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Research Article

The Differential Impact of Retirement on Informal Caregiving, Volunteering, and Grandparenting: Results of a 3-Year Panel Study

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Abstract

Objectives: Research on retirees' engagement in informal caregiving, formal volunteering, and grandparenting often views retirement as a permanent exit from the workforce. Retirement processes are, however, increasingly diverse: some retire fully while others remain in paid work after retirement from a career job. A relevant but understudied question is how these different retirement processes relate to changes in engagement in unpaid productive activities. Building on role theory, we hypothesize that full and working retirees face different consequences of retirement and, therefore, differ in engagement in unpaid productive activities.

Method: We analyze data that were collected in 2015 and 2018 among 4,882 Dutch individuals aged 60–65 and employed at baseline. Around half had fully retired at follow-up and 10% worked after their retirement. At follow-up, more respondents are regularly volunteering (from 17% to 27%) and grandparenting (from 39% to 53%) than at baseline, while caregiving remains rather stable (from 33% to 30%).

Results: Conditional change models show that full retirement is associated with an increased likelihood of volunteering and grandparenting, but not caregiving. Engagement in postretirement work is related to an increased likelihood of looking after the grandchildren, but not to volunteering or providing informal care.

Discussion: Our findings suggest that volunteering is important for replacing weak ties after full retirement, while grandparenting might be a new, central role in retirement—irrespective of work engagement. Retirees seem to engage in unpaid productive activities for different reasons.

Keywords: Postretirement work, Retirement transition, Unpaid productive activities

Many retirees provide informal care, volunteer for organizations, or look after their grandchildren (European Commission, 2019). A leading explanation for why retirees participate in these unpaid productive activities is that they gain free time and lose their work role upon retirement (Mutchler et al., 2003). Such explanations consider retirement as a permanent exit from the labor

market. There are, however, different processes of retirement. Some retirees leave the workforce entirely, while others continue to work for pay after retiring from their career job (Beehr & Bennett, 2015). Working in retirement may, however, limit the time and opportunities for unpaid productive activities. As more retirees remain in paid work (European Commission, 2019), communities

and families may lack services that older adults in retirement have traditionally provided. However, insights about the relationship between different processes of retirement and unpaid productive activities are scarce. This study aims to fill this gap by answering the following research question: How are different processes of retirement linked to engagement in unpaid productive activities?

The literature mentions several activities through which older adults contribute to their families and communities (Adams et al., 2011) and conceptualizes them as unpaid work (e.g., Di Gessa & Grundy, 2017), civic engagement (e.g., van den Bogaard et al., 2014b), or productive activities (e.g., Hank & Stuck, 2008). There is some debate about what specific activities these concepts cover and how to define them (Serrat et al., 2019). Scholars agree, however, that such activities are socially valued, produce goods and services (Bass & Caro, 2001), and contribute to the well-being of older adults (Adams et al., 2011). Studies have focused on differences between formal volunteer work and informal engagement, such as informal volunteering (Erlinghagen, 2010; Mutchler et al., 2003) or informal caregiving (Hank & Stuck, 2008; van den Bogaard et al., 2014b; van der Horst et al., 2017). Looking after grandchildren is mostly examined apart from other unpaid productive activities (e.g., Hank & Buber, 2008) or grouped with informal activities (Di Gessa & Grundy, 2017). It is, however, a distinctive way in which older adults contribute to their families (Bengtson, 2001; Kahn et al., 2011). This study focuses on informal caregiving, formal volunteering, and looking after grandchildren, and refers to these collectively as unpaid productive activities. We use the following definitions throughout the study. Informal caregiving is “the unpaid care provided to ... dependent persons by a person with whom they have a social relationship” (Broese van Groenou & de Boer, 2016, p. 271). Formal volunteering refers to “unpaid work provided to parties to whom the worker owes no contractual, familial or friendship obligations” (Wilson & Musick, 1997, p. 694). Grandparenting is a form of family support in which “grandparents [are] providing childcare assistance to non-coresident kin” (Hank & Buber, 2008, p. 55).

Research on how the retirement transition relates to changes in unpaid productive activities is dominated by studies on formal volunteer work, of which most find that retirement is positively linked to volunteering (e.g., Erlinghagen, 2010; Hank & Erlinghagen, 2010; Mutchler et al., 2003), but some contradictory evidence exists as well (e.g., Tang, 2016). Conversely, studies on the link between retirement and informal caregiving are scarce. Cross-sectional research has shown that retirees are more likely to provide informal care than their working counterparts (e.g., Hank & Stuck, 2008). However, longitudinal studies examining the impact of retirement on informal caregiving yield mixed results. Van den Bogaard and colleagues (2014b)

find that individuals are more likely to provide informal care after retirement, while van der Horst and colleagues (2017) find that retirement has no effect on informal care. For grandparenting, cross-sectional studies show that retirees are more likely to look after grandchildren than their working counterparts (e.g., Hank & Buber, 2008). This result fits within research on social connectedness that suggests that retirement promotes involvement with the family (e.g., Settels & Schafer, 2018; Szinovacz & Davey, 2001). A sole longitudinal study shows that retirement has a positive effect on grandparenting for men but not women (Kahn et al., 2011). Taken together, current research seems to suggest that retirement may have a positive impact on engagement in unpaid productive activities, though a comprehensive picture is lacking. Furthermore, studies on engagement in unpaid productive activities generally measure retirement as a dichotomous event. Considering the complex nature of retirement can improve our understanding of older adults' engagement in unpaid productive activities (Cook, 2015; van den Bogaard et al., 2014b; van der Horst et al., 2017). Therefore, we distinguish retirees who enter full retirement from those who work in postretirement jobs, and compare these two groups of retirees to older workers who remain in a career job.

This study contributes to the literature on later-life, unpaid productive activities in three ways. First, we offer a comprehensive overview of unpaid productive activities. We examine informal caregiving, formal volunteering, and grandparenting simultaneously and analyze changes in different dimensions of engagement—that is, whether and how often individuals perform the activities. Second, we develop a refined theoretical model of engagement in unpaid productive activities during retirement. We explicitly differentiate the mechanisms that may link retirement to informal caregiving, formal volunteering, and grandparenting. Lastly, we use two-wave data that were collected in 2015 and 2018 from 4,882 individuals (aged 60–65 at baseline), approximately half of whom retired from their career job during the study period. These data enable us to observe retirement transitions of many older workers, and as such, capture the diversity and complexity of retirement.

This study takes place in the Netherlands, where employees are eligible for a public pension when they reach the public pension age. In 2015, when the baseline data were collected, the public pension age was 65 years and 3 months. The age is gradually being increased and will reach 67 by 2024, at which point it will be linked to projected life expectancy. Leaving the labor market before the public pension age (e.g., early retirement) substantially reduces pension benefits and has become less popular (Euwals et al., 2010). Postretirement work is increasingly common in the Netherlands, with most working retirees engaging in part-time work of less than 16 hr a week (Dingemans et al., 2016b). Additionally, reforms implemented during the last decade encourage people to contribute more to their communities and families (Verbeek-Oudijk et al., 2014).

Theoretical Background

In the literature, continuity theory and role theory have been used as theoretical frameworks to deduce hypotheses about how the transition from work into retirement will affect engagement in unpaid productive activities (e.g., Hank & Erlinghagen, 2010; van den Bogaard et al., 2014b; van der Horst et al., 2017). Continuity theory proposes that individuals strive for continuity in their lives and try to build consistency and coherence in their life patterns over time (Atchley, 1989). From this perspective, previous studies explain that when exiting work, an amplified *time availability* and a need to *adjust to the loss of the social functions of work* will increase the engagement in unpaid productive activities (e.g., Erlinghagen, 2010; van den Bogaard et al., 2014b).

Role theory suggests that individuals hold different roles that determine their personal and social identities (Ebaugh, 1988), such as the worker role (Rosso et al., 2010). Role transitions can be defined as “the psychological and (if relevant) physical movement between sequentially held roles” (Ashforth, 2001, p. 7). According to role theory, the transition from being a career worker to being a retiree, therefore, does not only focus on changes related to time availability but also accompanies two role-related subjective processes: the process of exiting the work role and the process of entering the retiree role (Ebaugh, 1988). Consequently, based on role theory, it can be expected that it is relevant to distinguish yet another theoretical mechanism beyond those related to the exit of the work role: a mechanism related to *retirement role entry*. This mechanism has been highlighted in studies about family ties (e.g., Szinovacz & Davey, 2001), but has received limited attention in the literature about unpaid activity engagement thus far.

Even though some studies have mentioned several potential mechanisms linking retirement to unpaid activity engagement (e.g., both time availability and work role loss), these mechanisms are generally grouped together for hypothesis deduction and the interpretation of the research findings (e.g., Mutchler et al., 2003). In this study, we will separate them. We will argue that the applicability of these three mechanisms can be expected to differ between full retirees and working retirees, and that the relevance of these mechanisms may differ between the unpaid productive activities studied.

Mechanisms Accompanying the Role Transition

The first theoretical mechanism that can be distinguished relates to time availability. Individuals typically experience a considerable increase in free time when they retire (Mutchler et al., 2003; van den Bogaard et al., 2014b) as the time previously devoted to work is freed up. Many retirees have the whole day at their disposal, often without any formal obligations (Ekerdt, 1986). Such an increase in free time may evoke feelings of boredom or marginality (Weiss, 2005). Ekerdt and Koss (2016, p. 1295) point out

that “the experience of retirement is fundamentally about dealing with time.” The gained time allows retirees to do what they enjoy, what they value, or to do nothing (Weiss, 2005). Retirees are thus challenged to fill the time gap that retirement created. This mechanism can be referred to as time substitution.

Second, individuals lose the functions of paid work when they retire (Barnes-Farrell, 2003). Paid work provides income, but also creates a daily time structure, provides social contact outside the family, a purpose in life, social status, and it gives people something to do (Jahoda, 1981). Damman and colleagues (2015) find that what retirees miss most about work is losing their social contacts. Weak interpersonal ties (Granovetter, 1973) satisfy social needs that close family and friends do not meet, namely the need for social status and social approval (Bruggencate et al., 2018). Retirees are thus challenged to replace work-related ties with other weak ties that meet their social needs. This mechanism can be referred to as weak-tie replacement.

Third, individuals enter a new phase of life when they retire; they become retirees (Moen, 2003). The role goes beyond that of a former worker in a career job (Moen, 2003). It is a role that retirees themselves need to define and negotiate because it lacks explicit expectations and responsibilities (Weiss, 2005). To do so, they expand, re-define, and change roles that were less central before retirement (Barnes-Farrell, 2003), or they seek new central roles (Eismann et al., 2019). Retirement is more than filling the gap that was created by leaving a career job—it allows retirees to develop new identities and roles (Dorfman & Kolarik, 2005). This mechanism can be referred to as role making.

Studies often treat these mechanisms as general consequences of retirement (e.g., Di Gessa & Grundy, 2017; Mutchler et al., 2003). The mechanisms may differ, however, depending on the type of retirement process. The time-substitution mechanism may be more central for full retirees than for working retirees because they completely withdraw from the labor market. Working retirees may also need time substitution, although to a lesser degree than full retirees because postretirement work is typically more flexible and requires fewer work hours than career jobs (Dingemans et al., 2016b). The weak-tie replacement mechanism may be most central for full retirees—they lose professional ties in retirement (van Tilburg, 2003). Working retirees, in contrast, can still enjoy work-related social contacts. In fact, many retirees remain in paid work due to the social contact that a job provides (Fasbender et al., 2015). Role making may be as relevant for full retirees as for working retirees. Both groups of retirees leave their role as workers in careers and gain an opportunity to create a new postretirement lifestyle.

The impact of retirement on engagement in unpaid productive activities—via the three mechanisms discussed—can furthermore be expected to depend upon the context in which the retirement process takes place.

The meaning and implications of retirement may depend upon earlier life patterns in terms of paid work and unpaid activity engagement (Loretto & Vickerstaff, 2012). A central contextual factor in the literature about family roles is the older worker's gender (Kahn et al., 2011; Szinovacz & Davey, 2001; van der Horst et al., 2017). In the literature about volunteering, occupational status has been proposed to be a relevant contextual factor to take into account (van den Bogaard et al., 2014a). We will integrate these contextual factors in our theorizing when deducing the study hypotheses. In the following section, the specific hypotheses will be presented for how the retirement process may shape engagement (i.e., likelihood and frequency) in the three studied unpaid productive activities, which are summarized in Table 1.

Study Hypotheses

Caregiving

Informal care is generally taken on because a family member or close friend needs help and assistance (Broese van Groenou & de Boer, 2016). As such, caregiving is considered to be primarily demand-driven. Who takes on caregiving responsibilities is negotiated within families and social networks (Broese van Groenou & de Boer, 2016). Work is considered a "legitimate excuse" to avoid providing care because it limits the time available for caregiving (Henz, 2009). Given the considerable increase in available time after retirement, retirees may face more expectations, both internally and externally, to respond to care demands. In this regard, caregiving is a meaningful time substitution in retirement. We hypothesize that the transition into full retirement (Hypothesis 1a) or working in postretirement jobs (Hypothesis 1b) is associated with increased engagement (i.e., likelihood and frequency) in informal caregiving compared to continuous career work. Given that full retirees might require time substitution more than working retirees, we also hypothesize that the transition into full retirement is associated with increased engagement (i.e., likelihood and frequency) in informal caregiving compared to working in postretirement jobs (Hypothesis 1c). These theoretical expectations may, however, more strongly apply to men than to women, given traditional gender roles and associated behaviors (cf. social role theory; Eagly & Wood, 2012). Women may already be more inclined to combine

paid work with unpaid family activities across the life course (Loretto & Vickerstaff, 2012). Their retirement may, as such, imply a smaller change in terms of time. We, therefore, expect that the impact of retirement on informal caregiving is stronger for men than for women (Hypothesis 1d).

Volunteering

Reasons for volunteering go beyond altruism and include motives such as learning new skills, sharing knowledge, feeling better about oneself, and establishing social contacts (Clary & Snyder, 1999). Many older adults value the social dimension of volunteering (Okun & Schultz, 2003). Formal volunteer work integrates older adults into an organization and creates weak social ties (Berkman et al., 2000). Volunteering may, therefore, create a way for individuals to reestablish social contacts that were lost upon exiting the work role, thereby providing a weak-tie replacement. We hypothesize that the transition into full retirement is associated with increased engagement (i.e., likelihood and frequency) in volunteering compared to continuous career work (Hypothesis 2a). In contrast, the difference in engagement (i.e., likelihood and frequency) in volunteering between working in postretirement jobs and continuous career work will be less pronounced (Hypothesis 2b). Given that full retirees might experience a greater need for weak-tie replacement than working retirees, we hypothesize that the transition into full retirement is associated with increased engagement (i.e., likelihood and frequency) in volunteering compared to working in postretirement jobs (Hypothesis 2c). For individuals in higher-status occupations, exiting the work role may imply a substantial loss of social status next to the loss of work-related contacts. Social status is another central social function of work that individuals may substitute through volunteering (van den Bogaard et al., 2014a). The effect of full retirement on volunteering may, therefore, be stronger among individuals from higher-status occupations than among those from lower-status occupations (Hypothesis 2d).

Grandparenting

Grandparenthood is a central stage in later life, a form of intergenerational solidarity that grandparents express by regularly looking after their grandchildren (Bengtson, 2001). It offers older adults a unique social role that they

Table 1. Dominant Hypothesized Mechanisms Linking the Retirement Process to Engagement in Unpaid Productive Activities

Unpaid productive activity	Dominant mechanism	Retirement process		
		Full retirement vs career job	Postretirement job vs career job	Full retirement vs postretirement job
Caregiving	Time substitution	More likely (Hypothesis 1a)	More likely (Hypothesis 1b)	More likely (Hypothesis 1c)
Volunteering	Weak-tie replacement	More likely (Hypothesis 2a)	No difference (Hypothesis 2b)	More likely (Hypothesis 2c)
Grandparenting	Role making	More likely (Hypothesis 3a)	More likely (Hypothesis 3b)	No difference (Hypothesis 3c)

frequently assume with pleasure and joy (Silverstein & Marengo, 2001). Grandchildren are stimulating because, with them, grandparents participate in activities that they otherwise would not. Gauthier (2002, p. 302) describes grandparenting as a “second, deeply gratifying career.” As a new, central role in later life, grandparenting may be an opportunity for role making in retirement. We hypothesize that the transition into full retirement (Hypothesis 3a), or postretirement work (Hypothesis 3b), is associated with increased engagement (i.e., likelihood and frequency) in grandparenting compared to continuous career work. Since role making might be relevant for both full and working retirees, we hypothesize that the effect of the transition into full retirement and working in postretirement jobs on engagement (i.e., likelihood and frequency) in grandparenting is similar (Hypothesis 3c). These theoretical propositions may, however, apply more to men than to women. Women often combine the work role with family roles over the life course (cf. social role theory; Eagly & Wood, 2012). Szinovacz and Davey (2001) point out that “among mothers, the grandparent role seems to override potential employment-related constraints” (p. 198). Consequently, women may have a smaller need for role making after retirement than men do. Overall, we expect the impact of retirement on grandparenting to be stronger for men than for women (Hypothesis 3d).

Design and Methods

Sample

This study uses data from the NIDI Pension Panel Study (NPPS), a large-scale longitudinal study in the Netherlands that tracks older workers during their transition from a career job into retirement (Henkens & van Solinge, 2019; Henkens et al., 2017). The data for the first wave were collected in 2015, and the sample was drawn from the three largest pension funds in the Netherlands. These pension funds cover different sectors, including government, education, construction, care, and social work, and represent roughly 49% of Dutch wage-employed workers. A sample of organizations was selected from the pension funds, stratified by size and sector. A random sample of older workers aged 60–65 who worked at least 12 hr a week was then drawn. A total of 15,470 questionnaires were sent out in 2015, of which 6,793 were completed (response rate of 44%). A follow-up study took place in 2018 with the same participants receiving a new questionnaire. A total of 5,316 respondents participated in the follow-up survey (response rate of 79%). For the analysis, the base sample consisted of those respondents who participated in the NPPS follow-up survey. After excluding participants without information on the dependent variables ($N = 434$), the base analytical sample comprised 4,882 older adults. Our analysis of grandparenting focused on a subsample of 3,183 grandparents at wave 1.

Measures

Our dependent variables were informal caregiving, formal volunteering, and grandparenting at follow-up (see Table 2 for the wording of items and response categories). We measured engagement in two ways. First, we determined whether individuals performed an activity at least once weekly. Respondents who did so less often, or never, were coded as inactive. Second, for those respondents who were engaged in the respective activity at least weekly in both waves, we measured the number of hours that individuals performed a particular activity.

The central explanatory variable was the retirement process that comprises three categories: remaining in a career job (i.e., no retirement), retired and working in a postretirement job, and entering full retirement. Since respondents were employed in career jobs at baseline, we identified the retirement status from the follow-up questionnaire that inquired about whether individuals used a retirement arrangement to exit the career job (e.g., early retirement or reaching mandatory retirement age). Moreover, we distinguished retirees by their work status. Retirees who no longer worked for pay were coded as full retirees and those who engaged in paid work were coded as working retirees (working 23 hr a week on average).

We controlled for baseline sociodemographic characteristics (age, gender, partner status, health status, and wealth) and baseline employment characteristics (occupational status, work hours, and occupational sector), which have been shown to impact both the retirement process and unpaid productive activities (Hank & Stuck, 2008; van den Bogaard et al., 2014b). Table 2 presents the mean, standard deviation, coding, and wording of the survey questions for the dependent, independent, and control variables used in the analysis. In general, item nonresponse was low at 2%, with a maximum of 7% for our measure of wealth. For low item nonresponse, less rigorous techniques to impute missing values are acceptable (Little et al., 2014). We used single stochastic regression imputation (Stata version 14: *mi impute chained, m = 1*) to deal with item nonresponse (Enders, 2010).

Analysis

To investigate the engagement in unpaid productive activities after retirement, we performed conditional change models. These models estimated the effect of independent variables on the change in a dependent variable between baseline and follow-up, controlling for initial baseline values. We estimated separate models for informal caregiving, formal volunteering, and grandparenting at follow-up and included baseline engagement in these activities, indicators of the retirement process, and control variables in the models. We carried out our analysis in two steps. First, we analyzed the engagement status with logistic regression models. Second, as an additional test of

Table 2. Means, SDs, Coding of Independent Variables, and Wording of Survey Questions

Variable	Mean/share	SD	Coding and psychometric properties	Description/wording (questions translated from Dutch)
Unpaid productive engagement				
Caregiving _{baseline}	0.33		Dummy variable coded 0–1, 1 = provision of care at least weekly	Questions: (1) Do you provide help to family members or friends who are ill or in need of help? (2) How frequently do you provide that help? Response categories are 1 = daily; 2 = several times a week; 3 = about weekly; 4 = about monthly; 5 = a couple of times a year
Caregiving _{follow-up}	0.30			
Volunteering _{baseline}	0.17		Dummy variable coded 0–1, 1 = volunteering at least weekly	Question: Are you involved in volunteer work? Response categories are 1 = yes, daily; 2 = yes, several times a week; 3 = yes, about weekly; 4 = yes, about monthly; 5 = yes, a couple of times a year; 6 = no
Volunteering _{follow-up}	0.27			
No grandchildren _{baseline}	0.18		Dummy variable coded 0–1, 1 = no grandchildren under the age of 12 at baseline	Questions: (1) Do you have grandchildren? (2) How many per age group? (1 = younger than age 5; 2 = age 5–11 years; 3 = age 12 and older)
Grandparenting _{baseline}	0.39		Dummy variable coded 0–1, 1 = grandparenting at least weekly	Question: Do you ever look after your grandchildren? Response categories are 1 = no; 2 = every day; 3 = several times a week; 4 = about once a week; 5 = about once a month; 6 = a few times a year
Grandparenting _{follow-up}	0.53			
Hours of unpaid productive engagement^a				
Caregiving _{baseline}	4.14	5.45	Continuous variables, range 0.5–40 hr	Question: How many hours do you spend per week on average on the following activities? (1) Unpaid help to persons who are ill or in need of help; (2) volunteer work; (3) looking after grandchildren
Caregiving _{follow-up}	4.84	6.25		
Volunteering _{baseline}	5.63	4.61		
Volunteering _{follow-up}	7.06	5.69		
Grandparenting _{baseline}	7.81	5.31		
Grandparenting _{follow-up}	8.94	5.68		
Controls				
Age _{baseline}	62.05	1.60	Continuous variable, range 60–65 years at baseline	Question: In what year were you born?
Gender	0.45		Dummy variable coded 0–1, 1 = woman	Question: Are you a man or a woman?
Partnered _{baseline}	0.80		Dummy variable coded 0–1, 1 = with partner (married, cohabitation, living apart)	Question: Do you have a partner? Response categories are 1 = yes, I am married; 2 = yes, I cohabit with a partner; 3 = yes, I do have a partner but we do not live together; 4 = no, I am single
Health status _{baseline}	3.24	0.86	1-item scale, range 1 (very poor) to 5 (excellent)	Question: How would you characterize your health in general? Response categories are 1 = excellent to 5 = very poor and were reversely coded
Wealth _{baseline}	175.18	186.35	Quasi-interval measure, range 2.5–750	Question: How large do you estimate your total wealth (own house, savings, stocks, etc. minus debts/mortgage) to be? Response categories are 1 = <5,000 euros to 7 = >500,000 euros. We used class averages and report values in thousands.
Full-time work _{baseline}	0.47		Dummy variable coded 0–1, 1 = 36 or more hours per week	Question: How many hours do you work on average (per week)? Excluding overtime

Table 2. Continued

Variable	Mean/share	SD	Coding and psychometric properties	Description/wording (questions translated from Dutch)
Occupational status _{baseline}	0.01	0.93	Coding is based on 2008 International Socio-Economic Index of Occupational Status) and was standardized using the full sample Dummy variable coded 0–1, 1 = welfare sector	Question: What is your job or profession? In which category could your job or profession be grouped? Information about sector is obtained via the three participating pension funds (ABP, PfZW, BpfBouw) which cover the following sectors: government, education, construction, care, social work
Welfare sector _{baseline}	0.16			
Retirement process at follow-up				
Career job	0.43		Dummy variable coded 0–1, 1 = transition to respective category	Questions: (1) Which situation applies to you? Response categories are 1 = I work for pay, 2 = I do not work (for pay) any longer; (2) Have you made use of one of the following arrangements (e.g., early retirement) since 2015? (3) Have you tried to find paid work after you stopped working? (if fully retired) Response categories are 1 = no, 2 = yes, but I have been unsuccessful, 3 = yes, and I have found paid work
Postretirement job	0.08			
Full retirement	0.50			
No intention to work	0.45			
Unsuccessful job search	0.05			

Notes: The descriptive statistics are based on the values prior to imputation.

^aHours of engagement are calculated among individuals that engage in the respective activity at baseline and follow-up.

the hypotheses, we focused on respondents who engaged in one unpaid productive activity at both points in time and estimated linear regression models to explore the changes in engagement frequency.

Results

Descriptive Findings

Table 2 shows the shares of individuals who engaged in unpaid productive activities at baseline and follow-up. Many respondents provided informal care (33%), volunteered (17%), and looked after grandchildren (39%) at least weekly at baseline. At follow-up, the share of caregivers remained rather stable (30%), while shares of respondents who volunteered (27%) and looked after grandchildren (53%) both increased. The rates of engagement in unpaid productive activities differed substantially by the retirement process, however. Figure 1 illustrates the changes in rates of engagement in informal caregiving (Figure 1A), formal volunteering (Figure 1B), and grandparenting (Figure 1C) by indicators of the retirement process. The share of informal caregivers remained stable for workers in career jobs, full retirees, and working retirees. The share of volunteers increased for full retirees but remained stable for the other two groups. In contrast, the share of individuals who looked after their grandchildren increased the most among full and working retirees, but remained stable for workers in career jobs.

Multivariate Findings

Table 3 presents the results of the conditional change models that explain the changes in engagement in unpaid productive activities between baseline and follow-up. Model 1 reports the effect of retirement on whether individuals provided informal care (Model 1a), volunteered (Model 1b), and looked after grandchildren (Model 1c) at follow-up when controlling for baseline engagement in these activities. First, our findings did not support Hypothesis 1 stating that informal caregiving is more likely in full retirement and postretirement work than in continuous career work. Compared to continued work in a career job, neither full retirement nor postretirement work have any significant effect on involvement in informal caregiving at follow-up. Also, the effect of full retirement on the likelihood of caregiving did not differ by gender ($b(\text{interaction}) = -0.12$; $p > .05$; not reported in Table 3). Second, our findings supported Hypothesis 2 that volunteering is more likely for full but not for working retirees. We found that, compared to continuous career work, full retirement was significantly linked to an increased likelihood of volunteering. In contrast, postretirement work had no significant effect on volunteering at follow-up. This hypothesis is further supported by the comparison between the effect of full retirement and postretirement work on volunteering (same

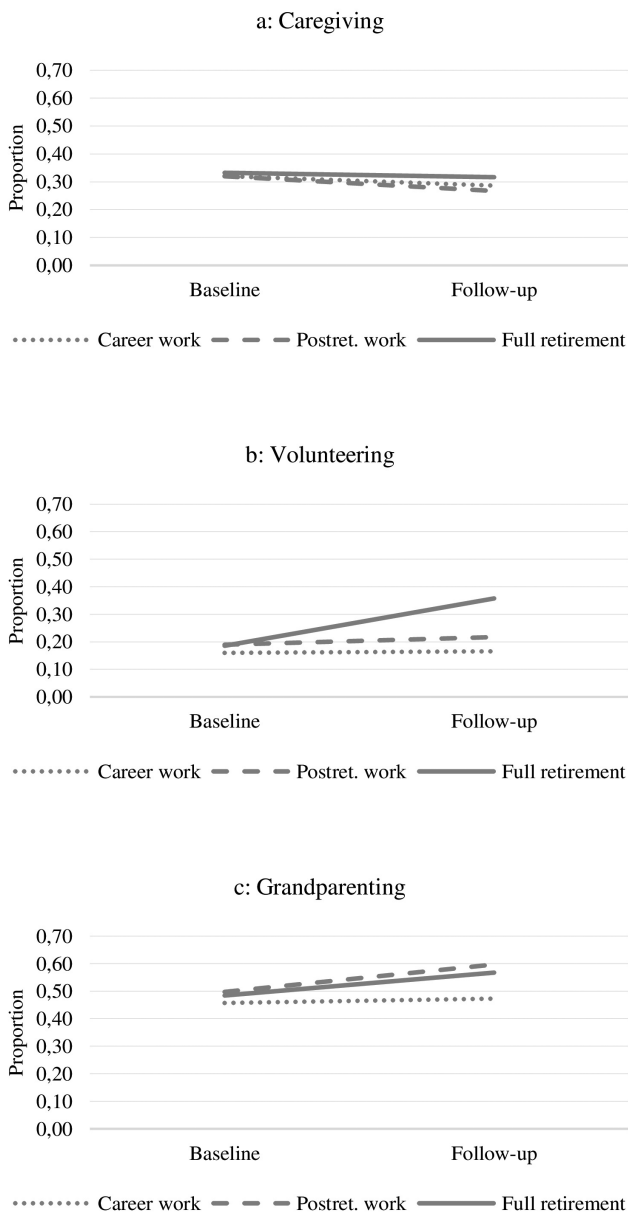


Figure 1. Share of respondents engaged in unpaid productive activities (caregiving, panel a; volunteering, panel b; grandparenting, panel c) at baseline and follow-up by retirement status indicators.

models, but with a different reference group, not reported in Table 3), in which full retirement is significantly linked to an increased likelihood of volunteering at follow-up ($b = 0.90$; $p < .001$). The interaction term of full retirement with occupational status had no statistically significant effect on volunteering ($b(\text{interaction}) = 0.05$; $p > .05$; not reported in Table 3). Third, the findings supported Hypothesis 3 that grandparenting is more likely in retirement, both for full and working retirees. In contrast to continuous career work, full retirement and postretirement work were significantly linked to an increased likelihood of grandparenting at follow-up. Moreover, the effect of full retirement on the likelihood of grandparenting was weaker for women than

for men ($b(\text{interaction}) = -0.39$; $p < .05$; not reported in Table 3).

In Model 2, we explored the effect of retirement on the changes in hours of engagement in unpaid productive activities of individuals who provided informal care (Model 2a), volunteered (Model 2b), and looked after grandchildren (Model 2c) at baseline and follow-up. Overall, these findings portrayed a similar picture as for the effect of retirement on engagement status. Full retirement had no effect on the number of hours dedicated to informal care at follow-up. However, full retirement was linked to an increase in time spent on volunteering by 2.9 hr and on grandparenting by 2.3 hr, compared to continuous career work. Postretirement work has, however, no effect on the hours spent on unpaid productive activities compared to continuous career work. Moreover, full retirement was linked to an increase in volunteering by 1.8 hr ($p < .05$) and grandparenting by 1.7 hr ($p < .01$) compared to postretirement work (not reported in Table 3; same models but different reference group). Lastly, the interaction terms of full retirement with gender had no significant effect on the frequency of informal caregiving ($b(\text{interaction}) = -1.27$; $p > .05$) and grandparenting ($b(\text{interaction}) = -0.12$; $p > .05$). The interaction term of full retirement with occupational status had also no significant effect on the frequency of volunteering ($b(\text{interaction}) = 0.35$; $p > .05$).

Additional Findings

For some retirees, being fully retired may be their preference, while for others, it may reflect an unsuccessful job-search following retirement (Dingemans et al., 2016a). In additional analyses, we tested a more refined measure of full retirement. We divided full retirement into two types: (1) full retirees who had no intention of working in retirement, and (2) full retirees who were unsuccessful in finding postretirement work. To illustrate these differences, we calculated the predicted probability of informal caregiving (Figure 2A), volunteering (Figure 2B), and grandparenting (Figure 2C) by indicators of this refined retirement measure (for the other variables, the models were similar to those reported in Table 3). This refined measure of full retirement provides similar findings for the likelihood of informal caregiving and grandparenting at follow-up. Volunteering, however, differed between the two types of full retirees. Full retirees who were unsuccessful in finding postretirement paid work had the highest probability of volunteering (45%) of all groups.

Discussion

Informal caregiving, formal volunteering, and grandparenting are common, unpaid productive activities for

Table 3. Conditional Change Models for Status and Hours of Engagement

	Model 1: engagement status ^a						Model 2: engagement hours ^b					
	1a: caregiving		1b: volunteering		1c: grandparenting		2a: caregiving		2b: volunteering		2c: grandparenting	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Retirement (ref. career job)												
Postretirement job	-0.13	0.14	0.22	0.16	0.57***	0.16	0.17	0.68	1.24	0.64	0.67	0.49
Full retirement	0.14	0.08	1.17***	0.10	0.46***	0.10	0.81	0.50	2.94***	0.53	2.28***	0.40
Controls baseline												
Age	-0.01	0.03	0.07*	0.03	-0.03	0.03	-0.10	0.15	0.16	0.17	-0.03	0.13
Female	0.09	0.08	-0.09	0.09	0.35***	0.10	0.20	0.62	0.08	0.46	1.15**	0.42
Partner	0.30***	0.09	0.07	0.11	0.24	0.12	-1.54*	0.66	0.11	0.52	0.44	0.51
Health	-0.09*	0.04	0.09*	0.04	0.13**	0.05	-0.06	0.22	-0.15	0.20	-0.33	0.22
Wealth (log)	0.00	0.00	0.00	0.00	0.00**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fulltime	0.03	0.08	-0.22*	0.09	0.12	0.10	-0.38	0.53	1.07*	0.44	0.55	0.37
Occupational status	0.07*	0.04	0.19***	0.04	-0.05	0.05	-0.14	0.22	-0.07	0.21	0.14	0.16
Social work sector	-0.13	0.09	0.35***	0.10	-0.19	0.11	-0.10	0.62	0.20	0.52	0.29	0.45
Status at baseline												
Caregiving	1.42***	0.07	0.11	0.08	0.17	0.09			0.12	0.38	0.11	0.32
Volunteering	0.17*	0.09	2.73***	0.1	-0.02	0.11	0.07	0.39			-0.05	0.39
Grandparenting	0.21*	0.09	-0.24*	0.11	2.47***	0.10	-0.48	0.59	-0.02	0.51		
No grandchildren ^c	0.22**	0.08	-0.17	0.09	0.95***	0.11	0.10	0.58	0.90	0.47		
Hours at baseline												
Caregiving							0.54***	0.08				
Volunteering									0.58***	0.06		
Grandparenting											0.48***	0.05
Constant	-0.80	1.54	-6.91***	1.79	-0.48	1.85	9.92	9.48	-8.49	10.47	5.23	7.80
Observations	4882		4882		3183		743		630		1021	
(Pseudo-) R ²	.09		.24		.20		.25		.31		.26	

Notes: ^aModels are logistic regression models. ^bModels are linear regression models and restricted to respondents that engage in the respective activity at both waves. ^cReference category is "not grandparenting."
 p* < .05. *p* < .01. ****p* < .001.

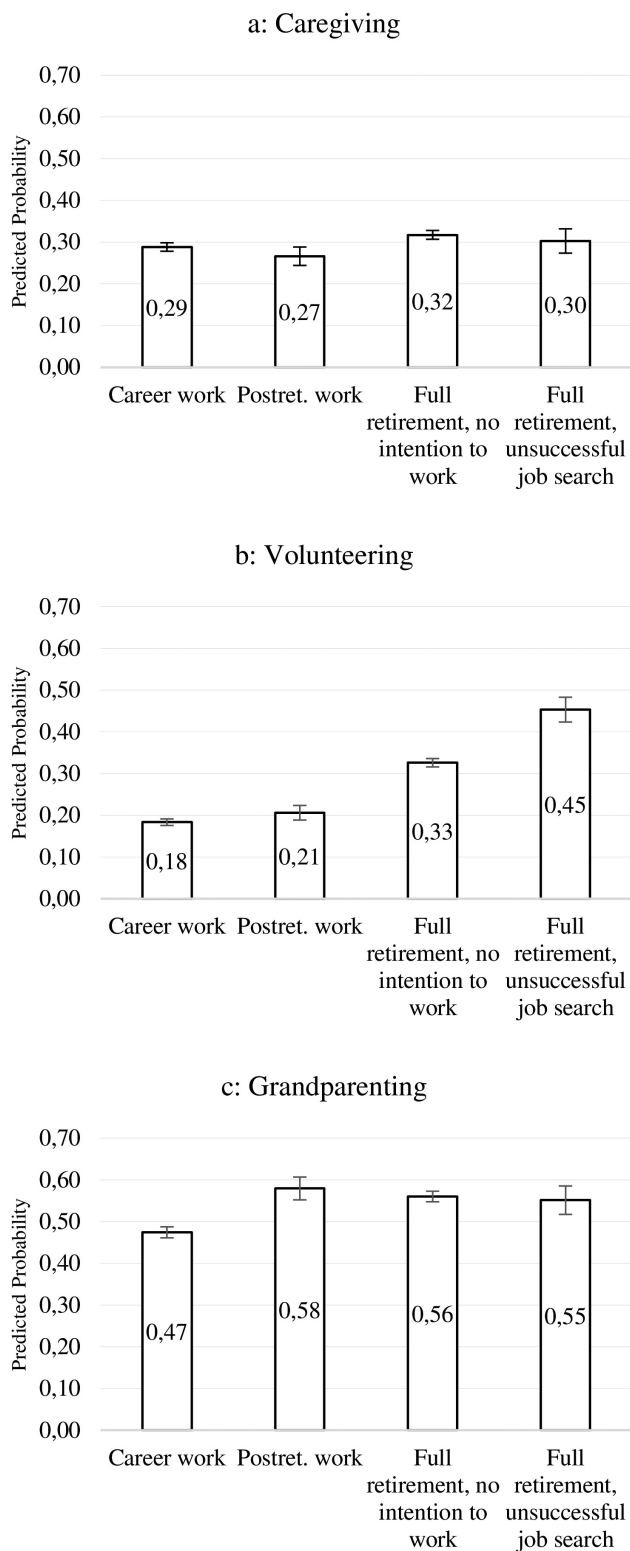


Figure 2. Predicted probabilities for unpaid productive activities (caregiving, panel a; volunteering, panel b; grandparenting, panel c) at baseline and follow-up by refined retirement status indicators.

retirees. Most research on these activities views retirement as a permanent exit from the workforce (e.g., Mutchler et al., 2003), as opposed to a process in which some fully

retire, while others continue to work after a career job (Beehr & Bennett, 2015). This study examined how the retirement process relates to engagement in unpaid productive activities using two-wave panel data. Unlike most previous research, we took the diversity of the retirement process into account by distinguishing full retirees from working retirees. Our results demonstrated that older adults with different retirement processes engage in unpaid productive activities differently.

First, we found that neither full retirement nor postretirement work increased the likelihood of, or the hours dedicated to, providing informal care, in comparison to continuous career employment. This finding does not support our hypothesis that caregiving serves as a time substitution in retirement. Even though individuals gained free time when they retired, their engagement and hours involved in caregiving remained unchanged. These findings support the idea that caregiving is primarily demand-driven and takes place in response to the needs of a dependent family member or friend (e.g., Broese van Groenou & de Boer, 2016). Our results suggest that time constraints imposed by paid work are irrelevant for whether older adults engage in caregiving. Combining paid work and informal care during later working life can, however, be more burdensome and stressful (Grünwald et al., 2020) and might be overwhelming, especially with additional care obligations to grandchildren (Železná, 2018). As older adults are increasingly expected to extend their working lives as well as provide informal care, this dual role combination may affect their well-being.

Second, we found that full retirement is associated with an increased likelihood of volunteering, whereas postretirement work was not. This finding supports our hypothesis that volunteer work serves as a weak-tie replacement in retirement. Volunteering may be a way to replace the professional ties that full retirees lose (van Tilburg, 2003). Working retirees, in contrast, maintain weak ties in their postretirement work and refrain from increasing engagement in voluntary work. A closer look at full retirement shows that volunteering differs by work-seeking behavior after retirement. Full retirees who are unsuccessful in finding postretirement paid work are most likely to volunteer. Taken together, our findings suggest that retirees' engagement in postretirement work competes with volunteering. As many older adults work longer in career and postretirement jobs, they might be less available for formal volunteering. Organizations that rely on volunteers might struggle to attract older adults, who increasingly remain in paid work longer.

Third, we found that full retirement and postretirement work is linked to a higher likelihood of grandparenting. It appears that paid work in retirement did not discourage retirees' grandparenting. This finding supports our hypothesis that grandparenting serves as a way for role making in retirement. Grandparenting is a new, central role that individuals are likely to assume after leaving their career job.

How they experience the grandparenting role, especially next to other care obligations, is an important question for future research. We also found that retirement has a weaker effect on grandparenting for women than for men, which may reflect a stronger need among men for role making after retirement. This finding is in line with previous research suggesting that retirement creates an opportunity for men to “catch up” with their family role (Szinovacz & Davey, 2001).

Our comprehensive approach to examine grandparenting, alongside informal caregiving and formal volunteering, has allowed us to theoretically disentangle the different mechanisms that link retirement to engagement in unpaid productive activities. Weak-tie replacement and role making appear to be distinct theoretical mechanisms for understanding changes in engagement in unpaid activities upon retirement. Our findings suggest that working retirees resemble workers in career jobs with regard to their involvement in volunteering, but are similar to full retirees in grandparenting. Future research might consider a direct examination of the processes that underlay these relationships (e.g., by measuring the perceived loss of weak ties upon retirement).

Some limitations should be considered when interpreting these findings. First, our measure of informal caregiving includes various caregiving activities to different persons, but lacks information on care demands. Second, we examine engagement in unpaid productive activities using data that were collected among working older adults aged 60–65 years at baseline. Retirement before these ages is extremely rare in the Netherlands. This age range restricted us from observing patterns of engagement in the unpaid activities of working adults before age 60. In anticipation of retirement, some older workers might already have increased their engagement in unpaid productive activities before our baseline measure (Cook, 2015). Third, this study takes place in the Netherlands, which may limit the generalizability of the findings. The Netherlands has one of the highest rates of participation in formal volunteering in Europe, but lower rates of informal caregiving and grandparenting (European Commission, 2019).

Understanding how retirement shapes older adults' engagement in unpaid productive activities has policy relevance. Policymakers across Western countries promote social engagement in later life. At the same time, they implement policies intended to extend working lives (European Commission, 2019). Our findings indicate that these policy aims may compete with one another. Increasing participation in postretirement work will likely result in more older adults combining paid work with informal care and grandparenting but will likely reduce the number of older volunteers.

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Conflict of Interest

None declared.

Author Contributions

O. Grünwald wrote the main part of the paper and performed the statistical analyses. K. Henkens and M. Damman substantially contributed to the manuscript. The authors jointly developed the idea and design of the study.

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