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# Combining informal care and paid work: The use of work arrangements by working adult-child caregivers in the Netherlands

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## Abstract

An increasing number of people combine paid work with the provision of informal care for a loved one. This combination of work and care may cause difficulties, necessitating adaptations at work, i.e. work arrangements. The present study explores what types of work arrangements are used by working caregivers, and which caregiver, care and work characteristics are associated with the use of these work arrangements. Within the Lifelines Informal Care Add-on Study (Lifelines ICAS), data on 965 Dutch informal caregivers in the North of the Netherlands were collected between May 2013 and July 2014 (response rate 48%), and data on 333 working adult-child caregivers (aged 26–68 years, 82% female) were used in this study. A small majority (56%) of the working caregivers used one or more work arrangement(s): taking time off (41%), individual agreements with supervisor (30%), formal care leave arrangement (13%), and reduction in paid work hours (6%). Logistic regression analyses showed that long working hours (OR 1.06, 95% CI 1.01–1.08), and the experience of more health problems (OR 2.54, 95% CI 1.56–4.05) or a disrupted schedule due to caregiving (OR 2.50, 95% CI 1.66–3.78) increased the chance to have used one or more work arrangements. Lower educated working caregivers were less likely to have used a formal care leave arrangement (tertiary vs. primary education OR 2.75, 95% CI 1.13–6.67; tertiary vs. secondary education OR 1.27, 95% CI 1.27–5.09). Policy makers should inform working caregivers about the availability of the different work arrangements, with specific attention for low educated working caregivers. Employers need to consider a more caregiver-friendly policy, as almost half of the working adult-child caregivers did not use any work arrangement.

KEYWORDS
employment, informal caregivers, organisation of work, quantitative surveys, working caregivers

  

## 1 | INTRODUCTION

Given population ageing and the rapidly increasing costs of long-term care, there is a growing demand for informal care in many western societies (Colombo, Llena-Nozal, Mercier, & Tjadens, 2011). In 2012, 18% of the Dutch adult population (~2 million people) provided informal care (Post, 2013). It is expected that the percentage of Dutch older people (75+) with care needs will increase to 74% in 2030 (Gaymu, Ekamper, Beets, & Dutreuilh, 2007). At the same time, higher labour participation rates are required to pay the rapidly increasing healthcare costs (Arksey & Morée, 2008). The growing demands for informal care and the expected increased needs of labour participation will result in a growing number of people who combine their paid work with the provision of informal care. Currently, it is estimated that 40% of all informal caregivers in Europe combine their informal care with paid work, and this percentage will only increase in the future (Hoffman & Rodrigues, 2010).

Around a quarter of the working caregivers experience difficulties to combine work and care (de Boer, Broese van Groenou, & Keuzenkamp, 2010), resulting in high caregiver burden (Gordon, Pruchno, Wilson-Genderson, Murphy, & Rose, 2012; Reid, Stajduhar, & Chappell, 2010; Wang, Shyu, Chen, & Yang, 2011), poor well-being (Eldh & Carlsson, 2011; Reid et al., 2010; Stephens, Townsend, Martire, & Druley, 2001), increased work-related strain (Trukeschitz, Schneider, Muhlmann, & Ponocny, 2013), or long-term sickness absence (Mortensen et al., 2015). To facilitate caregivers to combine their care and work, specific work arrangements exist, such as taking time off, using formal care leave arrangements (e.g. short-term or long-term care leave, emergency leave), reducing paid work hours, and arranging individual agreements with the supervisor like flexible working hours or working (more) from home (de Boer et al., 2010; Keuzenkamp & Dijkgraaf, 2009). The use of work arrangements, like formal care leave arrangements and individual agreements with the supervisor, may be related to country-specific policy measures. This may impact the use of these specific work arrangements, and also the use of other work arrangements like reducing paid work hours or taking time off. For example, the Netherlands has more formalised leave policies compared to England (Arksey & Morée, 2008), which may affect the reduction of paid working hours (Keuzenkamp & Dijkgraaf, 2009). In England, policies are more focused on flexible working arrangements. However, in both England and the Netherlands, it is not mandatory for employers to consent to an informal caregiver's request for flexible working (Arksey & Morée, 2008).

The application of work arrangements may have positive and negative consequences for the caregiver with regard to their work career and health status, and also for their care recipient's health status and for society. Several studies showed that work arrangements are positively related to caregiver well-being and the balance between work and care (Arksey, 2002; Eldh & Carlsson, 2011; Maria Krisor & Rowold, 2014). For example, the option of paid care leave is positively related to the mental health status among working caregivers of an older relative with special healthcare needs (Earle & Heymann, 2011). In addition, high levels of workplace flexibility are associated with fewer depressive symptoms among working adult-child caregivers of older people with dementia (Wang et al., 2011). In contrast, a reduction of paid work hours due to caregiving has negative effects on the caregiver's level of income (Van Houtven, Coe, & Skira, 2013). Furthermore, the likelihood of returning to original levels of labour market participation after a period of caregiving is low (Arksey & Morée, 2008; Colombo et al., 2011; Lilly, LaPorte, & Coyte, 2007).

Little is known about who uses what kind of work arrangements. Previous research has shown that not only caregiver characteristics, like age, gender and health (Fredriksen-Goldsen & Scharlach, 2006; Henz, 2004; Keuzenkamp & Dijkgraaf, 2009), but also care and work characteristics play a role in the use of work arrangements. Care characteristics, such as caregiver burden, caregiving intensity and care recipient impairments, are associated with the perceived need for structural work arrangements, like adjustments in work schedule, leaving the job, changing jobs or reducing working hours (Plaisier, Broese van Groenou, & Keuzenkamp, 2015), the experience of work accommodations (e.g. being absent (part of) a workday, missing a promotion, using the phone at work to meet adult care responsibilities) (Fredriksen-Goldsen & Scharlach, 2006), and the use of formal care leave arrangements, taking time off, a reduction of paid work hours, and the arrangement of flexible working hours with the supervisor (de Boer et al., 2010; Keuzenkamp & Dijkgraaf, 2009). Unfortunately, these studies only included the perceived need for work arrangements, and not their actual use (Plaisier et al., 2015), or did not distinguish between different work arrangements (Fredriksen-Goldsen & Scharlach, 2006). Furthermore, the studies only considered a one-dimensional burden measure (de Boer et al., 2010), while subjective burden is a multidimensional concept and encompasses domain-specific burdens, such as physical, financial and social burdens (Bastawrous, 2013).

**What is known about this topic**

- Informal caregivers who combine informal care with paid work may experience difficulties, resulting in caregiver burden and work-related strain.
- Problems in the combination of paid work and informal care necessitate work adaptations.

**What this paper adds**

- In a more severe care situation, with high care demands and burden, caregivers adapt their work situation more often.
- Most common work arrangements are taking time off and individual agreements with the supervisor, while the use of formal care leave arrangements and reducing paid work hours were less common.
- Especially lower educated caregivers need specific attention and should be provided with information about formal care leave arrangements, as they are least likely to use them.

These domain-specific burdens may relate differently to the various types of work arrangements. For example, a reduction in paid work hours may negatively influence the financial situation of caregivers, and might therefore be a better option for working caregivers who experience a disrupted schedule due to caregiving (i.e. interruptions in usual daily activities like social life, work and other activities) than for working caregivers who already experience financial problems due to caregiving (Berecki-Gisolf, Lucke, Hockey, & Dobson, 2008). When caregiving responsibilities interrupt with activities in social life, work or other activities, this may be problematic and stressful. Not being able to change the caregiving situation may need changes in, for example, the work or employment situation.

With regard to work characteristics, research findings are conflicting. Keuzenkamp and Dijkgraaf (2009) found that caregivers who worked more than 28 hr a week were more likely to use formal care leave arrangements and to arrange individual agreements with their supervisor compared to caregivers working less than 28 hr a week. However, Henz (2004) found that caregivers who worked fulltime were less likely to reduce their paid work hours compared to caregivers who worked part-time. Furthermore, caregivers with high job demands had to make more accommodations at their workplace, like missing promotion or being absent (part of) a working day (Fredriksen-Goldsen & Scharlach, 2006), and caregivers who already made use of a formal care leave arrangement had a higher perceived need for structural work adaptations (e.g. work schedule adjustments or reducing working hours) (Plaisier et al., 2015).

Insights into the use of the various work arrangements may help employers to support their caregiving employees in a tailored way. Therefore, our aim was to study what types of work arrangements are used by working caregivers, and which caregiver, care, and work characteristics are associated with the use of these work arrangements.

## 2 | METHODS

### 2.1 | Study design and setting

This study was carried out within the Lifelines Cohort Study (Scholtens et al., 2015; Stolk et al., 2008). Lifelines is a multidisciplinary prospective population-based cohort study examining in a unique three-generational design the health and health-related behaviours of 167,729 persons living in the North of the Netherlands. It employs a broad range of investigative procedures in assessing the biomedical, socio-demographic, behavioural, physical and psychological factors which contribute to the health and disease of the general population, with a special focus on multi-morbidity and complex genetics. The Lifelines Cohort Study has been approved by the medical ethical committee of the University Medical Center Groningen, the Netherlands. All participants signed an informed consent form prior to their participation in Lifelines. Lifelines is a facility that is open for all researchers. Information on application and data access procedure is summarised on www.lifelines.net. More detailed information about Lifelines can be found elsewhere (Klijs et al., 2015; Scholtens et al., 2015).

### 2.2 | Recruitment of participants

Within Lifelines, a subcohort of informal caregivers (Lifelines Informal Care Add-on Study [Lifelines ICAS]) was defined. Lifelines participants who provided informal care were identified in the second Lifelines follow-up questionnaire and invited to participate in Lifelines ICAS (informal care definition: "unpaid care, because of chronic disabilities and/or health problems. Informal care concerns care for a loved one, for example your partner, a family member, friend, or other relative. Voluntary work and care for healthy children is not included"). The informal care questionnaire was sent between May 2013 and July 2014. In line with the participant's preference, which was known by the Lifelines Cohort Study, this was a paper questionnaire (to be returned with an enclosed reply envelope) or an online questionnaire (to be completed over the web). Within Lifelines ICAS, no reminders were sent, due to logistical and financial reasons (see also Oldenkamp, Hagedoorn, Stolk, Wittek, & Smidt, 2017; Oldenkamp, Wittek, Hagedoorn, Stolk, & Smidt, 2016). For this study, we used data from adult-child caregivers who were employed (>1 hr of paid work a week). Self-employed caregivers were excluded because of their limited possibilities to use (formal) work arrangements.

### 2.3 | Measurements

#### 2.3.1 | Work arrangements

Self-reported work arrangements were classified into (i) taking time off, (ii) formal care leave arrangements, (iii) individual agreements with the supervisor and (iv) a reduction in paid work hours (see Table 2 for a detailed description). A dichotomous variable of the use of work arrangements (no work arrangement/one or more work arrangements) was created.

#### 2.3.2 | Care situation characteristics

The care situation was characterised by (i) the care demands (total hours of informal care a week, number of caregiving tasks, caregiving duration [years]), (ii) care recipient characteristics ([starting] dementia/cognitive problems no/yes, behavioural problems no/yes, living in nursing home/home for the aged no/yes), (iii) the presence of support (unpaid help from other informal caregiver/volunteer no/yes, paid/professional help [i.e. home care] no/yes) and (iv) caregiver burden. Caregiver burden was measured with the Caregiver Reaction Assessment scale (CRA), which is a validated and reliable multidimensional instrument measuring both negative and positive caregiving experiences (Given et al., 1992; Nijboer, Triemstra, Tempelaar, Sanderman, & van den Bos, 1999). It contains 24 items and 5 subscales: the impact of caregiving on disrupted schedule, financial problems, lack of family support, health problems and self-esteem (positive). Caregivers rated the perceived impact of caregiving on a 5-point Likert scale. For each subscale, the average of the item scores was computed (range 1–5), with higher scores indicating higher

burden. Cronbach's alphas ranged from 0.68 for financial problems to 0.81 for disrupted schedule.

#### 2.3.3 | Work situation characteristics

The work situation was characterised by (i) the hours of paid work a week, (ii) job demands, (iii) job control and (iv) job strain. Job demands and job control were measured with the Copenhagen Psychosocial Questionnaire (COPSOQ), a validated and reliable tool to assess the psychosocial work environment (Pejtersen, Kristensen, Borg, & Bjorner, 2010). The COPSOQ consists of 41 subscales, including quantitative demands (four items) and influence (four items). Each item is rated on a 5-point Likert scale. Job demands were based on two items of the subscale quantitative demands, and job control on two items of the subscale influence. For both job demands and job control, an average total score was computed (range 0–100), with higher scores indicating higher job demands/control. Cronbach's alphas were 0.70 and 0.66 for job demands and job control respectively. Job strain was operationalised as the interaction term of job demands and job control, based on Karasek's job strain model (Karasek, 1979).

#### 2.3.4 | Caregiver characteristics

Characteristics of the caregiver consisted of socio-demographic characteristics (i.e. age, gender, educational level [primary, secondary, tertiary]), having children aged 0–18 years and self-rated health (0 = excellent/very good/good, 1 = fair/poor) (Hays & Morales, 2001).

### 2.4 | Statistical analyses

First, study population characteristics were described for the total group of working adult-child caregivers, using descriptive statistics. Second, differences in caregiver, care and work characteristics between caregivers who did use and did not use work arrangements were analysed, using Pearson chi-square tests, independent samples *t* tests and Mann–Whitney tests. Third, we evaluated to what extent and in what combinations the different types of work arrangements were used, by using descriptive statistics. Fourth, univariate and multivariate logistic regression analyses were used to study the associations between the various caregiver, work and care characteristics, and the use of (different types of) work arrangements (no/yes). For each outcome, univariate regression analyses were conducted for all variables, including the interaction term of job demands × job control (job strain). With exception for age and gender, variables with $p < .10$ were included in the multivariate regression analysis. If the number of events per variable (EPV) was lower than 10 in the multivariate logistic regression analysis (Courvoisier, Combescure, Agoritsas, Gayet-Ageron, & Perneger, 2011; Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996), we only presented the results of the univariate analyses. Multicollinearity diagnostics, Cook's D and standardised residuals were evaluated to check for multicollinearity, extreme outliers and influential cases (Kirkwood & Sterne, 2003). If multicollinearity was evident (condition index >10.0, variance proportions >0.50) (Belsley, 1991), collinear variables were entered into separate regression models, and presented separately. Finally, we conducted subgroup analyses for caregiver gender (presented in Tables S3 and S4). All analyses were performed in IBM SPSS Statistics 22.

## 3 | RESULTS

### 3.1 | Study population

Between May 2013 and July 2014, the informal care questionnaire was distributed to 2002 informal caregivers (575 paper questionnaires, 1427 online questionnaires). The informal care questionnaire was completed by 965 caregivers (overall response rate 48%, response rate paper questionnaire 61% and response rate online questionnaire 43%) (for more information see Oldenkamp et al., 2016, 2017). Of those, 333 were working adult-child caregivers (35% of 965 informal caregivers) who were included in the current study (reasons for exclusion: 311 not working, 79 self-employed, 217 no adult-child caregiver, 25 missing value(s), 1 extreme outlier on total hours of care provision). Study population characteristics are presented in Table 1. Caregivers who had used one or more work arrangements (56%) were higher educated, provided more hours and tasks of care, more often cared for a parent (in-law) with behavioural problems, experienced a more disrupted schedule and more health problems due to caregiving, worked more hours a week and experienced higher job demands, compared to caregivers who had not used work arrangements (44%).

### 3.2 | Types and combinations of work arrangements

The most common work arrangements were taking time off (41%), and individual agreements with the supervisor (30%). About 15% of the caregivers had used a formal care leave arrangement, and 6% had reduced their paid work hours (Table 2).

With regard to the number and combinations of work arrangements, one-third (31%) of all caregivers had used one work arrangement, most often taking time off. Among caregivers who had used two work arrangements (16%), the combination of taking time off and individual agreements with the supervisor was most common. A few caregivers used three (7%) or even four (2%) work arrangements (see Table S1).

### 3.3 | Associations with the use of work arrangements

In Table 3, the results of the multivariate logistic regression analysis investigating the associations between caregiver, work and care characteristics, and the use of work arrangements are presented. Caregivers used more often one or more work arrangements when they experienced a more disrupted schedule due to caregiving (OR 2.50, 95% CI 1.66–3.78), more health problems due to caregiving (OR 2.54, 95% CI 1.56–4.05) or when they worked more hours a week (OR 1.04, 95% CI 1.01–1.08).

**TABLE 1** Study population characteristics, and subgroups no/one or more work arrangements

| | All caregivers (*N* = 333) | No work arrangements (*N* = 147, 44%) | One or more work arrangements (*N* = 186, 56%) | |
|---|---|---|---|---|
| | % (*N*) or *M* (*SD*) | % or *M* (*SD*) | % or *M* (*SD*) | *p* |
| Characteristics CG | | | | |
| Age (28–68) | 50.2 (7.0) | 50.2 (7.4) | 50.2 (6.8) | .936 |
| Female | 82 (272) | 84 | 80 | .262 |
| Educational level | | | | |
| Primary | 22 (73) | 27 | 18 | .010 |
| Secondary | 41 (136) | 42 | 40 | |
| Tertiary | 37 (124) | 31 | 42 | |
| Children aged 0–18 years | 33 (110) | 35 | 31 | .419 |
| Poor self-rated health | 11 (38) | 8 | 14 | .097 |
| Care situation | | | | |
| Care demands | | | | |
| Total hours caregiving a week (1–25)[a] | 4.0 (2.0–6.0) | 3.0 (2.0–5.0) | 4.0 (3.0–7.0) | <.001 |
| Number of caregiving tasks (1–6) | 3.2 (1.1) | 3.0 (1.2) | 3.4 (1.0) | <.001 |
| Years of caregiving (0–33)[a] | 4.0 (1.0–9.0) | 4.0 (2.0–7.0) | 3.0 (1.0–9.0) | .829 |
| Characteristics CR | | | | |
| (Starting) dementia/ cognitive problems | 41 (135) | 35 | 45 | .088 |
| Behavioural problems | 9 (30) | 5 | 12 | .043 |
| Institutionalisation | 14 (46) | 16 | 12 | .389 |
| Support | | | | |
| Informal help | 51 (169) | 49 | 52 | .565 |
| Paid/professional help | 65 (215) | 59 | 69 | .068 |
| Caregiver burden (CRA) (1–5) | | | | |
| Disrupted schedule | 2.4 (.8) | 2.1 (.7) | 2.6 (.7) | <.001 |
| Financial problems | 2.1 (.6) | 2.1 (.6) | 2.1 (.6) | .873 |
| Lack of family support | 2.3 (.7) | 2.2 (.7) | 2.4 (.7) | .152 |
| Health problems | 2.1 (.6) | 1.9 (.6) | 2.2 (.6) | <.001 |
| Self-esteem | 3.9 (.5) | 3.9 (.5) | 3.8 (.5) | .314 |
| Work situation | | | | |
| Hours of paid work a week (1–60) | 26.5 (9.8) | 24.3 (10.0) | 28.2 (9.3) | <.001 |
| Job demands (0–100) | 29.8 (21.6) | 25.2 (20.2) | 33.5 (22.0) | <.001 |
| Job control (0–100) | 55.9 (21.6) | 55.6 (23.0) | 56.0 (20.4) | .855 |

Test of significance based on chi-square test (chi-square test for trend for educational level), independent samples *t* test or Mann–Whitney test.
[a]Median (interquartile range).
CG = caregiver; CR = care recipient; CRA = Caregiver Reaction Assessment.

The EPV were smaller than 10 for the different work arrangements, with the exception of taking time off. Therefore, in Table 4, the results of the univariate logistic regression analyses are presented for all four work arrangements. When caregivers provided more different caregiving tasks, experienced a more disrupted schedule, experienced more health problems, were higher educated, worked more hours a week, or experienced higher job demands, they were more likely to take time off. Caregivers with high care demands (i.e. caregiving hours, tasks, years), a more disrupted schedule, more health problems or a higher educational level, more often used a formal care leave arrangement. Individual agreements with the supervisor were less often arranged by older caregivers, and more often arranged by caregivers with a poor self-rated health, high care demands, a more disrupted schedule, more health problems or more

**TABLE 2** Types of work arrangements (*N* = 333)

| | *N* | % of total |
|---|---|---|
| Taking time off (holiday/working time reduction allowance) | **135** | **41** |
| Formal care leave arrangement | **49** | **15** |
| Short-term care leave | 13 | 4 |
| Long-term care leave | 1 | <1 |
| Special leave | 14 | 4 |
| Emergency leave | 34 | 10 |
| Unpaid leave | 8 | 2 |
| Individual agreements with the supervisor | **99** | **30** |
| Working (more) from home | 19 | 6 |
| Flexible working hours | 56 | 17 |
| Saving overtime for emergency situations | 40 | 12 |
| (Temporary) other less demanding tasks | 8 | 2 |
| Postponement of certain tasks/ activities | 6 | 2 |
| Working less and on fixed days | 9 | 3 |
| Allowed to register informal care hours | 2 | 1 |
| (Retraining) to different position/ function | 2 | 1 |
| Weekly contact with the supervisor | 10 | 3 |
| Reduction of paid work hours | **19** | **6** |
| Reduction of paid work hours | 15 | 5 |
| Agreement about being absent for longer period | 6 | 2 |
| (Temporary) not working | 2 | 1 |

**TABLE 3** Multivariate logistic regression analysis, outcome use of work arrangements (*N* = 333)

| | OR (95% CI) | *p* |
|---|---|---|
| Control variables[a] | | |
| Age | 1.00 (0.96–1.03) | .882 |
| Female | 0.95 (0.46–1.94) | .879 |
| Characteristics CG | | |
| Educational level (ref. primary) | | |
| Secondary | 1.15 (0.60–2.20) | .674 |
| Tertiary | 1.33 (0.66–2.71) | .429 |
| (Tertiary vs. secondary) | 1.16 (0.65–2.08) | .623 |
| Poor self-rated health | 1.46 (0.62–3.42) | .383 |
| Care situation | | |
| Care demands | | |
| Total hours caregiving a week | 0.96 (0.88–1.05) | .370 |
| Number of caregiving tasks | 1.29 (0.98–1.69) | .073 |
| Characteristics CR | | |
| (Starting) dementia/ cognitive problems | 1.14 (0.68–1.92) | .617 |
| Behavioural problems | 1.17 (0.46–2.99) | .747 |
| Support | | |
| Paid/professional help | 1.29 (0.76–2.16) | .345 |
| Caregiver burden (CRA) | | |
| Disrupted schedule | **2.50**[b] (1.66–3.78) | <.001 |
| Health problems | **2.54**[b] (1.56–4.05) | <.001 |
| Work situation[c] | | |
| Hours of paid work a week | **1.04** (1.01–1.08) | .006 |
| Job demands | 1.01 (0.99–1.02) | .370 |
| Nagelkerke $R^2$ | .245 | |

Bold OR's are significant with $p < .05$.

[a]Variables not shown in the table because $p > .10$ in univariate analyses: children aged 0–18 years, years of caregiving, CR institutionalisation, informal help, CRA financial problems, CRA lack of family support, CRA self-esteem, job control.

[b]Results from separate regression models, because CRA disrupted schedule and CRA health problems were collinear.

[c]Interaction term job demands*job control in multivariate model was not statistically significant, and excluded (OR 1.00, 95% CI 1.00–1.00, $p = .344$).

OR = odds ratio; 95% CI = 95% confidence interval; CG = caregiver; CR = care recipient; CRA = Caregiver Reaction Assessment.

hours of paid work a week. Higher job demands were associated with the arrangement of individual agreements with the supervisor, but this association attenuated with an increase in the level of job control. When caregivers experienced a more disrupted schedule, experienced more health problems, had a poor self-rated health or provided more hours of informal care a week, they more often reduced their paid work hours.

## 4 | DISCUSSION

More than half (56%) of the working adult-child caregivers had used one or more work arrangements in order to combine their paid work and informal care provision. Consistent with prior research (de Boer et al., 2010; Keuzenkamp & Dijkgraaf, 2009), most caregivers took time off (holiday or working time reduction allowance) or arranged individual agreements with their supervisor, yet the use of formal care leave arrangements or a reduction of paid work hours was less common. Working caregivers who experienced a more disrupted schedule or more health problems due to their caregiving, or who worked more hours a week, more often used work arrangements. This suggests that the use of work arrangements in general is not so much related to the care demands (i.e. hours or tasks of caregiving), but rather to how caregivers experience their caregiving, i.e. their caregiver burden. In addition to previous studies that only used a one-dimensional caregiver burden measure (de Boer et al., 2010), we focused on various aspects of caregiver burden and found that in particular the degree to which caregiving interrupts usual daily activities and affects physical health, matters for the use of work arrangements. Interestingly,

**TABLE 4** Univariate logistic regression analyses with four types of work arrangement as outcomes (*N* = 333)

| | Taking time off | | Formal care leave arrangement | | Individual agreements with the supervisor | | Reduction of paid work hours | |
|---|---|---|---|---|---|---|---|---|
| | *N* yes = 135 (41%) | | *N* yes = 49 (15%) | | *N* yes = 99 (30%) | | *N* yes = 19 (6%) | |
| | OR (95% CI) | *p* | OR (95% CI) | *p* | OR (95% CI) | *p* | OR (95% CI) | p |
| Control variables[a] | | | | | | | | |
| Age | 1.00 (0.97–1.03) | .995 | 1.00 (0.96–1.04) | .890 | **0.96** (0.93–0.99) | .019 | 1.01 (0.94–1.08) | .788 |
| Female | 0.65 (0.37–1.14) | .130 | 0.85 (0.40–1.82) | .682 | 0.77 (0.43–1.38) | .375 | 1.21 (0.34–4.28) | .769 |
| Work arrangements | | | | | | | | |
| Taking time off | — | | **3.68** (1.93–7.01) | <.001 | **3.70** (2.26–6.05) | <.001 | 1.68 (0.66–4.25) | .273 |
| Formal care leave arrangement | **3.68** (1.93–7.01) | <.001 | — | | **4.00** (2.14–7.48) | <.001 | **4.84** (1.84–12.75) | .001 |
| Individual agreements with the supervisor | **3.70** (2.26–6.05) | <.001 | **4.00** (2.14–7.48) | <.001 | — | | **5.74** (2.12–15.59) | .001 |
| Reduction of paid work hours | 1.68 (0.66–4.25) | .273 | **4.84** (1.84–12.75) | .001 | **5.74** (2.12–15.59) | .001 | — | |
| Characteristics CG | | | | | | | | |
| Educational level (ref. primary) | | | | | | | | |
| Secondary | **1.97** (1.06–3.65) | .031 | 1.08 (0.42–2.81) | .872 | 0.90 (0.48–1.68) | .738 | 1.08 (0.26–4.44) | .918 |
| Tertiary | **2.25** (1.21–4.21) | .011 | **2.75** (1.13–6.67) | .025 | 1.06 (0.57–1.99) | .847 | 2.05 (0.55–7.69) | .289 |
| (Tertiary vs. Secondary) | 1.14 (0.70–1.87) | .590 | **2.54** (1.27–5.09) | .009 | 1.18 (0.69–2.02) | .536 | 1.90 (0.67–5.39) | .227 |
| Poor self-rated health | 1.21 (0.62–2.40) | .576 | 1.65 (0.71–3.85) | .245 | **2.10** (1.06–4.19) | .034 | **4.07** (1.45–11.44) | .008 |
| Care situation | | | | | | | | |
| Care demands | | | | | | | | |
| Total hours caregiving a week | 1.02 (0.96–1.08) | .488 | **1.10** (1.03–1.18) | .008 | **1.09** (1.03–1.16) | .005 | **1.18** (1.07–1.29) | <.001 |
| Number of caregiving tasks | **1.30** (1.06–1.59) | .013 | **1.75** (1.29–2.35) | <.001 | **1.45** (1.16–1.81) | .001 | 1.43 (0.92–2.20) | .106 |
| Years of caregiving | 1.00 (0.96–1.04) | .886 | **1.07** (1.01–1.12) | .012 | 1.01 (0.97–1.06) | .609 | 1.02 (0.94–1.10) | .662 |
| Characteristics CR | | | | | | | | |
| (Starting) dementia/ cognitive problems | 1.18 (.760–1.85) | .457 | 1.50 (0.81–2.75) | .194 | 1.59 (0.99–2.56) | .056 | 1.68 (0.66–4.25) | .273 |
| Behavioural problems | 2.05 (0.96–4.38) | .063 | 1.18 (0.43–3.24) | .752 | 1.66 (0.77–3.58) | .201 | 1.20 (0.26–5.47) | .812 |
| Caregiver burden (CRA) | | | | | | | | |
| Disrupted schedule | **1.90** (1.39–2.58) | <.001 | **2.84** (1.87–4.32) | <.001 | **2.44** (1.74–3.41) | <.001 | **4.31** (2.26–8.24) | <.001 |
| Lack of family support | 1.33 (0.98–1.80) | .068 | 1.21 (0.81–1.81) | .358 | 1.30 (0.94–1.79) | .110 | 1.51 (0.84–2.72) | .167 |
| Health problems | **2.06** (1.41–3.02) | <.001 | **2.41** (1.48–3.94) | <.001 | **2.35** (1.57–3.53) | <.001 | **4.00** (1.95–8.21) | <.001 |
| Work situation | | | | | | | | |
| Hours of paid work a week | **1.05** (1.02–1.07) | <.000 | 1.03 (1.00–1.06) | .080 | **1.03** (1.01–1.06) | .008 | 0.97 (0.93–1.02) | .228 |

(Continues)

**TABLE 4** (Continued)

| | Taking time off | | Formal care leave arrangement | | Individual agreements with the supervisor | | Reduction of paid work hours | |
|---|---|---|---|---|---|---|---|---|
| | *N* yes = 135 (41%) | | *N* yes = 49 (15%) | | *N* yes = 99 (30%) | | *N* yes = 19 (6%) | |
| | OR (95% CI) | *p* | OR (95% CI) | *p* | OR (95% CI) | *p* | OR (95% CI) | p |
| Job demands | **1.02** (1.01–1.03) | .002 | 1.01 (1.00–1.03) | .059 | 1.01 (1.00–1.02) | .053 | 1.01 (0.99–1.03) | .520 |
| Job control | 1.00 (0.99–1.01) | .961 | 1.00 (0.98–1.01) | .593 | 1.00 (0.99–1.01) | .814 | 1.00 (0.98–1.02) | .794 |
| Interaction | | | | | | | | |
| Job demands | 1.01 (0.99–1.04) | .331 | 1.02 (0.99–1.06) | .188 | **1.04** (1.01–1.07) | .010 | 1.05 (0.99–1.12) | .097 |
| Job control | 1.00 (0.98–1.02) | .916 | 1.00 (0.98–1.03) | .827 | 1.01 (1.00–1.03) | .134 | 1.02 (0.98–1.06) | .284 |
| Job demands × job control | 1.00 (1.00–1.00) | .840 | 1.00 (1.00–1.00) | .518 | **0.99** (0.99–1.00) | .045 | 1.00 (1.00–1.00) | .134 |

Bold OR's are significant with $p < .05$.

[a]Variables not shown in table because $p > .10$ in univariate analyses for all four outcomes: children aged 0–18 years, CR institutionalisation, informal help, paid/professional help, CRA financial problems, CRA self-esteem.

OR = odds ratio; 95% CI = 95% confidence interval; CG = caregiver; CR = care recipient; CRA = Caregiver Reaction Assessment.

the distinction between the four types of work arrangements showed that high care demands do matter, next to a disrupted schedule and health problems due to caregiving. Taken together, this suggests that in a more severe care situation, caregivers have to adapt their work situation more often in order to combine their paid work and informal care tasks.

The most common work arrangement was taking time off. Both caregiver burden (disrupted schedule and health problems) and care demands (number of caregiving tasks) were associated with taking time off. The use of holiday or working time reduction allowance for informal care provision may limit leisure time for relaxation or holiday, which could negatively affect the caregiver's well-being in the long run. Both employers and their caregiving employees who face high care demands, high burden or long working hours, may benefit from discussing the employee's work and care situation and possible alternatives to manage the combination of paid work and informal care, like flexible working hours of working more from home.

In our sample, only 15% used a formal care leave arrangement. This is in line with previous Dutch studies (de Boer et al., 2010; Keuzenkamp & Dijkgraaf, 2009), and raises the question why it is so low. When the care situation is low in intensity and burden, caregivers may not need formal care leave arrangements. However, it has also been suggested that employees are unaware of the option to use formal care leave arrangements (Tolkacheva & Broese van Groenou, 2014). To raise this awareness, especially lower educated caregivers need attention and should be provided with information about the options for formal care leave arrangements, because they were least likely to make use of a formal care leave arrangement. Lower educated caregivers may less often need formal care leave arrangements or may be more often unaware of the options to use formal care leave arrangements. However, they may also be more likely to work for organisations or companies that do not offer information about formal care leave arrangements, or have jobs in which their presence is necessary (e.g. retail, manufacturing, call-centre). Perhaps this makes them to have few opportunities for work arrangements like formal care leave arrangements, making it more difficult to ask for, arrange, manage and use formal care leave arrangements if necessary. In future research, the influence of job type and the role of the organisations or companies, both on organisational, team, and supervisor level, could be studied.

Only a small group of caregivers (6%) reduced their paid work hours to provide informal care. These caregivers definitely need our attention, because continuing paid work can be highly relevant, not only because of financial security. Paid work offers a temporary relief from caregiving (Arksey, 2002; Arksey & Morée, 2008), compensates for the loss of social contacts and resources (Maria Krisor & Rowold, 2014; Reid et al., 2010), increases the opportunities for personal growth and enrichment (Eldh & Carlsson, 2011; Maria Krisor & Rowold, 2014), and offers recognition and appreciation which might be absent in the care situation (Isarin, 2005). Reducing paid work is one option to manage the combination of informal care and paid work. However, other options such as flexible working hours and formal care leave arrangements might be more beneficial in the long term, as these options may maintain the level of working hours (Pavalko & Henderson, 2006). But also when caregivers decide to reduce their paid work hours or even quit work, it is important to offer re-employment programmes that might help them to return to original levels of paid work after the caregiving period (Berecki-Gisolf et al., 2008).

Some study limitations need to be mentioned. First, the results are based on cross-sectional data, and the possibility of reverse causation should be taken into account. Second, our results are not generalisable to spousal or other caregivers, because we focused on adult-child

working caregivers. Spousal, adult-child and other caregivers may differ in their care situation and care evaluation (Broese van Groenou, de Boer, & Iedema, 2013). Third, the exclusion of self-employed caregivers might hamper the generalisability of the findings to self-employed caregivers. In our total study population, only 79 (18%) caregivers reported to be self-employed. Although self-employed caregivers might be more flexible to arrange their paid work hours (Carmichael & Charles, 2003), future research is needed to evaluate how self-employed caregivers manage the combination of informal care and paid work.

To conclude, the number of people combining paid work with informal care will increase in the near future (Hoffman & Rodrigues, 2010). To support this growing number of working caregivers, employers need to develop caregiver-friendly policies, and the government should support this development. With initiatives like the Dutch "Work&Informal Care Recognition" (Werk&Mantelzorg Erkenning), employers are stimulated to improve their personnel policies. The Work&Informal Care Foundation (http://www.werkenmantelzorg.nl) provides employers with tools and information to support them to increase the awareness and recognition of the problems working caregivers may face. In addition, employers are stimulated to provide information about formal care leave arrangements, and to offer flexible and tailored solutions that fit individual working caregivers, like flexible working hours.

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## CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

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## SUPPORTING INFORMATION

Additional Supporting Information may be found online in the supporting information tab for this article.

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