of episodes was reproduced with less certainty. We conclude that our results were robust with regard to the effect of duration, but that effect on the number of episodes was less robust.

Conclusion

In this study, we examined how the life course factors timing of first caregiving, duration of caregiving, and the number of caregiving episodes mattered for the wage penalty for unpaid caregivers. Our research design allowed us to use information on wage differences and on the life course factors of up to seven caregiving episodes the unpaid caregivers had until the time of the survey, enabling an innovative analysis of the long-term consequences of caregiving on wages. Especially male caregivers earned less per hour than similar male non-caregivers, with a wage difference of 11 euros. Women earned on average 2 euros less than similar female non-caregivers. Findings showed that the timing of caregiving did not matter for the wage penalty, but that unpaid caregivers who cared for a longer time had a smaller wage penalty than unpaid caregivers who only cared for a few months. This is in the opposite direction than we expected as we argued that unpaid caregivers would have more difficulties combining care and paid work the longer the caregiving continues, resulting in higher wage penalties. Furthermore, we found that caregivers earned less compared to similar non-caregivers the more often they started care. This was in line with our expectations as we argued that caregivers who were confronted with more caregiving episodes during their lives experience more but also different situations with a work-care conflict. With each new caregiving episode, the (new) work-care conflict has to be managed, meaning that each episode can potentially result in an adaptation of paid work or perceived lower productivity in employment that consequently lowers the caregiver's wage.

A potential explanation for why we found an effect of duration in the opposite direction than expected and no effect of timing of first caregiving could be that the assumption of cumulative disadvantages did not hold or was weaker than expected. Possibly, counterforces are at work. One theoretical argument lies in enhancement

theory (Bovenberg, 2008; Greenhaus & Powell, 2006). Caregivers potentially developed skills during their caregiving episodes that might be transferred to the employment domain and that positively affected their employment career, resulting in more equal or even higher wages compared to non-caregivers. One could think of skills like time management, setting priorities, empathy, reflective power, or self-confidence. This argument might be particularly valid for a longer duration because caregivers had more time to learn important skills. Following this line of reasoning, also young caregivers may particularly benefit from caregiving because they have the most time to use these skills in their employment career. This means that caregivers might experience a short-term negative effect on wages (as shown in e.g., Carmichael & Charles, 2003; Carmichael & Ercolani, 2016; Earle & Heymann, 2012; Heitmueller & Inglis, 2007; Schmitz & Westphal, 2017; Van Houtven et al., 2013), but that some caregivers might be able to compensate for these disadvantages or even turn their caregiving experiences to an advantage, resulting in no, weaker, or even positive long-term effects. The finding that long caregiving duration lowered the wage penalty may also result from selection processes. Caregivers who care or have to care for a longer time and still work might be the caregivers that have a high hourly wage, which gives them an incentive to remain in employment. To detect the role of such selection process, full income histories would have been necessary. Furthermore, caregivers who care for a longer time and are apparently able to stay employed might be involved in caregiving situations that are relatively easy to combine with paid work. We did control for variables related to the caregiving situation such as caregiving intensity, yet we cannot rule out its total impact without knowing the intensity over the complete duration (only intensity at the beginning and end was observed). A last explanation is that caregivers who (have to) care for a longer time do have higher costs related to care (e.g., losing income of partner in case of spousal care) that have to be compensated for. Those caregivers are then more dependent on their income and will be less willing to adapt their paid work because of caregiving and have an incentive to try to even increase their wages.

Identifying the results as presented here would not have been possible with common research designs that use cross-sectional data or longitudinal data only covering point estimates instead of complete caregiving histories. However, there are drawbacks of this study that are important to note. First, matching unpaid caregivers to similar non-caregivers made it possible to control for some part of the selection into caregiving (namely selection driven by the matching variables), yet it does not solve selection issues completely. We did not match on employment-related variables. Some variables, which were not (fully) available, would have improved the matching, such as age at the start of first job or occupation at the start of the career or at least before the caregiving started. To some extent, educational level functions as a proxy of age at start of first job and first occupation. However, most employment-related variables, like part-time work or current occupation, are related to the mechanism explaining the wage penalty, thus mediating the relationship between the life course factors and the wage penalty. Matching on these factors would have masked the relationships we were interested in. Second, the data were collected retrospectively, which means that we have

to rely on the memory of our respondents about their caregiving episodes. The memory of short or 'easy' care episodes might not be complete and some respondents might have experienced more care episodes than reported (Fast et al., 2020; Kjellsson et al., 2014). It is unclear how this potential bias may have affected our results. It could mean that for caregivers there might be more caregiving episodes than we observe, but at the same time, the non-caregivers might have had caregiving episodes that remained unobserved. The wage penalty might have been overestimated because the supposed underreported episodes are likely the ones that were less influential to caregivers' employment careers, but it is less clear how the life course factors would have been impacted. Still, we believe that retrospective data provide valuable additions to our knowledge compared to cross-sectional or panel data, as they cover respondents' whole life span. Third, our assessment provided information on the long-term wage consequences of unpaid caregiving, but the process leading to those consequences remained a black box. A valuable addition to this study would be to focus on the mechanisms driving the wage difference, including different strategies to adapt paid work, like reducing working hours, stopping working for some time, and changing jobs. Fourth, by focusing on wages we excluded unpaid caregivers whose employment career was the most impacted by care: unpaid caregivers who never worked or who became non-employed and did not return to the labor market. This means that we only considered a specific group of caregivers who were able to stay or return to employment. Next, we had to deal with high numbers of missing values on wages. For the imputation, important predictors of wages were used. However, using data with fewer missing values and more objective data such as register data would overcome this issue (see Chapter 4 using register data). Last, including young unpaid caregivers means that part of our sample might not have experienced an effect of caregiving on their wages yet, but still could in the future. Together with the exclusion of the non-employed, this implies that our design might have led to an underestimation of the negative effect of the life course factors on employment.

We can conclude that using the life course perspective improved our understanding of the long-term employment consequences of unpaid caregiving. People take care of someone in their personal network at different ages, for longer and shorter periods, and most unpaid caregivers even care for multiple people. The life course perspective we applied in this study acknowledges these complexities and therefore provides context that was previously lacking. Variation in unpaid caregiving histories across the life span also means that the relationship to the domain of paid work is not straightforward and that some unpaid caregivers might be better able to compensate for losses in the paid work domain in the long run than others. Two patterns emerged. First, taking care for a longer time hurts the employment career less than we expected and caregivers even can make up for their loss in wages the longer they care. Second, taking care of multiple episodes leads to a bigger wage penalty. Knowing that especially caregivers who cared for multiple times suffer a bigger wage penalty may shift the focus of attention of policymakers to caregivers who again and again care throughout their life.



Chapter 6

Unpaid Caregiving and Job Satisfaction



A slightly different version of this chapter is currently under review at an international journal. Maria Evandrou and Jane Falkingham are co-authors of this chapter. The study on which this chapter is based was presented at the webinar of the Centre of Population Change (CPC) on November 3rd, 2022 and the 14th interdisciplinary Ph.D. workshop Perspectives on (Un-)Employment, Institute for Employment Research (IAB), Nuremberg, on January 19th, 2023.

Abstract

Taking up unpaid caregiving, that is providing care for sick or disabled people in one's social network, can affect paid employment. Previous research has mostly found negative effects, focusing on 'objective' outcomes such as labor supply or wages. We argue that to have a fuller picture of the employment consequences of unpaid caregiving – including potential positive effects as suggested by enrichment theory – it is important to examine 'subjective' outcomes such as job satisfaction. Applying fixed-effects panel models using the UK Household Panel 'Understanding Society' (2009-2020; N=171,450 observations of 32,156 respondents), we focus on changes in job satisfaction and their relationship with the changes into (more) caregiving, differentiated by intensity and duration. Providing non-intensive care was related to lower job satisfaction compared to both not having provided care or having provided intensive care. Sequential caregiving reduced job satisfaction compared to not having provided care or newly started care.

Introduction

With European populations aging, more people of working age are providing unpaid care to individuals who are sick, frail, and/or older people in their network, also known as unpaid care (Broese van Groenou & de Boer, 2016). Taking up this type of unpaid caregiving means taking up an additional role – the role of caregiver – which can have potential spillover effects into other roles, including those related to employment. The effects of unpaid caregiving for paid work are mostly considered to be negative, in line with conflict theories, reflecting the fact that caregivers are likely to reduce work or stop working altogether, and when in work, earn less than non-caregivers (Carmichael & Ercolani, 2016; Gomez-Leon et al., 2019; Hohmeyer & Kopf, 2020; Moussa, 2019; Raiber, Verbakel, & Visser, 2022; Raiber, Visser, et al., 2022; Schmitz & Westphal, 2017). However, there is also the possibility, as posited by enrichment theory, that unpaid caring could have positive effects on employment (Morimoto & Takebayashi, 2020, see also Chapter 4 and 5). Experiences in the role of caring could potentially produce positive experiences in the work role, for instance by the additional positive energy created by caring or by work itself offering a distraction by being a complementary role to caregiving in instances where caregiving is experienced as particularly burdensome (Gonzales et al., 2015; Greenhaus & Powell, 2006; Sieber, 1974; Tang, Siu, & Cheung, 2014).

One reason why scholars to date have found little empirical support for such a positive effect of caregiving on employment may reflect the fact that most, if not all, previous research has focused on objective measures of employment outcomes such as reduced labor supply or lower income, with these outcomes being labeled as ‘negative’, rather than concentrating on more subjective well-being-related measures. It is possible, however, that unpaid caregivers who earn less and/or reduced their work could still feel that their work has been enriched by their caregiving role. Given this, we argue that looking at another dimension of employment such as job satisfaction has more potential to shed light on whether there is an additional positive spillover of work to care. Since individuals spend a significant amount of time at work, work is important to many people’s identity, and overall job satisfaction is related to the performance of the employee and by that the organizations; it is important, therefore to consider the subjective well-being associated with work whenever looking at employment consequences (Gözükara & Çolakoğlu, 2016; Judge, Zhang, & Glerum, 2008; Visser, Lössbroek, & van der Lippe, 2020). Thus, focusing on overall job satisfaction in addition to the more classical employment consequences of unpaid caregiving, such as reducing labor supply or wages is an important factor to consider in its own right, but also provides us with a broader understanding of how unpaid caregiving is affecting employment. We concentrate on affective job satisfaction which is the subjective reflection of how content an employee is with their job (Kalleberg, 1977), thereby providing the first study to examine the direct relationship between paid work and unpaid caregiving focusing on job satisfaction as a subjective measure of employment consequences. This article addresses the following research question *to what extent is unpaid caregiving related to changes in overall job satisfaction in the UK?* Caregiving is assessed in terms of hours spent

on caregiving (intensity) and also in terms of duration, that is if the caregiver has (newly) started care provision or if they are sequentially caregiving. Sequential caregiving here means both observing a second-time point of the same caregiving episode or another caregiving episode being observed (with potential non-caregiving moments in between). In doing so, we build on both conflict theory and enrichment theory and examine how being more involved in the caregiving role by spending more hours on caregiving or sequentially caregiving, amplifies how caregiving relates to job satisfaction.

This study uses the UK Household Longitudinal Study ‘Understanding Society’ waves 1 to 10 covering relevant information from 2009 to 2020 (N=171,450 observations of 32,156 respondents). Fixed-effects panel models are used to investigate whether changes in job satisfaction were associated with the transition into or more caregiving, differentiated by intensity and duration. Fixed effect panel regressions have the advantage that time-stable characteristics are automatically controlled for. Yet, we do not claim to detect causal effects, with caregivers being a selective group regarding both employment and personality traits such as normative beliefs towards employment and caregiving (Broese van Groenou & de Boer, 2016); yet, fixed effects are the ideal methodological approach because of our focus on the *changes* into (and into more) caregiving. In a more explorative part, we look at how the results are driven by sex and living situation with both factors being potentially related to caregiving outcomes (Raiber, Verbakel, & de Boer, 2022; Swinkels, Tilburg, Verbakel, & Broese van Groenou, 2017). This article adds to the existing literature on understanding the employment consequences of unpaid caregiving by examining a subjective employment outcome, namely overall job satisfaction, using high-quality longitudinal survey data from the UK.

The Work-Care Conflict

With respect to theorizing pathways regarding any potential spillover between unpaid caregiving and paid work, one of the most prominent theories is the work-care conflict theory which is centered around the idea that caregiving is an additional role that potentially creates conflicts with other roles (Greenhaus & Beutell, 1985). These other roles for example include the role of being a partner or a parent along with roles outside the family such as those associated with paid work. This research investigates the potential spillover between unpaid caregiving and employment, thus focusing on the work role. Holding and combining multiple roles can cause strain in one or more roles, leading to feelings of stress (Gonzales et al., 2015). Caregivers may blame the employment side for causing the stress experienced in caregiving, as argued in appraisal theories (Shockley & Singla, 2011). Combining the role of caregiver and worker may also mean that there are fewer time and energy resources available. Due to the stress of combining two very different roles, there might not be sufficient energy or other mental resources, but also the resource time, available to fulfil both roles in a satisfying manner (Page, Robles, Rospenda, & Mazzola, 2018). Similarly, having to combine work and care roles means that the resource time has to be split between the roles, leaving less time for each role, posing further challenges in fulfilling both roles to the same extent as previously with fewer roles (Page et al., 2018). Not being able to fulfill the work role

alongside stress related to combining work and caregiving can lead to lower overall job satisfaction. Moreover, caregiving may increase the feeling that paid work is a necessity as is being relied upon to have sufficient financial resources, devaluing its meaning to simply being a financial resource (Page et al., 2018).

All of the above mechanisms are arguably stronger the more the person is involved in the caregiving role (Gözükara & Çolakoğlu, 2016). It is contended that higher intensity care, with more time spent on caregiving, and the provision of care at multiple time points (sequential caregiving implying longer duration) are both more likely to result in work-care conflict (Raiber et al., 2024). From the conflict theory perspective, we hypothesize *that job satisfaction will decrease with higher levels of caregiving, both when caregiving but also when spending more time on caregiving (intense caregiving) and amongst those sequentially caring versus (newly) starting caregiving (H1).*

Enrichment Theory

In contrast to the work-care conflict approach, enrichment theory postulates that caregiving can have a positive influence on the work role as caregiving can complement other roles (Greenhaus & Powell, 2006). There is evidence from the childcare literature that the arguments of enrichment theory hold, with the provision of care to children or grandchildren being found to positively influence job satisfaction (McNall, Nicklin, & Masuda, 2010). Here we posit that the reasoning from the childcare literature may be extended to other forms of unpaid caregiving e.g. care provided to frail older people. The most applicable argument from enrichment theory is that the new role of caregiving leads to a wider skill set (e.g., time management skills) and personal growth that can then support the achievement of goals in other roles, such as the work role (Greenhaus & Powell, 2006; McNall et al., 2010; Tang et al., 2014). This might be especially true for the work role as the family is often very distinct but also complementary to the work role. Caregivers can gain the feeling that they are achieving their work roles more effectively, for instance, due to gained time management skills. As a consequence, this could make their jobs more amiable and increase job satisfaction (Tang et al., 2014). Further, it is recognized that some caregiving situations can be burdensome (Verbakel, 2018) and in these situations, employment can be a strategy for caregivers to focus on something different rather than care, with paid work providing a respite from unpaid care provision (Sieber, 1974). In these situations, caregivers might also value their work more, leading to increased job satisfaction.

The argument for work providing a complementary role may be argued to be more applicable to those instances where caregiving is provided at a higher intensity, meaning more hours spent on caregiving and for longer. Scholars have shown that the caregiving burden increases with higher intensity (Swinkels et al., 2017; Verbakel, 2018), increasing the need for a coping mechanism. Similarly, learning new skills may increase with more time spent in the role of the caregiver, reflecting a higher intensity or longer duration (Raiber, Visser, et al., 2022). For example, time management skills become more proficient, the more time caregiving takes away from other domains of one's life. Higher intensity and longer duration caregiving mean also more time to adapt to the situation

of the caregiver. From the perspective of enrichment theory we, therefore, propose the (alternative) hypothesis *that job satisfaction will increase with higher levels of caregiving, including starting caregiving but also spending more time on caregiving (intense caregiving) and amongst those sequentially caring versus (newly) starting caregiving (H2).*

Methods

Data

This study uses the UK Household Longitudinal Study (UKHLS) 'Understanding Society' waves 1 to 10 covering relevant information from 2009 to 2020. 'Understanding Society' is a household panel that is designed to be representative of the UK population covering a wide range of topics (see Benzeval, Bollinger, Burton, Crossley, & Lynn, 2020). The analysis explicitly does not include the waves which were fielded during the COVID-19 pandemic as during this time policy interventions such as lockdowns and the instruction for certain groups, including those aged over 70, to self-isolate may have impacted upon caregiving whilst the introduction of furlough and home working influenced employment patterns. The interview mode was face-to-face, with online questionnaires, or telephone interviews. The analytical sample included all respondents aged 16 to 65 (working age) and who were employed in at least two waves, allowing us to observe changes in job satisfaction and caregiving (unbalanced panel). The self-employed were excluded since they are a specific and selected group and their job satisfaction is dependent on different characteristics. After excluding the missing (0.93% mainly on the variable working hours), our sample consists of 171,450 observations of 32,156 respondents.

Analytical Strategy

We base our conclusions on OLS fixed-effect panel models. In these models, group differences are eliminated (between variation) and only changes within individuals are considered by transforming the data (subtracting personal means, thus, independent of the number of observations per respondent, called 'demeaning') (Brüderl & Ludwig, 2015). This means that the results and their interpretation are related to *changes* in the outcome and predictors (while the measures of the variables do not directly indicate changes). Within effects, thus, indicate how job satisfaction is changed by caregiving compared to if the same individual would not have provided care, rather than comparing the group of caregivers to non-caregivers. This modeling strategy also has the advantage that time-stable characteristics are automatically controlled for (e.g., ethnic background of the respondent). This is especially useful in our case, as caregivers are known to be a selective group in terms of norms and beliefs as well as involvement in the labor market (Broese van Groenou & de Boer, 2016). We recognize that some of our control variables could be both control variables and mediators, particularly working hours and job changes as these are the potential strategies for unpaid caregivers to adapt to work-care conflict (Raiber et al., 2024). To estimate the changes in job satisfaction related to unpaid caregiving appropriately, we include these variables in an additional step in the modeling design. Last, to get a better grasp on potential group differences by binary sex

and living situation, we split our analysis for both binary sex and caregiving within and/or outside the household (including always non-caregiving as they do not have a caregiving location). This more explorative addition was included to see whether sex and/or living situations are driving our results (for descriptive statistics by these groups see Table C1). In case a change in sex was observed (N=26), we used the sex after the change.

Measures

Outcome variable. Job satisfaction was measured as the overall job satisfaction using the question “Please look at this card and tell me, all things considered, which number best describes how satisfied or dissatisfied you are with your present job overall?” with the answer categories ranging on a 7-point Likert scale from ‘Completely dissatisfied’ (1) to ‘Completely satisfied’ (7).

Main predictors. Two questions in the questionnaire were the base for our measurements on caregiving with the first one considering caregiving within the household (‘Is there anyone living with you who is sick, disabled or elderly whom you look after or give special help to (for example, a sick, disabled or elderly relative/husband/wife/friend, etc.)?’) and the same question for outside the household. This means that we base our variables on a general question about any caregiving towards a person with health issues at the moment of observation³⁰ and then differentiate between intensive and sequential caregiving. The caregiving variables were coded in such a way that only changes towards more caregiving were recorded as our focus is on the changes towards caregiving and by that starting or extending the new role of the caregiver. This means that we compare changes from one state (e.g., not provided care) to another state (e.g., provided non-intensive care) as only changes are picked up in the fixed effect panel models (see Figure 1 for two examples). Respondents were in the state ‘not provided care’ if they were not providing care at the moment of observation or in any previous wave across our observation window. To differentiate between intensive and non-intensive caregiving we used a measurement of the overall hours spent on caregiving, with non-intensive caregiving being less than 10 hours of caregiving per week and intensive caregiving *at least* 10 or more hours of caregiving per week. The predefined category ‘Varies under 20 hours’ was included in the low-intensity category to have the high-intensity category for caregivers who had *at least* high intensity, so clearly high intensity (see Robustness Check). Related to transitions on this variable, respondents were assigned the state ‘provided non-intensive care’ from the moment we first observed non-intensive caregiving until potentially a change towards intensive caregiving. The state ‘provided intensive care’ was similarly assigned from the moment the first time intensive caregiving was observed. Regarding duration, we assigned the state ‘started caregiving’ the first time caregiving was experienced (in our observation window); this state then persisted until a second caregiving moment was experienced (when also having employment) which resulted in the coding ‘provided sequential care’. Thus, sequential

³⁰ This may include children (<7%) but is primarily care towards a partner in the household and parent care outside the household.

could mean repeated care meaning that there are potential non-caregiving moments in-between (example panel A of Figure 6.1) or that the caregiving was continuous and because of that sequential (example panel B of Figure 6.1). Sequential can also mean a subsequent observation of care within the same episode or beginning to provide for another person. This coding is as comparable as possible to the codings of Chapters 4 and 5 as it similarly has the idea of a cumulative duration measure with a second year of caregiving observed, thus here sequential, meaning more experience with caregiving. To check for the influence of our way of coding we included two robustness checks, discussed in the results section.

Control variables. We controlled for several time-varying characteristics. Time was modeled by including age (calculated from the birth year and interview year) and age squared. The partner variable was defined as having a spouse or partner living in the same household (1) compared to not having a spouse or partner living in the household (0). While having a partner can be seen as a resource in helping with caregiving and improving the financial situation, one has to be careful with interpreting the results as having a partner may also increase the likelihood of having someone to provide care to, either to the partner themselves or to a parent-in-law. The age of the youngest child was included to control for the potential 'triple burden' arising when caring for both a person with health issues and a (young) child in addition to working. Our measure was based on the two pre-defined variables 'Responsible adult for a child under the age of 16' and 'Responsible adult for a child aged 4 to 15' responsible in the household from which we derived the following categories: (1) Youngest child under 4, (2) Youngest child between 4-15, and (3) No children under 16 responsible for.

Furthermore, we controlled for a number of job characteristics that may potentially be associated with providing caregiving or changes in job satisfaction. First, we controlled for having a permanent job (1) versus not having a permanent job (0) and the number of hours normally worked per week (working hours). Additionally, we controlled for the sum of job changes prior to the measurement of job satisfaction so that each new job change is then picked up as a new change in the fixed-effect models. Job changes included not having continuously worked, change in employer, and change in the workplace. Note that we did not control for income as fixed-effects models would only pick up changes in income and would not reflect the general level of financial resources – the potential confounder – that are rather stable, and thus automatically controlled for in our models. Table 6.1 below provides descriptive statistics for the key variables.

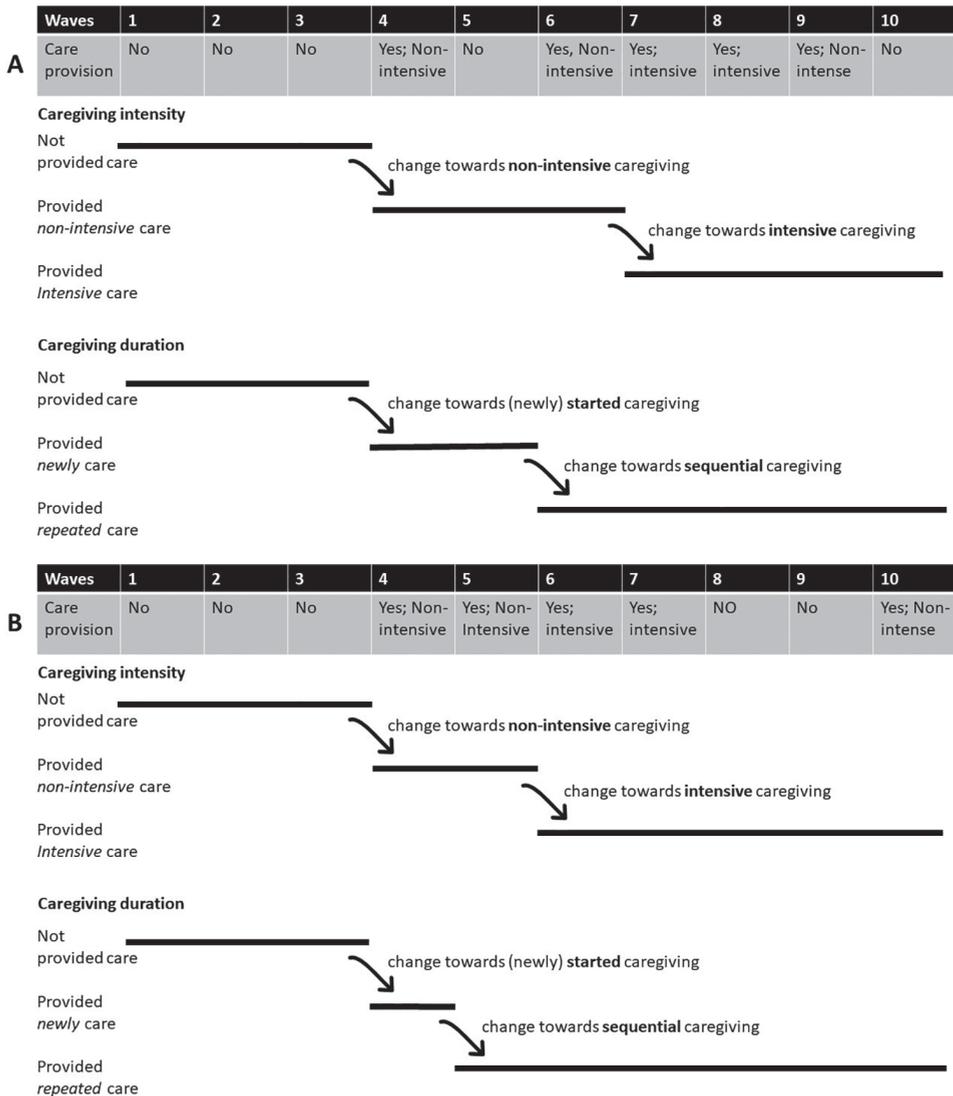


Figure 6.1 | Illustration for the coding of the caregiving variables for two examples of respondents who have provided care in some waves. Example A shows a respondent who first cares non-intensive in one wave followed by a wave *without* caregiving. The second time caregiving is observed (here wave 6) the respondent is coded as a sequential caregiver. In contrast, example B shows a respondent who keeps caregiving in two subsequent waves, and the second wave is then counted as sequential.

Table 6.1 | Descriptive statistics over all waves

	Range	Percentage	Mean	S.D.
Job satisfaction	0/7		5.28	1.40
Care				
not provided care	0/1	72.81		
non-intensive care	0/1	18.02		
intensive care	0/1	9.17		
started caregiving	0/1	12.76		
sequential care	0/1	14.43		
Controls				
Age	16-65		42.52	11.67
No partner inside the HH	0/1	29.36		
Partner inside the HH	0/1	70.64		
Youngest child under 4	0/1	3.00		
Youngest child between 4-15	0/1	18.72		
No children under 16	0/1	78.28		
No permanent job	0/1	5.38		
Permanent job	0/1	94.62		
Sum job changes	0/8		0.38	0.69
Working hours	0-60		33.37	10.07
Sex				
Women	0/1	55.01		
Men	0/1	44.99		
N Observations	171,450			
N Respondents	32,156			

Source: Understanding Society Wave 1 to 10

Results

Descriptive Results

We observed 32,156 respondents over at least two time points, with an average of 5.3 time points per respondent (standard deviation: 2.8). The maximum was 10 time points for respondents who were observed in all waves (1.65%). Overall, we had 171,450 observations. In 72.81% of these observations, the respondents did not provide care (yet), while we observe that in 18.02% of the observations the respondents provided non-intensive caregiving and in 9.17% intensive caregiving (see Table 6.1). Regarding the duration of caregiving, we see that 12.76% of the observations were categorized as started caregiving and 14.43% as sequential caregiving. Translating both measures to the respondent level, we find that 67.80% of respondents never cared throughout the complete observation window and 32.21% provided care at least once. Differentiated by

intensity, 20.48% of respondents provided care at least once non-intensive (but never intensive) and 11.73% had at least one intensive caregiving episode. By duration, 12.88% provided care only once (started care) while 19.32% of the respondents provided care more than one time, i.e. were sequential caregiving. These numbers on paid caregiving are comparable to other studies in the UK (see Carers UK, 2019).

Overall job satisfaction was relatively high with an average of 5.3 (somewhat satisfied) on the 7-point scale (standard deviation: 1.4) and a median of 6 (mostly satisfied). There was sufficient within variation in job satisfaction (basis for fixed-effects), meaning that job satisfaction did change within respondents over the observation window. In 42% of subsequent observations, no changes were observed while in 31% of subsequent observations, job satisfaction was lower and in 27% higher (see Figure 6.2). Regarding caregiving, fewer changes were observed. Only in 3% of subsequent waves did the respondents start non-intensive care, in 2% intensive care, in 4% started caregiving, and in 5% sequential caregiving (for changes differentiated by wave see appendix Table C2).

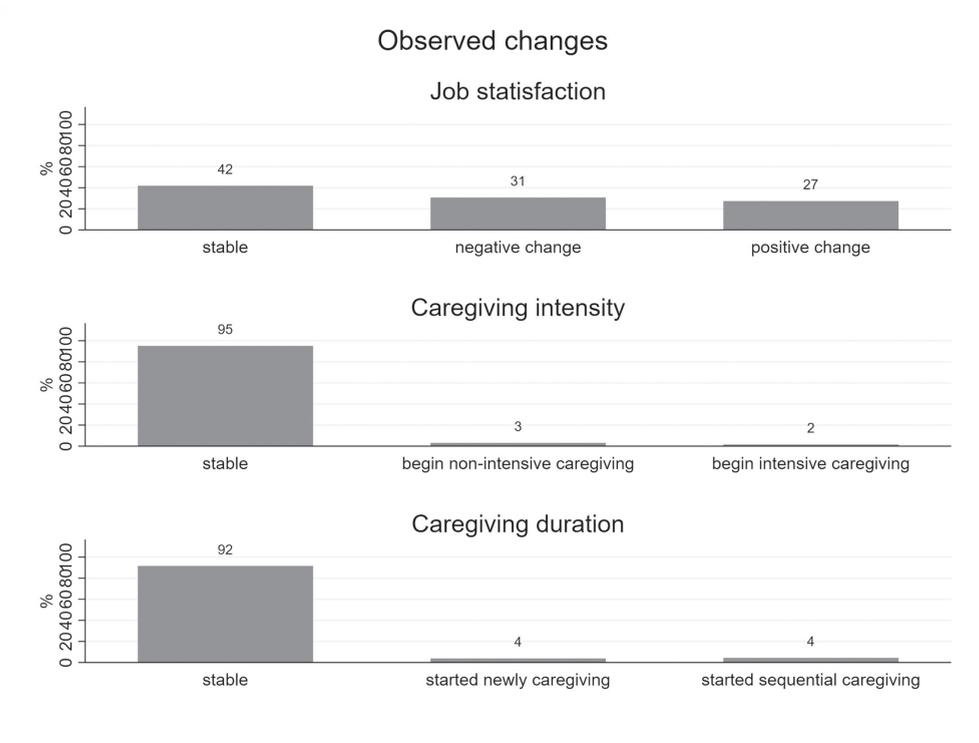


Figure 6.2 | Percentage of changes in two subsequent waves averaged over all waves. For changes per wave see Table C2 in the appendix. N=125,041.

Multiple Regression Results

In our fixed effect models, we included job changes and working hours step-wise as they theoretically could have been both mediator or control variables. When including them in the models compared to not including them, we did not find substantial differences (see Table 6.2: Model 1.1 compared to 1.2. for caregiving intensity and Table 3: Model 2.1 compared to 2.2 for caregiving duration). This is why we did not do any additional mediation analysis but stayed with the focus on the relationship between caregiving and job satisfaction. However, the model fit increased (based on R-square) when including job changes and working hours as control variables. Thus, in the following section, we will explain the models including job changes and working hours as controls (thus Model 1.2 and 2.2.).

Having started non-intensive caregiving was related to lower job satisfaction compared to both not having provided care or having provided intensive care (here we changed the reference category; Model 1.2, Table 6.2). Not having provided care and provided intensive caregiving did not statistically differ from each other (after changing the reference category again). In more substantive terms, having provided intensive caregiving lowered job satisfaction by 0.05 points compared to both other categories on the 7-point job satisfaction scale. When calculating Marginal effects at the mean, the predicted job satisfaction of both not having provided caregiving and having provided intensive caregiving was at 5.29 on the job satisfaction scale and having provided non-intensive caregiving was at 5.24 on the same scale (see Figure 6.3).

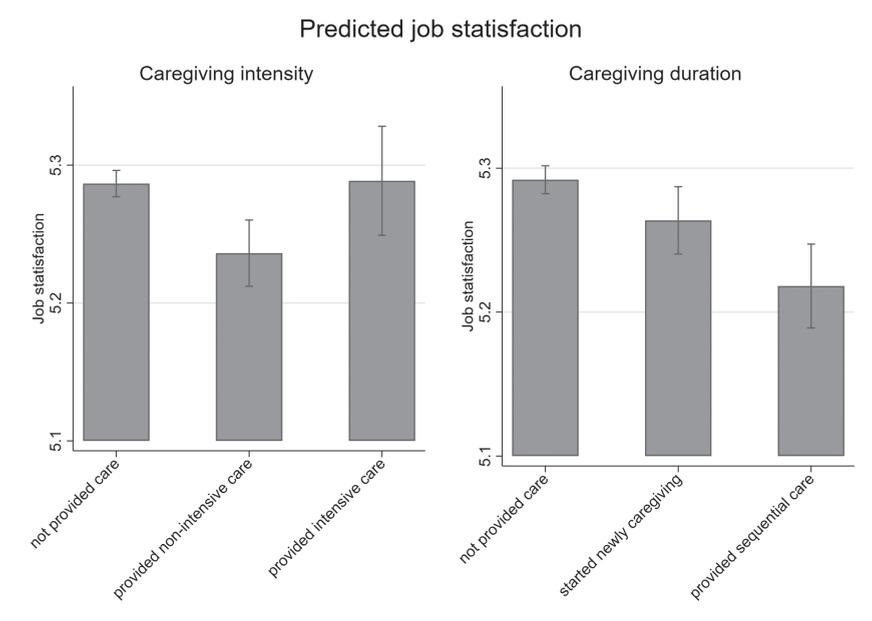


Figure 6.3 | Predictions based on marginal effects at the mean for caregiving intensity on the right based on Model 2.1 and caregiving duration on the left based on Model 2.2. N=171,450 observations of 32,156 respondents.

Table 6.2 | Fixed-effects panel regressions for caregiving intensity

	Model 1.1	Model 1.2	Model 1.3	Model 1.4	Model 1.5	Model 1.6	Model 1.7
Sub-group:	none	none	men	women	caregiving inside household only (including never provided care)	caregiving outside household only (including never provided care)	mix of inside and outside caregiving (including never provided care)
Not provided care	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Provided non-intensive care	-0.05*** (0.02)	-0.05*** (0.02)	-0.01 (0.02)	-0.08*** (0.02)	-0.01 (0.04)	-0.05** (0.02)	-0.12* (0.05)
Provided intensive care	-0.00 (0.02)	0.00 (0.02)	0.01 (0.04)	-0.00 (0.03)	0.04 (0.04)	0.01 (0.03)	-0.06 (0.05)
Age	-0.00 (0.01)	-0.08*** (0.01)	-0.07*** (0.01)	-0.09*** (0.01)	-0.09*** (0.01)	-0.08*** (0.01)	-0.09*** (0.01)
Age squared	0.00 (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Partner living in household (ref. no partner)	-0.02 (0.02)	-0.03* (0.02)	-0.05 (0.03)	-0.03 (0.02)	-0.03 (0.02)	-0.04* (0.02)	-0.04* (0.02)
No children below 16	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Youngest child below 4	-0.03 (0.02)	-0.02 (0.02)	0.04 (0.12)	-0.02 (0.03)	-0.02 (0.03)	-0.03 (0.02)	-0.02 (0.03)
Youngest child between 4 and 15	0.01 (0.02)	0.03 (0.02)	-0.01 (0.06)	0.03 (0.02)	0.03 (0.02)	0.01 (0.02)	0.03 (0.02)
Permanent job (ref. not perm.)	0.02 (0.02)	0.02 (0.02)	0.07*** (0.03)	-0.01 (0.02)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Working hours	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)

Sum job changes	0.36*** (0.01)	0.34*** (0.01)	0.38*** (0.01)	0.37*** (0.01)	0.36*** (0.01)	0.37*** (0.01)
Constant	5.29*** (0.11)	7.48*** (0.12)	7.12*** (0.18)	7.78*** (0.17)	7.50*** (0.13)	7.58*** (0.14)
Observations	171,450	171,450	77,139	94,311	152,907	116,555
R-squared	0.00	0.02	0.01	0.02	0.02	0.02
Number of respondents	32,156	32,156	14,600	17,556	28,904	23,023

Standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05.

Table 6.3 | Fixed-effects panel regressions for caregiving duration

	Model 2.1	Model 2.2	Model 2.3	Model 2.4	Model 2.5	Model 2.6	Model 2.7
Sub-group:	none	none	men	women	caregiving inside household only (including never provided care)	caregiving outside household only (including never provided care)	mix of inside and outside caregiving (including never provided care)
Not provided care	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Provided non-intensive care	-0.03 (0.02)	-0.03 (0.01)	-0.01 (0.02)	-0.04* (0.02)	0.02 (0.03)	-0.02 (0.02)	-0.09 (0.05)
Provided intensive care	-0.08*** (0.02)	-0.07*** (0.02)	-0.00 (0.03)	-0.12*** (0.02)	-0.01 (0.04)	-0.08*** (0.02)	-0.09 (0.05)
Age	-0.00 (0.01)	-0.08*** (0.01)	-0.07*** (0.01)	-0.09*** (0.01)	-0.09*** (0.01)	-0.08*** (0.01)	-0.09*** (0.01)
Age squared	0.00 (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)

Partner living in household (ref. no partner)	-0.02 (0.02)	-0.03* (0.02)	-0.03 (0.02)	-0.03 (0.02)	-0.04* (0.02)	-0.04* (0.02)
No children below 16	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Youngest child below 4	-0.03 (0.02)	-0.02 (0.02)	-0.02 (0.03)	-0.02 (0.03)	-0.03 (0.02)	-0.02 (0.03)
Youngest child between 4 and 15	0.01 (0.02)	0.03 (0.02)	-0.01 (0.06)	0.03 (0.02)	0.01 (0.02)	0.03 (0.02)
Permanent job (ref. not perm.)	0.02 (0.02)	0.03 (0.02)	0.07** (0.03)	-0.00 (0.02)	0.02 (0.02)	0.02 (0.02)
Working hours	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Sum job changes	0.36*** (0.01)	0.34*** (0.01)	0.38*** (0.01)	0.37*** (0.01)	0.36*** (0.01)	0.37*** (0.01)
Constant	5.28*** (0.11)	7.47*** (0.12)	7.12*** (0.18)	7.62*** (0.14)	7.50*** (0.13)	7.58*** (0.14)
Observations	171,450	171,450	77,139	119,186	152,907	116,555
R-squared	0.00	0.02	0.01	0.02	0.02	0.02
Number of respondents	32,156	32,156	14,600	23,805	28,904	23,023

Standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05.

When differentiating by duration (Model 2.2, Table 3 and Figure 3), we find that providing sequential caregiving reduced job satisfaction by 0.08 points compared to not having provided caregiving and by 0.05 points compared to having started care. For the latter, we changed the reference category. With less certainty ($p=0.06$), started caregiving lowered job satisfaction by 0.03 points compared to not having provided care. Predicted job satisfaction based on marginal effects at the mean shows a ranking of the highest job satisfaction when not having cared (5.29), then started care (5.26), and the lowest job satisfaction when having sequentially provided care at 5.21 on the 7-point job satisfaction scale.

Splitting the analysis by sex (see Table 2, Model 1.3 and 1.4 and Table 3, Model 2.3 and 2.4) shows that the directions of the relationships were mostly the same for men and women. Regarding significance levels, there is an indication that especially women were driving the overall results as they reproduced the significant results of the main analysis while men did not. Also, we see that for women having started caregiving with higher certainty ($p=0.04$) lowered job satisfaction by 0.04 points compared to not having provided care. The models split by location of the caregiving (see Table 2, Model 1.5, 1.6, and 1.7 and Table 3, Model 2.5, 2.6, and 2.7) indicate that especially caregiving only outside the household was driving our results. The significance levels for the model on caregiving intensity were reproduced by both caregiving only outside the household or a mix of inside/outside caregiving and the models on caregiving duration were reproduced by caregiving only outside the household. These results could be explained by the lower chance of caregiving for men and inside the household as well as smaller sample sizes (see Table C1).

Robustness Checks

We ran four robustness checks. To see how this decision to only include changes towards more caregiving influenced our results, we included two robustness checks on this. First, we included a 'caregiving stopped' category for the last change towards not caring in our observation window. Including a category for stopped care did not change our results for both caregiving intensity and caregiving duration and the category for caregiving stopped was not statistically associated with job satisfaction (see Table C3, Model R1.1 and Table A4, Model R1.2). Next, we dropped all time points with non-caregiving after the caregiving began so that only moments with caregiving would be included in our estimates. Our main conclusion holds when dropping time points with non-caregiving after the caregiving started with one difference (see Table C3 Model R2.1 and Table C4 Model R2.2); in this test having provided intensive caregiving was not significantly different from having provided non-intensive caregiving ($p=0.12$). Thirdly, we checked whether changing the cut-off value of hours of care to define intensity influenced the results by including caregiving that varied below 20 hours in the low-intensity caregiving category. Excluding these observations that were less clear if they were low or high intensity did not change our results (see Appendix C, Table C3, Model R3). Fourthly, we split the analysis for early working age (age 16-39) and late working age (40-65) as our decision on the age range potentially could have influenced our results. Also here, the

robustness check shows that our decision on the age range did not influence our results both for caregiving intensity (Appendix C, Table C3, Model R4.1 and Appendix C, Table C4, Model 5.1) or caregiving duration (Appendix C, Table C3, Model R4.2 and Appendix C, Table C4, Model R5.2) even when lowering the sample size dramatically by splitting the analysis. All in all, our results seem to be very robust.

Conclusion

In this chapter, we have added to the existing literature on the employment consequences of unpaid caregivers by looking at a so-far overlooked outcome – job satisfaction. By looking at this subjective outcome, we were able to detect spillovers from the caregiving role toward the well-being dimension of the employment role. We were initially motivated to undertake this study as we postulated that by focusing on a subjective outcome, we would be more likely to find positive effects of unpaid caregiving as proposed by enrichment theory. However, our results – similar to previous research using ‘objective’ outcomes – provide support for the theory of work-care conflict rather than enrichment (thus more support for Hypothesis 1). Having started non-intensive caring and sequential caregiving were both associated with lower job satisfaction. These results were reproduced for women and those providing caregiving outside the household. This is an indicator that women and caregivers with care recipients living outside their households might experience more work-care conflict. A potential sex difference could be due to women tending to value caregiving more compared to men and men valuing work more than women (Page et al., 2018; Shockley & Singla, 2011). More conflict related to caregiving outside the household may reflect higher levels of worry and stress related to the distance between the caregiver and care recipient.

Using panel data and focusing on changes in job satisfaction related to changes in caregiving, gives our article a strong design to answer our research question. However, this approach has its limitations. First, our sample is based on respondents who stayed in employment. From existing literature, we know that caregivers have a higher likelihood to stop working or retire earlier (Gomez-Leon et al., 2019; Henz, 2004; Hohmeyer & Kopf, 2020; Lee & Tang, 2013; Pavalko & Henderson, 2006; Raiber, Verbakel, & Visser, 2022). This means that our sample focuses on those who were able to stay in the labor market. Low job satisfaction may be one of the drivers for job exits, especially for caregivers. With the focus on a subjective outcome of employment consequences taking into account employed respondents only is inevitable as a person can exclusively have a job satisfaction if they are employed. We invite future research to disentangle the role of job satisfaction in unpaid caregivers’ decisions to drop out of employment. Next, we did not formally test the assumptions of enrichment or conflict theory as our focus is on the overall effects of caregiving on job satisfaction. We considered two major changes available in the data, namely changing jobs or changes in working hours. Yet, there could be other changes within stable jobs like giving caregivers fewer responsibilities potentially influencing job satisfaction. A valuable follow-up to this study would be to look more into the underlying mechanisms and potential buffers including the

role of supervisor and organizational support (Tang et al., 2014) as it could provide more insights into how enrichment could be fostered. Similarly, we focused on the relationship between taking up care provision and overall job satisfaction measured by the available and only variable in the data. Lower job satisfaction could mean that the job got worse, but also that the respondents valued their job less (Rapley, 2003). This study is not able to shed light on what exactly is driving the lower scores for non-intensive and sequential caregiving, and again it would be interesting to fully understand how enrichment or conflict are related to job satisfaction. Future research could use a more nuanced operationalization of job satisfaction with multiple measurements or focus on more characteristics of the caregiving situation such as additional support received, the caregiving relationship (including feeling obligated to care or not), or the health status of the care recipient.

One strength of the study is that it covered more than ten years, a longer time span than many other datasets. However, the coding of caregiving was still limited by the observation window. For instance, we do not know if the respondents had caregiving experiences prior to when we first observed them, and only recent caregiving episodes were included in our coding. This 'left-hand censoring' means that we may have misclassified some caregivers as non-caregivers, some sequential caregiving as having just started caregiving, and intensive caregiving as non-caregiving or non-intensive care. In a similar line, we only included caregiving episodes when also being employed, which has consequences for our measurements as there could have been caregiving during a period of not being employed. Arguably, at this time there was also no conflict or enrichment for employment. Yet, given these impressions, we may have underestimated the effects of caregiving, thus, the results should be taken as a lower boundary and the effect may be stronger in reality.

Similar to other research related to job satisfaction and the spillover between family and work (see McNall et al., 2010), the effects that we did find were small. This is not surprising as we focused on 'within effects' that are typically rather small. Still, we argue that this hints at the fact that the effects of unpaid caregiving on job satisfaction are more complex. Finding negative effects does not mean that enrichment does not play a role but that it plays a smaller role than conflict. Some of our null findings (effects canceling each other out) and the small effect sizes may support a two-sided story. Especially, non-intensive caregiving being related to lower job satisfaction while intensive caregiving is not different from not having provided care might reflect that high intensity includes conflict but also has more potential due to more time spent on caregiving to enrich job satisfaction as argued in the theory.

This means that we should not dismiss enrichment theory but rather find out more about what can drive positive outcomes when caregiving. Against the backdrop of an aging population across Europe, and globally, more people will need to provide care for family or friends but also more people are needed to stay (longer) in the labor market to counteract the rising costs related to an aging population (e.g., welfare state provision) (Plaisier, Broese van Groenou, & Keuzenkamp, 2015). Thus, policymakers need to mitigate any potential conflict between work and caring roles and create an

environment where caregivers can positively combine paid work and unpaid caregiving responsibilities. Potential policies are related to flexible work environments, support by the supervisors, trainings and counseling, care leave, and financial support for formal care (Colombo et al., 2011; Morimoto & Takebayashi, 2020).



Chapter 7

Discussion and Conclusion



A version of this chapter, together with parts of Chapter 1, are part of a conference paper for the HDCA 2023, where these chapters also received feedback.

Background

In aging societies, more people are at risk of being in need of care. Unpaid caregivers play a large role in taking over some of the rising care needs. In this dissertation, I looked at the long-term consequences of unpaid caregiving for the caregiver's employment. Outcomes such as adapting one's paid work (reducing working hours, stopping to work, changing jobs, or becoming self-employed), hourly wage effects, and changes in job satisfaction were looked at across five empirical chapters. Expectations were formulated based on conflict and enrichment theory, often including a gender and life course perspective. Employment consequences spanning more than ten years were analyzed using quantitative methods such as fixed-effect panel analyses, multilevel models, linear regression models with matching procedures, and growth curve modeling. In this concluding chapter, I will summarize the main results, discuss the impact of the results, relate it to wellbeing, highlight some takeaway messages, and provide an outlook, including two main avenues for future research and policy implications.

Summary of Results

Instead of repeating the results of each empirical study, I will summarize the results altogether. Overall, two types of results emerged. The first type is related to the effect of starting the new role of caregiver compared to not having started to care. The second type is about differences in the way and the extent to which transitioning towards caregiving affects employment outcomes. Those differential effects were related to intensity, life course factors, and monetary transfers. Both types of results are potentially influenced by gender, which I will discuss where applicable. This way of summarizing the results also shows that by using theoretical insights from conflict and enrichment as well as the two approaches, that is, the gender and life course perspective, a nuanced description of whose employment was influenced (most) when starting to provide unpaid care, is possible.

Becoming a caregiver

Having made a transition into caregiving has evident employment consequences. In Chapter 2, it became visible that caregivers adapt their work because of their unpaid caregiving duties in about one out of ten experienced caregiving situations. Only in a few caregiving situations caregivers chose to become self-employed (1.8% of caregiving situations) or change jobs (1.7% of caregiving situations). The most common strategy was to reduce labor supply by reducing working hours (7.3% of caregiving situations) or stopping to work (3.8% of caregiving situations). The relationship between starting to provide care and reducing working hours or becoming non-employed was reproduced in Chapter 3. Since we learned in the previous chapter that caregivers made such employment decisions only in a minority of cases, it is not surprising that the effects were relatively small, with a reduction in working hours of, on average, around 0.03 hours and a three percentage points higher likelihood of becoming non-employed.

Chapter 4 revealed that caregiving was associated with more wage growth for men and less wage growth for women, but only after caregiving ended, with a maximum hourly wage growth difference of half a cent. On average, across all observations, hourly wages differed between caregivers and those who never cared. Caregivers had lower hourly wages than non-caregivers, with an average gap of 1.78 euros for women and 11.06 euros for men (Chapter 5). The study of the subjective employment outcome (Chapter 6) revealed lower job satisfaction among those who changed towards caregiving. The changes in job satisfaction were at the most 0.12 on a 7-point scale.

Heterogeneous caregiving effects

The results described in the following are about the caregiving conditions that determine how and to what extent the transition into caregiving changed employment. The first important condition is the intensity of caregiving, a frequently assessed factor in the literature (Bauer & Sousa-Poza, 2015). Intensity was measured as the hours spent on unpaid caregiving per week, with 8 or more hours defined as intensive caregiving.³¹ High-intensive caregiving was related to more work-care conflict and, in turn, to adapting paid work, with the most likely options being reducing working hours and stopping to work (3% average increase in the likelihood, Chapter 2). Both women and men were more likely to become non-employed when caring intensively (Chapter 3). Regarding reducing working hours, Chapter 3 highlighted that women already reduced their working hours when caring non-intensively (so less than 8 hours per week), in contrast to men who only reduced their working hours when caring intensively. Chapter 4 revealed that men's wage growth increased when they were intensively caring, while women had a lower wage growth when caring intensively. The intensity of caregiving also predicted job satisfaction as non-intensive caregiving came with lower job satisfaction compared to, interestingly, both not having provided care and intensive care. The latter two were not statistically different from each other.

A second set of conditions relates to life course factors. The first and most looked at life course factor in this dissertation was the duration of caregiving (Chapters 4, 5, and 6). In Chapter 4, a longer duration was not related to wage growth. In contrast, Chapter 5 showed that longer caregiving duration was related to a smaller wage gap between caregivers and similar non-caregivers. As Chapter 4 has a better measure of and more detailed information on wages over time, this discrepancy can hint at potential selection effects. Those taking up long-term care are potentially also those who are able to care for someone long-term. They might have higher salaries to begin with, which might motivate them to stay in employment. In Chapter 6, it became evident that sequential caregiving was related to reduced job satisfaction compared to both those starting caregiving and those not having provided care, supporting the idea that duration can increase conflict, leading to lower job satisfaction. A second interesting life course factor is the age at which someone started caregiving for the first time, that is, the timing of

³¹ One exception is Chapter 6, where intensive caregiving was defined as at least 10 or more hours because respondents were asked the intensity in categories, which meant I had to choose a cut point aligning with the existing categories.

caregiving in the life course. Age at the start of caregiving mattered for some strategies to adapt work (Chapter 2), yet it did not influence the wage penalty for caregivers (Chapter 5). Caregivers who started their caregiving episode before the age of 24 were more likely to reduce their working hours or change jobs in this caregiving situation because of caregiving. Men and women made, to some extent, different decisions when it came to reducing labor supply, depending on the life stage in which they gave care for the first time. Men were more likely to quit working when having started their caregiving role in early middle age (45-54 years) and women were more likely to reduce working hours when having started their caregiving role in the early family formation stage (25-34 years). The last life course factor refers to the number of caregiving spells one has experienced in life. Chapter 4 demonstrated that the wage penalty for caregivers compared to similar non-caregivers increased with the number of caregiving spells.

A third type of condition I studied was more policy-related, namely the role of monetary transfers, meaning transfers from the care receiver to the caregiver. For men, receiving high monetary transfers was a stronger motivation to become non-employed than for women. In contrast, low monetary transfers were related to a reduction in working hours only among women.

Discussion of Results

A first overall assessment of the results presented in the five studies would likely lead to a relatively negative story, supporting conflict theory. This is a valid interpretation of the results as starting to care for a sick person in the personal network was related to reducing working hours, stopping paid work, changing jobs (including becoming self-employed), lower hourly wages, to some degree lower wage growths, and lower job satisfaction. Yet, two relevant considerations have to be highlighted.

First, the results showed that there is not one uniform way of caregiving and that different caregiving situations may have different implications. How caregiving influences employment depends on the caregiver (e.g., the sex of the caregiver), the circumstances of caregiving (e.g., intensity), the characteristics of caregiving in relation to the life course, and monetary transfers. There were even two signs of a positive spillover in line with enrichment theory, highlighting the importance of considering both conflict and enrichment mechanisms. First, those who cared for a longer time had a smaller wage penalty compared to similar non-caregivers. Second, men had higher hourly wage growth compared to women when having stopped caregiving or when caregiving intensively. Similarly, there were also some null findings, meaning that not all factors were related to employment consequences as expected. For instance, only when care started in the youngest life stage (before the age of 24) certain work adaptation strategies were chosen more. Also, low-intensive caregiving was not related to becoming non-employed or to wage growth. This means that the spillover between caregiving and employment cannot and should not be easily judged. The debate about employment consequences of caregiving should clearly define what consequences are discussed and what employment consequences are relevant.

Second, an assessment on the employment consequences of caregiving should not only be based on statistically significant results but also focus on the meaningfulness of a found relationship. All effect sizes in the five presented chapters were relatively small (comparable to previous research; see Bauer & Sousa-Poza, 2015). Most of these relationships are seemingly too weak to matter in a real-life situation for an individual person. Two considerations need to be taken into account to evaluate this statement. First, all the presented effect sizes are based on averages. Averages may mask that caregiving could have a sizable impact on the employment of some and no impact on the employment of others. My results suggest this is indeed the case. Taking a gender perspective and differentiating caregiving by intensity and life course factors helped to understand which groups are more prone to be in the group of people for which caregiving indeed had more impact (e.g., higher intensity and caring for multiple people led to more negative employment consequences). Second, the seemingly small effects were found on the level of individuals or even caregiving episodes. Aggregating them to a higher level, like the country level, reveals more substantial effects. A simplified calculation of how the individual-level effect of caregiving on working hour reduction can be aggregated to the national level would show that the 0.03 hours worked less per week per caring individual in Germany sums up to 1.56 hours worked less per year ($0.03 * 52$). When around one-third of the working population in Germany (~1/3 of 54 million people = 18 million) provides care, it would mean that in Germany there are 28,080,000 hours worked less per year ($18 \text{ million} * 1,56$). These numbers then do not seem to be very small and likely matter for German society and its economy. In addition, it must be noted that the share of people who need care in the future is to increase and hence, a labor supply shortage as a result of caregiving can be expected.

Wellbeing Considerations

As introduced in Chapter 1, I will extend the insights from the empirical chapters on the spillovers between caregiving and employment to gain a deeper understanding of the overall wellbeing or quality of life of caregivers. For that, I introduced the capability approach.

In terms of functionings and capabilities, all the results hint that the achieved functioning of being a caregiver reduces achieved functionings in the employment domain (the outcome variables). Since this effect can be expected to reflect a decrease in employment opportunities for the caregiver, I can also say that it leads to a capability loss in the employment domain. Thus, there is a clear negative spillover from decisions made in the family domain to the employment domain. From the capability perspective, one could say that there are no effects on employment wellbeing if the caregivers have the same opportunities in the employment domain compared to those not having started caregiving (Lewis & Giullari, 2005). Based on the empirical studies, this seems not to be the case. Therefore, in terms of employment wellbeing only, *starting to provide unpaid care has a negative effect on some people's employment wellbeing.*

How does this translate into an overall wellbeing assessment? Since we focus only on two domains (family, employment) and restrict our attention to particular aspects of those domains (provision of unpaid care, specific outcomes of employment), we cannot make definitive inferences about people's overall wellbeing or quality of life. Moreover, whereas we can view persons' overall wellbeing to be a function of their achieved functionings and capabilities, the exact nature of that function was not specified. Hence, even if one can take the domains and work to be sufficiently informative for making general statements about effects on wellbeing, we have not yet clarified *how* to make such statements other than that they are based on people's functionings and capabilities.

However, we are not completely in the dark: I can make assessments based on a few plausible assumptions. First and easiest, it is possible to infer that a loss of employment possibilities has a negative impact on one's overall wellbeing. It affects a person's achieved functionings in the employment domain and, given the further possibilities that employment and the associated income create, will have knock-on effects on other domains of life. Hence, it is not too controversial to posit that better employment opportunities have, all things considered, a positive effect on one's wellbeing both in objective terms (having access to other functionings) and in subjective ones (one's satisfaction or happiness).

With respect to the provision of unpaid care, things are less clear given the empirical chapters. Starting caregiving has the potential to increase wellbeing within the family domain, as caring for a person who is sick and dependent on care is something that can be of much value for the persons involved. It may deepen the relationship between the caregiver and care receiver (Quinn, Clare, & Woods, 2015) and potentially those among unpaid family caregivers. The provision of unpaid care can help people in need following their preference to stay living in their homes (Kasper et al., 2018). Yet, there may also be negative effects of caregiving on the family domain: providing care creates a relation of dependency, which may be unwanted in itself and which, additionally, may undermine the quality of family bonds (Quinn et al., 2015). In sum, wellbeing in the family domain may both benefit and suffer from providing unpaid care. How then should one assess the overall wellbeing effects of unpaid care? If the net effects of unpaid care do not weigh up against the negative employment effects, then the wellbeing effect of providing unpaid care can be expected to be negative. There would be a *loss of wellbeing*. Yet if they do weigh up, then, obviously, the conclusion may be the opposite.

Another consideration concerns the level of choice caregivers perceive. The Informal Care Model (Broese van Groenou & de Boer, 2016) assumes that individuals weigh the pros and cons in deciding whether or not to take up a caregiver role. Their assessment depends on their social context, including the family, social network, and wider community. Following this framework, one could thus argue that caregivers have, in essence, a *choice*, but that there can be circumstances that would limit their choice options severely. One could think of a situation in which there were no other ways of providing help or support to one's nearest. In such a situation, one can doubt whether the unpaid caregiver really had a choice. Similarly, if society's norms or one's own moral convictions strongly condemn the refusal of a caregiver role, not providing

help in such a situation is not a genuine option (Broese van Groenou & de Boer, 2016). This argument shows that the caregiver's capability is much smaller than if there were alternative possibilities. In this view, caregiving is only a real choice if existing healthcare arrangements would have provided the care otherwise and/or if the social context would tolerate any decision made by the potential caregiver. The absence of genuine choices means a limitation of one's capabilities. Since we take wellbeing to be a function of both one's functionings and one's capabilities, the absence of the capability *not* to provide unpaid care may amount to a loss of wellbeing if we compare it to the situation in which alternative scenarios are available.

Of course, more research is needed to disentangle and compare the various wellbeing consequences and trade-offs in the two domains to judge the overall wellbeing effects. A clear conclusion cannot be drawn about overall wellbeing effects. However, the established results indicate the kind of follow-up questions that need to be addressed to arrive at a general conclusion. Concretely, one could think of looking at the choice of providing care or comparing losses and gains of capabilities and functionings in both the family and employment domain.

Conclusions

The goal of this dissertation was to understand the employment consequences after a person starts to care for family members or friends with health issues. This focus allows me to further assess employment wellbeing, that is, wellbeing insofar as it is determined by one's work and work opportunities. My overall assessment, based on the five empirical studies presented here, is that *starting the new role of caregiving reduces the overall opportunities one has for one's employment*. It was shown that there is a trade-off between the functionings in the family domain and *all* functionings in the employment domain. Providing unpaid care led, in some cases, to *reducing working hours, stopping paid work, changing jobs (including becoming self-employed), lower hourly wages, lower wage growths, and lower job satisfaction*. Consequently, combining capabilities in the family and employment domains was not always possible.

Although both enrichment and conflict are likely going on, *conflict is more prevalent*, which means there are more tensions between achieved functionings than functionings enabling each other. Yet, *the spillover is often not that substantial and it is conditional on the exact situation of the caregiver*. There is a *more prominent negative spillover for some caregivers, whereas others can successfully combine unpaid care and work*. Here, both the life course perspective and gender mechanisms shed light on which groups of caregivers experienced more employment consequences. With populations aging, the spillover between caregiving and employment will likely increase. While the effects are at the moment and, on average, not so substantial for individuals, it is predictable that *the negative spillover will become more substantial for caregivers, societies, and economies*.

Outlook

I want to highlight two overarching avenues for future research that follow from my dissertation. First, this dissertation focused on the employment consequences of unpaid care, discussing but not directly empirically testing the mechanisms underlying the processes at hand. More research is needed to understand how caregiving translates into the described employment consequences (e.g., what exactly leads to lower job satisfaction?). Integrating enrichment and conflict into one study, like in Chapters 4 and 6, did demonstrate the potential positive consequences caregiving can have. Likely, both enrichment and conflict are underlying processes when a person is confronted with the new role of caregiver. It would be interesting to have more insights into how enrichment and conflict come together and how they potentially balance each other. Similarly, it is still unclear which gendered mechanisms are playing a role. Is the still dominant breadwinner norm influencing employment decisions? Or are men and women who select themselves into caregiving not very similar in their norms and expectations irrespective of their gender (e.g., did I find fewer gender effects than expected because of the gendered selection into caregiving)? More detailed measures of the gendered mechanisms are needed. Additionally, qualitative research could shed light on the decision processes to adapt paid work for caregiving or how employers see and evaluate caregivers when it comes to promotions and wages.

Second, I focused on three contexts: the Netherlands, Germany, and the UK. Germany and the UK have rich longitudinal panels with measures on caregiving and employment over multiple years that I could rely on. In the Netherlands, within this project, we had the opportunity to collect our own retrospective data and, for Chapter 4, even combine it with register data from tax administrations. Such data are unique, and similar retrospective data can only be found in Canada (Fast et al., 2020). Thus, the data used here and the detailed analysis that comes along with that data would not have been possible in many other contexts. This, however, means that my findings are not directly generalizable to other countries. Yet, population aging is a global phenomenon, and employment consequences of unpaid caregiving are likely found in many other countries. Moreover, aging processes over the world are diverse (Rapp, Ronchetti, & Sicsic, 2022), and so are the different policies related to employment, paid care services, and support for unpaid caregivers (Verbakel, Glaser, Amzour, Brandt, & Broese van Groenou, 2022). Comparing different countries could give more insights into which policies foster negative employment consequences of caregiving and which policies work to counterbalance those negative consequences. Ideally, one would conduct a cross-national comparison on the basis of longitudinal data to account for the fact that caregivers are a selective group. Finding comparable cross-national longitudinal datasets can be a challenging methodological undertaking. Nevertheless, a country comparison based on the results presented here would be a valuable avenue for future research.

Finally, in this dissertation, no policies were tested directly. Yet, what is evident from the empirical chapters is that there are more negative than positive employment consequences of unpaid care. In Chapter 2, I showed that a work-care conflict was related

to adapting paid work because of caregiving. This means that some caregivers struggle to combine work and care, which signals that caregivers need to be supported (more). This is in line with research showing that caregivers experience burden due to their caregiving tasks (Gérain & Zech, 2022; Swinkels, Broese van Groenou, de Boer, & Tilburg, 2019; Swinkels et al., 2017; Verbakel, 2018). Chapter 3 on monetary transfers related to the German cash-for-care policy comes the closest to informing about the effectiveness of a policy. Here, the conclusion was that monetary transfers can create an incentive to reduce labor supply. A cash transfer policy can do the trick if the goal is to combine work and care better by reducing labor supply. Nevertheless, it does make caregivers more dependent on the benefits. At the same time, the caregiving relationship as a source of income likely does not make up for the loss in income due to reduced labor supply (Ungerson, 1997). Increasing the available cash transfers and compensating for pension losses can be a solution related to the disadvantages of cash transfers. Other solutions to help with a care conflict can be flexible work environments, supportive colleagues and supervisors, training and counseling (Colombo et al., 2011; Hoefsmits, Akkerman, Padberg, & Schiltman, 2022; Morimoto & Takebayashi, 2020; Wayne, Grzywacz, Carlson, & Kacmar, 2007).

My last point is that the analysis shows that there are grounds to re-assess the policy directions governments, including the Dutch one, have taken: a stronger call on unpaid care while reducing eligibility to and generosity of paid care services. It seems that unpaid caregiving is a cheaper form of covering care expenses, yet the loss in time and income of caregivers who reduce their labor supply also needs to be considered (Xiang, Guzman, Mims, & Badr, 2022). This is especially relevant considering the lack of sufficient labor market participation now and in the future. Paid caregivers likely have more knowledge of how to provide health-related care and are more efficient in doing so, making it not necessarily more expensive (compared to the losses due to the reduced labor supply of caregivers). In their calculations, Coe, Skira, and Larson (2018) showed that unpaid caregiving for a highly dependent care receiver can be as expensive as full-time institutional care, including, but also beyond, foregone wages. Having the option of available and affordable paid care services can further give caregivers the feeling that there are alternatives; if they do not provide the care, the person in need still receives sufficient care. This can reduce the potential burden for those who do provide unpaid care – especially intensive caregiving – and, consequently, make it more combinable with employment for them. Investments in more paid care services are clearly a more extensive political question that I cannot answer based on my research. It includes questions such as how to pay care workers adequate salaries, how to pay for expanding professional care provision, and how to make care work an attractive career again. What I can say, and want to highlight, is that my research shows that reducing labor supply is the main strategy of unpaid caregivers when being in a work-care conflict. As a result, the trend in many countries to put more responsibilities on families is most likely not the solution to rising care needs, considering the lower available labor market participation.



Appendices



Appendix A – Chapter 2

Table A1 | Multilevel logistic regression analysis of reducing working hours, stopping to work, changing jobs, and becoming self-employed excluding conflict measures

Predictors	Reducing work- ing hours		Stopping to work		Changing jobs		Becoming self-employed	
	MEM	SE	MEM	SE	MEM	SE	MEM	SE
Start of caregiving (ref. young caregivers)								
early family form.	-0.02	(0.01)	-0.00	(0.01)	-0.02	(0.01)	0.01	(0.01)
late family form.	-0.02	(0.01)	-0.01	(0.01)	-0.02*	(0.01)	0.01	(0.01)
early middle age	-0.03	(0.01)	0.01	(0.01)	-0.03**	(0.01)	-0.00	(0.01)
late middle age	-0.02	(0.02)	0.01	(0.02)	-0.03**	(0.01)	0.01	(0.01)
Women (ref. men)	0.01	(0.01)	0.00	(0.01)	-0.00	(0.00)	-0.01	(0.01)
Memory problems (ref. none)								
some problems	-0.00	(0.01)	-0.00	(0.01)	0.01	(0.01)	-0.00	(0.01)
serious problems	0.00	(0.01)	0.01	(0.01)	0.00	(0.01)	-0.00	(0.01)
Mental health problems (ref. none)								
some problems	0.02*	(0.01)	0.01	(0.01)	0.00	(0.00)	0.00	(0.01)
serious problems	0.03	(0.02)	0.00	(0.01)	0.01	(0.01)	0.01	(0.01)
Problems with daily activities	0.01***	(0.00)	0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)
Relationship (ref. close family)								
other family	-0.06***	(0.01)	-0.02**	(0.01)	-0.01	(0.00)	-0.00	(0.01)
friends or neighbors	-0.08***	(0.01)	-0.02***	(0.01)	-0.01*	(0.00)	-0.00	(0.01)
Duration in years	-0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Order	-0.00	(0.00)	0.00	(0.00)	-0.00*	(0.00)	-0.00	(0.00)
Middle year of the episode	0.00	(0.00)	-0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Education (ref. primary educ.)								
intermediate secondary	-0.03	(0.03)	-0.01	(0.02)	-0.01	(0.02)	-0.01	(0.02)
higher secondary	-0.00	(0.03)	-0.03	(0.02)	-0.02	(0.02)	-0.01	(0.02)
intermediate vocational	-0.02	(0.03)	-0.01	(0.02)	-0.01	(0.01)	-0.02	(0.02)
higher vocational	-0.01	(0.03)	-0.00	(0.02)	-0.02	(0.01)	-0.02	(0.02)
university	-0.00	(0.03)	-0.01	(0.02)	-0.01	(0.01)	-0.02	(0.02)

*** p<0.001; ** p<0.01; * p<0.05, MEM = marginal effects at the mean, SE = standard error, N=3,673 episodes of 2,112 caregivers

Table A2 | Multilevel logistic regression analysis of reducing working hours, stopping to work, changing jobs, and becoming self-employed including interactions between life stages and sex

Predictors	Reducing work- ing hours		Stopping to work		Changing jobs		Becoming self-employed	
	MEM	SE	MEM	SE	MEM	SE	MEM	SE
Average intensity divided by 10	0.95***	(0.13)	0.89***	(0.17)	0.14	(0.25)	0.20	(0.34)
Squared intensity	-0.05***	(0.01)	-0.03**	(0.01)	0.01	(0.02)	-0.00	(0.02)
Sum provided tasks	0.14*	(0.06)	0.12	(0.09)	0.13	(0.14)	0.21	(0.18)
Difficulties combining work and care	0.96***	(0.10)	0.83***	(0.14)	0.98***	(0.25)	0.69**	(0.25)
Start of caregiving (ref. young caregivers)								
early family form.	-1.60**	(0.59)	-1.28	(0.83)	-2.66*	(1.26)	0.90	(1.40)
late family form.	-0.66	(0.51)	-1.68	(0.91)	-3.26*	(1.38)	0.97	(1.41)
early middle age	-0.72	(0.50)	0.14	(0.72)	-3.48*	(1.37)	-0.13	(1.42)
late middle age	-0.76	(0.60)	-0.47	(0.89)	-3.95*	(1.69)	-0.16	(1.61)
Women (ref. men)	-0.76	(0.60)	-0.47	(0.89)	-3.95*	(1.69)	-0.16	(1.61)
early family formation # women	0.69	(0.66)	-0.24	(0.96)	-0.12	(1.23)	-0.18	(1.80)
late family formation # women	-0.80	(0.61)	-0.32	(1.01)	-0.54	(1.34)	-0.07	(1.79)
early middle age # women	-1.19	(0.61)	-1.98*	(0.92)	-1.74	(1.58)	-0.39	(1.88)
late middle age # women	0.01	(0.75)	-0.14	(1.08)	-1.20	(2.21)	2.46	(2.12)
Memory problems (ref. none)								
some problems	-0.23	(0.24)	-0.16	(0.35)	0.65	(0.48)	-0.59	(0.58)
serious problems	-0.11	(0.29)	0.43	(0.42)	-0.20	(0.68)	-0.59	(0.76)
Mental health problems (ref. none)								
some problems	0.11	(0.22)	-0.30	(0.33)	-0.21	(0.48)	0.10	(0.57)
serious problems	-0.23	(0.34)	-0.71	(0.51)	0.29	(0.73)	0.42	(0.87)
Problems with daily activities	0.06	(0.05)	-0.06	(0.07)	-0.04	(0.11)	-0.12	(0.13)
Relationship (ref. close family)								
other family	-0.46	(0.31)	0.07	(0.42)	0.29	(0.56)	0.43	(0.66)
friends or neighbors	-0.71	(0.39)	0.31	(0.47)	-0.44	(0.77)	0.48	(0.69)
Duration in years	-0.01	(0.01)	0.03	(0.02)	0.03	(0.02)	0.02	(0.03)
Order	-0.10	(0.09)	-0.04	(0.13)	-0.45*	(0.21)	-0.01	(0.20)
Middle year of the episode	0.03**	(0.01)	0.02	(0.02)	0.04	(0.03)	0.04	(0.03)
Education (ref. primary educ.)								
intermediate secondary	-0.67	(0.56)	0.16	(0.81)	-0.30	(1.03)	-0.29	(1.51)
higher secondary	0.18	(0.57)	-1.32	(1.02)	-1.48	(1.24)	-0.58	(1.66)
intermediate vocational	-0.39	(0.51)	-0.09	(0.78)	-0.72	(0.97)	-1.71	(1.51)
higher vocational	-0.04	(0.50)	0.52	(0.77)	-1.36	(1.01)	-1.33	(1.47)
university	0.01	(0.54)	0.08	(0.83)	-1.12	(1.08)	-1.16	(1.58)
Variance life stages	1.71**	(0.53)	3.70**	(1.23)	6.63	(3.50)		

*** p<0.001; ** p<0.01; * p<0.05, SE = standard error, N=3,673 episodes of 2,112 caregivers

Appendix B – Chapter 3

Table B1 | Descriptive statistics

	Full sample (N _{obs} =110,418, N _{res} =21,995)						Employed sample (N _{obs} =50,371, N _{res} =10,499)					
	Women			Men			Women			Men		
	Range	Mean / %	S.D.	Range	Mean / %	S.D.	Range	Mean / %	S.D.	Range	Mean / %	S.D.
Labor supply	0/1	49.80		0/1	57.80		0-60	30.34	9.32	0-60	37.96	6.31
Employed												
Working hours												
Caring												
Non-caregiver	0/1	90.88		0/1	94.69		0/1	92.01		0/1	95.84	
Non-intensive caregiver	0/1	4.01		0/1	2.59		0/1	4.55		0/1	2.71	
Intensive caregiver	0/1	5.11		0/1	2.72		0/1	3.44		0/1	1.45	
Monetary Transfers												
Non-caregiver	0/1	90.88		0/1	94.69		0/1	92.01		0/1	95.84	
Caring but without transfers	0/1	7.67		0/1	4.87		0/1	6.90		0/1	3.89	
Low transfers	0/1	0.74		0/1	0.25		0/1	0.65		0/1	0.83	
High transfers	0/1	0.70		0/1	0.19		0/1	0.43		0/1	0.08	
Control variables												
Age	18-64	44.64	11.73	18-64	44.85	11.97	18-64	43.95	10.66	18-64	42.97	11.09
Single	0/1	31.63		0/1	32.01		0/1	27.85		0/1	21.00	
Partner outside the HH	0/1	11.31		0/1	10.08		0/1	12.21		0/1	9.36	
Partner inside the HH	0/1	56.88		0/1	57.77		0/1	59.75		0/1	69.55	
Partner missing	0/1	0.17		0/1	0.14		0/1	0.19		0/1	0.09	
Youngest child under 4	0/1	12.50		0/1	10.24		0/1	7.68		0/1	12.91	
Youngest child under 15	0/1	24.64		0/1	17.00		0/1	26.21		0/1	22.10	
No children under 15	0/1	62.86		0/1	72.076		0/1	66.11		0/1	64.99	
N Observations	59,068			51,350			25,823			24,548		
N Respondents	11,420			10,575			5,305			5,192		

Source: PASS panel wave 2 to 13

Table B2 | Individual change in employment status and caring for succeeding years (in percentages)

	2007/08 to 2008/09	2008/09 to 2010	2010 to 2011	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016	2016 to 2017	2017 to 2018	2018 to 2019	Average
Stable employment	88.10%	88.67%	89.22%	90.23%	90.61%	90.87%	89.05%	90.94%	90.36%	90.83%	90.49%	89.98%
Employed to non-employed	3.78%	4.57%	3.91%	4.01%	4.25%	3.90%	4.47%	3.90%	3.88%	3.75%	4.06%	4.05%
Non-employed to employed	8.12%	6.76%	6.87%	5.76%	5.13%	5.23%	6.48%	5.16%	5.75%	5.42%	5.45%	5.97%
N	6,942	6,957	6,902	8,804	8,628	8,314	7,835	7,438	7,005	7,309	6,773	82,907
Stable care	94.22%	92.47%	92.21%	92.91%	92.52%	92.58%	92.67%	92.81%	92.68%	93.09%	93.10%	92.83%
Towards more care	2.92%	4.40%	4.03%	3.53%	4.06%	3.61%	3.66%	4.11%	3.61%	3.84%	3.50%	3.75%
Towards less care	2.85%	3.13%	3.77%	3.56%	3.41%	3.81%	3.66%	3.08%	3.71%	3.06%	3.40%	3.41%
N	6,942	6,957	6,902	8,804	8,628	8,314	7,835	7,438	7,005	7,309	6,773	82,907

Source: PASS panel waves 2 to 13, change rates are based on respondents with observations in two subsequent waves

To deepen our interpretation of the results, we also estimated models in which the direction of the changes was included. This was done by comparing the state of caring (or monetary transfers, respectively) of the previous wave with the current wave (see Table B3 below). We consider these models only as an addition to our main findings because they have three drawbacks: (1) only the first change in one direction was the basis for the estimates (rather than all changes), (2) only changes between observed subsequent waves were included (leaving out changes when a wave in-between was not observed), and (3) respondents were excluded before they had a second transition.

Table B3 | Fixed-effect coefficients of exact changes on caring and monetary transfers (MTs)

	Changes on Caring			
	Employment status		Working hours	
	Women	Men	Women	Men
From non-caring to intensive care	-0.03 * (0.01) N=57,480	-0.04 * (0.01) N=50,618	-1.13 ** (0.37) N=25,277	0.35 (0.42) N=24,298
From non-intensive care to intensive care	-0.02 (0.02) N=58,363	-0.08** (0.02) N=51,033	-1.25 * (0.57) N=25,493	-1.40 (0.72) N=24,402
From non-caring to non-intensive care	-0.00 (0.01) N=56,663	0.02 (0.01) N=50,084	-0.82** (0.27) N=24,478	-0.11 (0.28) N=23,932
From intensive care to non-intensive care	0.04 * (0.02) N=58,284	0.00 (0.02) N=51,066	1.30 (0.64) N=25,423	0.13 (0.73) N=24,432
From non-intensive care to non-caring	0.06 *** (0.02) N=56,830	0.02 (0.02) N=50,139	0.02 (0.43) N=24,544	-0.50 (0.42) N=23,940
From intensive care to non-caring	0.00 (0.02) N=57,573	0.00 (0.02) N=50,615	0.17 (0.56) N=25,317	1.36 * (0.61) N=24,275
	Changes on monetary transfers (MTs)			
From non-caring to low MT	0.03 (0.03) N=58,802	-0.08 (0.04) N=51,304	-1.20 * (0.94) N=25,694	-1.27 (1.22) N=24,533
From caring without MT to low MT	0.01 (0.04) N=58,728	-0.10 * (0.04) N=51,296	-2.72 *** (0.75) N=25,664	-0.33 (1.23) N=24,524
From low MT to non-caring	0.02 (0.04) N=58,837	0.07 (0.06) N=51,296	3.45 ** (1.28) N=25,716	0.22 (1.29) N=24,532
From low MT to caring without MT	0.05 (0.05) N=58,775	0.00 (0.08) N=51,303	-1.61 (1.28) N=25,667	0.95 (2.50) N=24,531
From low MT to high MT	-0.01 (0.05) N=58,941	-0.19 *** (0.00) N=51,323	-0.09 (1.43) N=25,784	-2.93 (4.55) N=24,538
From high MT to low MT	0.06 (0.07) N=59,068	Not converged	2.65 (2.80) N=25,791	0.64 (3.88) N=24,541
From non-caring to high MT	-0.02 (0.04) N=58,296	-0.08 (0.17) N=51,296	1.28 (1.29) N=25,780	0.52 (3.90) N=24,542
From caring without MT to high MT	-0.00 (0.03) N=58,860	-0.11 (0.09) N=51,333	0.01 (1.12) N=25,753	6.46 *** (1.56) N=24,533
From high MT to non-caring	-0.04 (0.04) N=58,953	-0.04 (0.07) N=51.323	2.05 (1.67) N=25,787	3.51 (1.90) N=24,542
From high MT to caring without MT	-0.02 (0.05) N=58,849	Not converged	2.46 (1.74) N=25,745	-1.58 (4.55) N=24,536

Coefficients on employment status are based on conditional maximum likelihood estimation and are presented as logits. Coefficients on working hours are based on linear fixed-effect models. Standard errors in parenthesis. Controlled for age, age squared, partner, and children. Significance levels: *** p < 0.001; ** p < 0.01; * p < 0.05.

Source: PASS panel waves 2 to 13

Appendix C – Chapter 6

Table C1 | Descriptive statistics by groups

	Range	Women		Men		Caregiving inside household (including never provided care)		Caregiving outside household (including never provided care)		Mix of inside outside household (including never provided care)	
		%/Mean	S.D.	%/Mean	S.D.	%/Mean	S.D.	%/Mean	S.D.	%/Mean	S.D.
Job satisfaction	0/7	5.34	1.39	5.21	1.40	5.28	1.39	5.28	1.39	5.28	1.39
<i>Care</i>											
not provided care	0/1	69.44		76.93		93.60		79.00		94.10	
provided non-intensive care	0/1	19.31		16.45		2.59		16.34		2.43	
provided intensive care	0/1	11.25		6.62		3.81		4.66		3.47	
started caregiving	0/1	13.61		11.74		0.38		10.43		1.64	
provided sequential care	0/1	16.94		11.33		3.01		10.57		4.26	
<i>Controls</i>											
Age	16-65	42.56	11.60	42.46	11.761	40.73	11.74	42.32	11.67	40.88	11.71
No partner inside the HH	0/1	32.58		25.44		30.57		29.33		30.06	
Partner inside the HH	0/1	67.42		74.56		69.43		70.67		69.94	
Youngest child under 4	0/1	5.32		0.17		3.39		3.14		3.41	
Youngest child between 4-15	0/1	33.06		1.19		18.00		18.69		18.37	
No children under 16	0/1	61.62		98.64		78.60		78.17		78.21	
No permanent job	0/1	5.98		4.65		5.66		5.41		5.59	
Permanent job	0/1	94.02		95.35		94.34		94.59		94.41	
Sum job changes	0/8	0.37	0.68	0.40	0.71	0.39	0.70	0.39	0.69	0.40	0.70
Working hours	0-60	29.87	10.18	37.64	8.08	33.82	9.93	33.49	9.99	33.77	9.94
<i>Sex</i>											
Women	0/1					48.71		44.90		47.80	
Men	0/1					51.29		55.10		52.20	
N Observations		94,311	77,139	119,186	152,907	116,555					
N Respondents		14,600	17,556	23,805	28,904	23,023					

Source: Understanding society wave 1 to 10.

Table C2 | Changes between subsequent time points, differentiated by each wave

Job satisfaction	wave										Total
	2	3	4	5	6	7	8	9	10		
negative change	4460	5447	4752	4779	3839	3868	4210	3782	3271	38408	
	31.78	33.10	30.23	31.26	28.94	30.57	31.23	30.21	28.13	30.72	
stable	5917	6811	6605	6459	5323	5215	5559	5275	5247	52411	
	42.16	41.39	42.02	42.25	40.13	41.22	41.24	42.13	45.12	41.92	
positive change	3659	4199	4360	4049	4103	3568	3711	3463	3110	34222	
	26.07	25.51	27.74	26.49	30.93	28.20	27.53	27.66	26.75	27.37	
Caregiving by intensity	2	3	4	5	6	7	8	9	10	Total	
stable	12990	15351	14971	14629	12504	12246	12982	12092	11262	119027	
	92.55	93.28	95.25	95.70	94.26	96.80	96.31	96.58	96.85	95.19	
start non-intensive caregiving	718	779	458	440	506	254	301	280	223	3959	
	5.12	4.73	2.91	2.88	3.81	2.01	2.23	2.24	1.92	3.17	
start intensive caregiving	328	327	288	218	255	151	197	148	143	2055	
	2.34	1.99	1.83	1.43	1.92	1.19	1.46	1.18	1.23	1.64	
Caregiving by duration	2	3	4	5	6	7	8	9	10	Total	
stable	11756	14416	14456	14208	12172	11984	12700	11869	11058	114619	
	83.76	87.60	91.98	92.94	91.76	94.73	94.21	94.80	95.10	91.67	
started caregiving	882	932	585	532	618	314	386	345	275	4869	
	6.28	5.66	3.72	3.48	4.66	2.48	2.86	2.76	2.36	3.89	
sequential caregiving	1398	1109	676	547	475	353	394	306	295	5553	
	9.96	6.74	4.30	3.58	3.58	2.79	2.92	2.44	2.54	4.44	
Total	14036	16457	15717	15287	13265	12651	13480	12520	11628	125041	

Source: Understanding society wave 1 to 10. The first row has frequencies and the second row has column percentages.

Table C3 | Fixed-effects panel regressions for the robustness checks on variable intensity.

Sub-group:	Model R1.1	Model R2.1	Model R3	Model R4.1	Model R5.1
	Including stopping	Excluding time points with no caregiving after caregiving started	Without 'varying below 20 hours'	Age 16-39	Age 40-65
Not provided care	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Provided non-intensive care	-0.05** (0.02)	-0.04* (0.02)	-0.05*** (0.02)	-0.07* (0.03)	-0.06** (0.02)
Provided intensive care	-0.03 (0.02)	0.00 (0.03)	0.00 (0.02)	0.03 (0.05)	-0.02 (0.03)
Stopped caregiving	-0.02 (0.02)				
Age	-0.08*** (0.01)	-0.09*** (0.01)	-0.08*** (0.01)	-0.13*** (0.02)	-0.08*** (0.01)
Age squared	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Partner living in household (ref. no partner)	-0.03* (0.02)	-0.03 (0.02)	-0.03* (0.02)	-0.05* (0.02)	-0.00 (0.03)
No children below 16	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Youngest child below 4	-0.02 (0.02)	-0.02 (0.03)	-0.02 (0.02)	-0.02 (0.03)	-0.03 (0.07)
Youngest child between 4 and 15	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)	0.02 (0.04)	0.02 (0.02)
Permanent job (ref. not perm.)	0.02 (0.02)	0.02 (0.02)	0.02 (0.02)	0.05* (0.02)	0.00 (0.02)
Working hours	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00*** (0.00)	-0.00*** (0.00)
Sum job changes	0.36*** (0.01)	0.37*** (0.01)	0.36*** (0.01)	0.39*** (0.01)	0.36*** (0.01)
Constant	7.49*** (0.12)	7.63*** (0.13)	7.48*** (0.12)	7.62*** (0.24)	7.89*** (0.37)
Observations	171,450	151,759	170,634	67,198	102,281
R-squared	0.02	0.02	0.02	0.02	0.01
Number of respondents	32,156	32,152	32,102	15,563	18,884

Standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05.

Table C4 | Fixed-effects panel regressions for the robustness checks on variable duration.

Sub-group:	Model R1.2	Model R2.2	Model R4.2	Model R5.2
	Including stopping	Excluding time points with no caregiving after caregiving started	Age 16-39	Age 40-65
Not provided care	(ref.)	(ref.)	(ref.)	(ref.)
Started caregiving	-0.03 (0.02)	-0.01 (0.02)	-0.03 (0.03)	-0.04 (0.02)
Provided sequential care	-0.08*** (0.02)	-0.07*** (0.02)	-0.08* (0.04)	-0.10*** (0.02)
Stopped caregiving	-0.03 (0.02)			
Age	-0.08*** (0.01)	-0.09*** (0.01)	-0.13*** (0.02)	-0.08*** (0.01)
Age squared	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)	0.00*** (0.00)
Partner living in household (ref. no partner)	-0.03* (0.02)	-0.03 (0.02)	-0.05* (0.02)	-0.00 (0.03)
No children below 16	(ref.)	(ref.)	(ref.)	(ref.)
Youngest child below 4	-0.02 (0.02)	-0.03 (0.03)	-0.02 (0.03)	-0.04 (0.07)
Youngest child between 4 and 15	0.03 (0.02)	0.02 (0.02)	0.02 (0.04)	0.02 (0.02)
Permanent job (ref. not perm.)	0.02 (0.02)	0.02 (0.02)	0.05* (0.02)	0.00 (0.02)
Working hours	0.00 (0.00)	0.00 (0.00)	0.00*** (0.00)	-0.00*** (0.00)
Sum job changes	0.36*** (0.01)	0.37*** (0.01)	0.39*** (0.01)	0.36*** (0.01)
Constant	7.47*** (0.12)	7.62*** (0.13)	7.60*** (0.24)	7.87*** (0.37)
Observations	171,450	151,759	67,198	102,281
R-squared	0.02	0.02	0.02	0.01
Number of respondents	32,156	32,152	15,563	18,884

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Summaries

Dutch Summary

De meeste mensen kennen wel iemand die zorg verleent aan een familielid of vriend met gezondheidsproblemen, of ze verlenen zelf zorg aan een dierbare. Dergelijke zorg, ook wel mantelzorg genoemd, kan verschillende vormen aannemen: van emotionele ondersteuning of boodschappen doen voor je oma met dementie, tot het helpen van je partner met eten en aankleden na een grote operatie. In vergrijzende samenlevingen zal mantelzorg in de komende jaren zeer waarschijnlijk toenemen vanwege de stijging van het aantal oudere mensen en de verschuiving van de verantwoordelijkheid voor zorgbehoeften van de overheid naar de familie. Tegelijkertijd neemt het aantal mensen dat beschikbaar is om te werken en bij te dragen aan de verzorgingsstaat af. Daarom richt ik me in dit proefschrift op de vraag *wat de arbeidsgevolgen zijn van het verlenen van mantelzorg*.

In vijf empirische hoofdstukken bekijk ik verschillende arbeidsuitkomsten die mogelijk worden beïnvloed door het verlenen van mantelzorg. Ik analyseer hiervoor enquêtegegevens met informatie van minimaal elf jaar tot complete zorggeschiedenissen, waardoor een langetermijnperspectief mogelijk is. Eerst kijk ik naar strategieën om betaald werk aan te passen, zoals stoppen met werken, het verminderen van werkuren (Hoofdstukken 2 en 3), zelfstandig ondernemer worden en van baan veranderen (Hoofdstuk 2), en vervolgens naar de effecten op het uurloon (Hoofdstukken 4 en 5) en de tevredenheid over het werk (Hoofdstuk 6). Ik onderzoek hoe het beginnen met zorgen van invloed is op iemands werksituatie en in hoeverre dit afhangt van de zorgsituatie. Ik ga daarbij in op hoe de uren besteed aan zorgverlening (intensiteit, Hoofdstukken 2, 3, 4 en 6), hoelang een persoon zorg verleent (duur, Hoofdstukken 4, 5 en 6), wanneer in iemands leven de zorg begon (timing, Hoofdstukken 2 en 5), voor hoeveel verschillende mensen een zorgverlener zorg verleende (aantal zorgperiodes, Hoofdstuk 5) en financiële vergoedingen mensen kunnen motiveren om de werkuren te verminderen of te stoppen met werken (Hoofdstuk 3). Ik beargumenteer dat zorgverlening kan concurreren met werk, wat negatieve gevolgen kan hebben voor de werkgelegenheid. Toch breng ik ook een positief perspectief naar voren in Hoofdstukken 4 en 6 om de potentiële voordelen van zorgverlening voor werkgelegenheid te benadrukken. Met andere woorden: ik richt me niet enkel en alleen op de opofferingen (*beyond sacrifice*) die met mantelzorg gepaard kunnen gaan.

De resultaten van mijn empirische analyse benadrukken kleine, maar negatieve gevolgen van mantelzorg op het uitoefenen van betaald werk. Zorgverleners verminderden hun werkuren of stopten met werken, en de kans hierop was groter wanneer ze een financiële vergoeding ontvingen. Slechts enkelen veranderden van baan of werden zelfstandig ondernemer. Verder hadden mantelzorgers gemiddeld lagere uurlonen, verminderde loongroei en een lagere arbeidstevredenheid. Wat betreft de zorgsituatie licht ik enkele opvallende resultaten uit. Intensievere zorgverlening, wat betekent dat er meer uren per week aan zorg worden besteed, hing samen met meer

aanpassingen in de werkgelegenheid, vooral door het verminderen van werkuren en stoppen met werken. Intensieve zorgverlening en het stoppen met zorgverlening kwamen ten goede aan de loongroei van mannen, maar niet aan die van vrouwen. Dit toont aan dat voor mannen zorgverlening inderdaad positieve gevolgen kan hebben gezien hun loongroei. Een andere positieve uitkomst is dat hoe langer de mantelzorg duurt, hoe minder dit gepaard gaat met salarisverlies vanwege zorgverlening. Daarentegen verhoogde het zorgen voor meer mensen het salarisverlies. Tot slot verminderde het verlenen van niet-intensieve zorg en zorg voor meer dan één jaar de arbeidstevredenheid.

Samenvattend betekent dit dat afhankelijk van de zorgsituatie er potentiële, voornamelijk negatieve, arbeidsgevolgen zijn bij het verlenen van mantelzorg. Teruggerekend naar een hoger niveau betoog ik dat het verlenen van zorg de kansen van een persoon op het gebied van werk vermindert, wat mogelijk het welzijn van degenen die zorg verlenen vermindert. De effecten die in dit proefschrift worden getoond, lijken misschien klein, maar gezien de vergrijzende samenlevingen en de toename in zorgbehoefte zullen de hier beschreven arbeidsgevolgen waarschijnlijk toenemen.

English Summary

Most people know someone providing care for a relative or friend with health issues or providing it themselves. Forms of such care, here called unpaid care, range from emotional support or doing the groceries for your grandmother with dementia to helping your partner with eating and dressing after a major surgery. In aging societies, unpaid care will likely increase in the following years due to the share of older people rising and governments shifting the responsibility of care needs towards the family. With a simultaneous trend of fewer people available to work and pay welfare contributions, I concern myself in this dissertation with the question of *what the employment consequences of providing unpaid care are*.

In five empirical chapters, I look at different potential employment outcomes that are affected by providing unpaid caregiving. For this purpose, I analyze survey data covering eleven years to lifelong care histories, making a long-term perspective possible. First, I look at the strategies to adapt paid work, such as stopping to work, reducing working hours (Chapters 2 and 3), becoming self-employed, and changing jobs (Chapter 2), and second, effects on hourly wages (Chapters 4 and 5) and job satisfaction (Chapter 6). I focus on starting to care and also how caregiving affects employment differently depending on the caregiving situation. More precisely, the hours spent on caregiving (intensity, Chapters 2, 3, 4, and 6), how long a person is providing care (duration, Chapters 4, 5, and 6), when in a person's life caregiving started (timing, Chapters 2 and 5), for how many different people a caregiver provided care (number of caregiving episodes, Chapter 5), and how monetary transfers can motivate to reduce labor supply (Chapter 3). I theorize that caregiving can compete with employment, leading to negative consequences for employment. Still, I also bring in a positive perspective in Chapters 4 and 6 to highlight the potential benefits of caregiving for employment, meaning looking beyond sacrifice.

The results of my empirical analysis highlight small but negative consequences of unpaid caregiving for employment. Caregivers reduced working hours and stopped working with a higher likelihood of doing so when receiving monetary transfers. Only a few caregivers changed jobs or became self-employed. Further, unpaid caregivers had, to some degree, lower wages or wage growths and lower job satisfaction. I want to highlight some of the findings related to the caregiving situation. Higher intensity caregiving, meaning more hours per week of caregiving, was associated with adapting employment more, mainly by reducing working hours and stopping to work. Intensive caregiving and stopping to provide care benefited men's wage growth. At the same time, this was not the case for women, highlighting that for men, caregiving indeed could go beyond sacrifices considering their wage growth. Another positive consequence I found is that longer duration decreased the wage penalty for caregiving. In contrast, having cared for more people did increase the wage penalty. Last, providing non-intensive care and care for more than one year reduced job satisfaction.

In summary, this means that depending on the caregiving situation, there are potential, primarily negative, employment consequences when providing unpaid care.

Tracking this to a higher level, I argue that providing caregiving reduces a person's opportunities in the employment domain, potentially reducing the well-being of those providing care. The effects shown in this dissertation may seem small, but with aging societies, meaning more people in need of care in the future, the employment consequences described here are likely to increase.

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About the author

Klara Raiber was born in Ulm in 1994 as the youngest of four children. During her Bachelor studies in Social Science at Leibniz University Hannover (Germany), she spent two semesters in Chile at the University of Concepción, worked as a teaching assistant for sociology and quantitative methods courses, and completed an internship at the Institute for Employment Research (IAB) in Nuremberg (Germany). After obtaining her Bachelor's degree in 2017, Klara continued her studies with a Master's in Sociology at the University of Mannheim. During her time in Mannheim, she worked as a student research assistant under Henning Hillman and at the Leibniz Institute of Social Science (GESIS). After graduating in 2019, Klara moved to Nijmegen and started the present dissertation, supervised by Ellen Verbakel, Mark Visser, and Martin van Hees at the Department of Sociology at Radboud University in Nijmegen, as part of the Interuniversity Center for Social Science Theory and Methodology (ICS) and the Sustainable Cooperation Research and Training Center (SCOOP). During her PhD, Klara taught courses on life course research and social capital, and supervised research projects. From September to November 2022, she was a visiting scholar at the Center for Population Change and the Department of Gerontology at the University of Southampton, collaborating with Maria Evandrou and Jane Falkingham. Klara chaired the Halkes Women+ Faculty network in 2021 and 2022, and serves as a staff representative of the Gender & Sexuality Alliance at Radboud. In 2023, Klara received the Christine Mohrmann Stipend. She continues her academic career as an assistant professor of sociology at Radboud University.

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In today's society, many people either provide care for a loved one with health issues or know such a caregiver. Unpaid care takes various forms, from emotional support for a grandmother to assisting your partner with daily tasks after surgery. Providing this type of care can, however, impact other domains of a caregiver's life. This dissertation focuses on the effect on employment for people caring for a friend or family member. Based on survey data over multiple years from the Netherlands, Germany, and the UK, conclusions are drawn about the consequences caregiving has on (a) the strategies to adapt paid work, (b) labor supply reductions, (c) wages, and (d) job satisfaction. Both gender and life course perspectives are applied to understand how the employment consequences differ within the group of caregivers. Overall, the impact of caregiving on paid work was negative, which is expected to worsen with aging populations and increased caregiving needs in the future.

Klara Raiber obtained a Bachelor's in Social Science from the Leibniz University Hannover (2017) and a Master's in Sociology from the University of Mannheim (2019). Her PhD was conducted at the Department of Sociology at Radboud University as part of the Interuniversity Center for Social Science Theory and Methodology (ICS) and the Sustainable Cooperation Research and Training Center (SCOOP). She continues her academic career as an assistant professor at Radboud University.