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General and proximal associations between unpaid eldercare, time constraints and subjective well-being

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Abstract

Using 2012/13 American Time Use Survey, we find as compared to non-caregivers, caregivers report less time on personal care, social activities and sports and more time on housework. They also report higher stress and lower happiness when engaged in daily activities. Further, using diary information which captures activities during a 24-hour window, we compare caregivers on days they provide care and caregivers on days they do not provide care. Caregivers report more time on housework and less on paid work, and higher levels of sadness when engaged in daily activities. This highlights proximal effects of informal caregiving, even for individuals already engaged in regular caregiving.

Keywords

eldercare; time use; subjective mood; time constraints

INTRODUCTION

Research has shown that providing care is associated with caregivers' well-being (Amirkhanyan and Wolf 2006; Borg and Hallberg 2006; Feld et al. 2010; Fingerman et al. 2010; Lin et al. 2012; Marks 1998; Moen, Robison, and Dempster-McClain 1995; Pavalko and Woodbury 2000; Pinquart and Sörensen 2003; Robison et al. 2009; Ruppanner and Bostean 2014; Schulz et al. 1995; Wakabayashi and Donato 2006). This issue may become more pressing given the aging population and the fact that caregiving continues to fall on the shoulders of informal care providers, comprising family members and friends. In the U.S. in 2011, more than one in ten people were 65 years old and over. According to the Census Bureau, this number is expected to increase to about one in five people by 2030. These older adults are likely to require assistance with everyday activities, including a number of tasks ranging from home maintenance, cleaning, shopping and running errands, as well as needing emotional support (AARP 2015).

According to a report by the Bureau of Labor Statistics in 2012, sixteen percent of the population aged 15 years and over provided unpaid eldercare. This figure amounts to 39.6 million people. While these individuals may not provide care daily, according to the report,

nearly a quarter (23%) of eldercare providers are engaged in caregiving on any given day for an average of 3.2 hours. A disproportionate number of eldercare providers are also from a specific demographic group; that is, the majority are women (56%) between the ages of 45 and 64. As such, many of these individuals provide care and participate in the labor force at the same time. More than one in five (22%) eldercare providers also live with children under 18 years of age. Half of the eldercare providers have provided care for two years or less, suggesting the effects of caregiver burden and high turnover as well as possibly care provided at the end stages of the care recipient's life.

The well-being of caregivers is an important area of focus, as there is a risk that poor health gives rise to a cycle whereby unwell caregivers are unable to manage the care of recipients' needs or their own (Barnett 2015). One mechanism through which caregivers may experience poor health is time constraints, as caregiving pulls them away from time spent on other activities such as self-care. Alternatively, engaging in the act of caregiving may shape caregivers' experiences of daily activities, influencing their subjective mood, with implications for their well-being.

Caregiving and subjective well-being

In this paper, we focus on the provision of care to a person who is over the age of 65. Longitudinal studies find that caregiver health and well-being worsens over time, and this is especially true when caregivers lack support, time, and financial resources (Kim & Knight 2008; Lee & Gramotnev 2007; Robison et al. 2009; Wakabayashi & Donato 2006). The scholarly literature has also highlighted the time demands faced by informal eldercare providers, especially those who are simultaneously balancing responsibilities such as paid employment, childcare or assisting dependent adult children (Grundy and Henretta 2006; Marks 1998; Rozario, Morrow-Howell and Hinterlong 2004). In addition to facing time constraints, caregivers are more likely to engage in negative health behaviors, which may also contribute to lower levels of well-being (Hoffman et al. 2012).

While time constraints may influence caregiver stress, the caregiving experience may also play a role. For instance, the act of caregiving may have spillover effects on one's experiences in other activities, coloring his/her subjective emotions and mood throughout the day. This is consistent with the literature on spillover, highlighting the transmission of mood from one domain to another (Grzywacz, Almeida, and McDonald 2002). Bolger, DeLongis, Kessler and Wethington (1989) also highlighted the contagion of stress across multiple roles and the importance of examining stress processes across day-to-day events and activities.

In addition, caregiving has been found to go beyond the practical act of caring and its associated time demands to also include 'emotional work' (Mac Rae 1998). In her qualitative study of family caregivers to persons with Alzheimer's disease, Mac Rae (1998) finds that caregivers often engage in emotional management, navigating their own emotions during interactions with the care recipient and reminding themselves that the (negative) actions of the care recipient are the result of the disease rather than the person.

At the same time, some have also argued that caregiving may constitute an intrinsic reward for the caregivers. Studies highlight that caregivers may consider the act of helping a loved

one to be a meaningful and positive experience, leading to higher self-esteem (Noonan & Tennstedt 1997) and positive affect (Robertson et al. 2007). Therefore, when the act of caregiving is viewed as its own reward, caregivers may report better moods and positive emotional well-being.

In this paper, we address the following research questions:

1. How does time use differ between adults engaged in regular informal eldercare (defined as at least once a week) from those not engaged in any such caregiving? In other words, how do caregivers compensate for the time spent on caregiving? In addition, what is the association between providing regular eldercare and caregivers' subjective emotions during their daily activities?
2. Comparing regular caregivers on days in which they provided care versus caregivers on days in which they did not provide care, do their time use and subjective mood differ? This tests whether regular caregivers may have become habituated to their role as a caregiver. If so, we may expect to find no differences on days they provide care versus days they do not provide care.

DATA & METHODS

Data used in this paper is from the American Time Use Survey (ATUS). ATUS is an ongoing time diary study funded by the U.S. Bureau of Labor Statistics and fielded by the U.S. Census Bureau. Since 2003, the survey has been conducted annually. The sample comprises a subset of households that previously participated in the Current Population Survey (CPS). The CPS is a monthly household survey of the civilian, non-institutionalized population. One member of each selected household is randomly assigned to complete a time use diary and report all of the activities performed over a 24-hour cycle from 4 am one day to 4 am the next day. Sociodemographic information on the respondent and other household members is also collected. We use the version provided by the American Time Use Survey Extract-Builder-ATUS-X (Hofferth et al. 2013).

In addition to the time use diary, specific modules are included in the survey to gather information about a particular topic annually. Since 2011, information about care or assistance provided to an adult has been included. This extends to information regarding care provisions for reasons of aging¹ in the 3 months prior to the survey, not including financial support or paid work. Hence, these individuals are unpaid, rather than paid, caregivers. More concretely, after completing their 24-hour diary, respondents are asked, "Not including financial assistance or help you provided as part of your paid job since the 1st of (3 months before), have you provided any care or assistance for an adult who needed help because of a condition related to aging?"

¹According to the ATUS questionnaire, a condition related to aging is an ongoing ailment or physical or emotional limitation that typically affects older people. Examples may include becoming more frail; having difficulty seeing, hearing, or physically moving; becoming more forgetful; tiring more quickly; or specific medical ailments that are more common among older adults. It also refers to existing conditions that become progressively worse as one ages.

When the respondent reports that he or she has provided care, he/she is also asked about the frequency and the number of recipients he/she provided care for, as well as the care recipient's age, gender, relationship and duration of care. We have also carried out analyses examining differences by caregiver gender and caregiver-care recipient relationship. We find no gender differences and also find that the pattern of results is similar when examining by the different relationships between the care provider and care recipient. However, we find a stronger relationship with well-being for those providing care for a parent or parent-in-law (not shown; available from authors).

After asking about the characteristics of the care provision and eldercare recipients, the respondents are asked, "Did you provide any care or assistance yesterday?" This question provides a glimpse into which respondent actually provided eldercare care during the day that the time diary was completed. Further, we are able to examine the times, duration and whether eldercare was a primary or secondary activity. The latter is assessed through respondents' reports of engaging in other activities while providing eldercare. The only two exceptions are for caregivers' engagement in personal care activities and personal care services. For a full list of all of the possible activities respondents could be engaged in, please refer to Appendix A. In our regression models, we control for these factors, such as time and duration of care, and whether eldercare was a primary or secondary activity.

Given our focus on eldercare in this paper, we only include respondents who report that at least one of the recipients is 65 years old or older. For this reason, 887 respondents were removed from our sample. Additionally, given our interest in regular caregiving, we limit our definition of care providers to respondents who provide eldercare daily or at least once a week. This definition constitutes 61.7% of respondents who provide at least some eldercare to a person 65 years old and over. The remaining 1,428 respondents report providing care monthly, or occasionally, and thus have also been removed from the sample. As a result, the category of non-provider (our reference group) is composed of individuals who did not provide any eldercare for a person 65 years old and over in the last 3 months, while the category of provider includes those who provided eldercare at least weekly for a person 65 years old and over in the last 3 months. We have also carried out analyses without these exclusions; the pattern of results is similar to that presented here (not shown; available from authors).

In 2012 and 2013, a well-being module was included in the survey. In this module, respondents were asked to report their subjective mood in terms of happiness, pain, tiredness, sadness and stress for 3 randomly selected activities during the 24-hour window (see Lee et al. 2016). These variables were measured on a 7-point scale from 0 to 6, with 0 being the lowest level of reported mood and 6 being the highest. Of the remaining respondents in our sample, 1,491 did not answer the well-being module. Preliminary analyses reveal that the characteristics of these respondents do not differ from respondents in our analytic sample. The final sample is composed of 19,523 individuals.

For the analysis, we created two files: one at the respondent level ($n = 19,523$) and one at the activity level. In the respondent-level file, each row corresponds to one individual. In the activity-level file, called an event or episode file, each row corresponds to one activity from

the diary of activities (Lee et al. 2016). Because respondents engage in many activities during the day, they may have multiple activity records. Well-being information is asked about a maximum of 3 randomly selected activities from each respondent. In our sample, 19,037 individuals report well-being measures for all 3 activities: 458 report 2 activities, and 28 report only 1 activity. In total, 58,055 cases are included in the activity-level file.

For each individual, we also control for socio-demographic characteristics that may affect well-being and time (Haas, 2007; Lee et al. 2016). The included sociodemographic characteristics are age, gender, health, education, marital status, race, employment status and the presence of children in the household.

ANALYSIS PLAN

Our study examines two outcomes measures. The first outcome is obtained from the respondent-level file and draws on reported time in the four activities (in personal care, social activities and sports, housework and employment). This examines whether being engaged in eldercare may be associated with more or less time in other activities. For the second outcome, we use the activity-level file and draw from reported subjective mood in up to three randomly selected activities during the respondent's diary day. In both cases, we first compare care providers with those who provide no eldercare. In a second step, after limiting our analysis to respondents who provide eldercare at least once a week, we compare those who provided care on their diary day versus those who did not provide care on their diary day.

We first describe our sample along various demographic characteristics (Table 1). We then examine the bivariate association between caregiver status and time spent on selected activities (Table 2). Next, we use multivariate regression models to examine whether caregiving is associated with time spent on personal care, social activities and sports, housework and employment, comparing weekly caregivers with those who do not provide eldercare (Table 3). We then analyze the association between caregiving and respondents' mood in their daily activities, comparing weekly caregivers with those who do not provide eldercare (Table 4). In this paper, we also compare weekly caregivers on days in which they provided care with weekly caregivers on days in which they did not provide care (Tables 5 and 6). For the analysis pertaining to respondents' mood, we cluster standard errors at the respondent level, as there may be more than one observation per individual.

DESCRIPTIVE RESULTS

Differences between care providers and non-providers

In Table 1, we report the main socio-demographic characteristics of eldercare providers compared to individuals who do not provide any eldercare. Eleven percent of our sample report providing unpaid daily or weekly eldercare for a person aged 65 years and older in the 3 months prior to the survey. We find that women, older respondents and married respondents constitute a larger proportion of eldercare providers in our sample. Eldercare providers also tend not to have children in the household. However, in our analytic sample, we find no differences in race, employment status and self-rated health.

Eldercare providers and non-providers' well-being and time use

Table 2 reports on providers' and non-providers' time spent on selected activities. Eldercare providers report 0.4 fewer hours per day engaged in personal care and 0.3 fewer hours engaged in social activities, which are equivalent to approximately 24 and 18 minutes, respectively. They also report spending 0.4 hours (24 minutes) more performing housework.

MULTIVARIATE MODELS

Eldercare providers and time

In Table 3, we present the coefficients from OLS models on time spent on different activities. Each model corresponds to one group of activity. The results partly confirm the information reported in Table 2. When we control for sociodemographic characteristics, eldercare providers spend less time in personal care, social activities and paid work, and they spend more time in housework. Eldercare providers spend approximately 0.278 fewer hours (=17 minutes) per day in personal care ($p<0.001$), 0.222 fewer hours (=13 minutes) in social activities ($p<0.05$) and 0.0184 fewer hours (=11 minutes) in paid work ($p<0.1$). They also spend 0.199 more hours (=12 minutes) engaged in housework ($p<0.01$).

Eldercare providers and mood

In Table 4, we present results for measures of mood during daily activities, controlling for sociodemographic characteristics, main activity and duration. Here, we observe that eldercare providers report higher stress and lower happiness during randomly selected daily activities. On a scale from 0 to 6, being an eldercare provider is associated with 0.192 points higher for level of stress ($p<0.01$). Eldercare providers also report -0.405 points lower happiness in daily activities ($p<0.001$).

Eldercare providers and their time and mood on days providing care

In this section, we are interested in differences in time spent on selected activities and in mood between eldercare providers who provided care on the diary day and those who did not. Therefore, in the following models, the sample is limited to eldercare providers. For time spent on selected activities, eldercare providers on the diary day reports almost 0.8 hours less in paid work ($p<0.001$) and 0.406 more in housework ($p<0.01$). This second result is especially relevant because it suggests that eldercare providers must multitask when they provide eldercare. Multitasking is usually associated with an increase in negative emotions, stress and psychological distress (Offer and Schneider, 2011).

Regarding mood, we observe that eldercare providers report higher levels of sadness if they provided eldercare on the diary day. We observe 0.216 points higher ($p<0.05$) for sadness. For comparison, in the same model, we observe that respondents who report "good" health compared to "bad" health report approximately 0.8 points lower for sadness (not shown; available from authors). For other subjective moods, we do not observe differences in pain, tiredness and happiness, but significant differences are found for stress at $p<0.1$, with 0.293 points higher for stress level if respondents reported providing eldercare on their diary day.

CONCLUSIONS

In this paper, we investigate the relationship between the provision of informal eldercare with time constraints and subjective mood. While existing literature has investigated possible mechanisms linking eldercare and subjective well-being, we take advantage of a unique dataset to examine whether this relationship may be explained by eldercare providers' time spent on various activities and their mood during selected activities throughout the day.

Our study extends the existing literature in two different directions: 1) we consider time spent on various activities as one way to understand how caregivers may be affected by providing care, and 2) we examine subjective mood in daily activities as another explanatory factor, testing whether eldercare providers experience spillover effects from providing eldercare on other daily activities. As the population ages and more informal care needs are expected, a further understanding of the link between eldercare and well-being may become increasingly important, as it could provide insight into interventions that would alleviate caregiver stress.

Currently existing interventions may have different goals (Sörensen et al. 2002). For instance, on one hand, psychoeducational interventions are aimed at providing resources to caregivers, equipping them with knowledge and information regarding disease-related problems to adequately respond to any issue (Brodaty and Gresham 1989; Chiverton and Caine 1989; Gallagher-Thompson et al. 2001; Ostwald et al. 1999). On the other hand, supportive interventions are focused on providing either professional or peer support networks for caregivers, as well as opportunities for caregivers to voice and address their issues and experiences around caregiving (Demers and Lavoie 1996). Many studies have also highlighted the value of respite care, as it provides caregivers with time off from their care tasks (Kosloski and Montgomery 1993; Lawton, Brody and Saperstein 1989).

This study has various limitations due to the dataset we used. First, our study cannot infer causality between being an informal eldercare provider and the eldercare provider's subjective mood. Cross-sectional data only allows for detecting associations between variables, which cannot be extrapolated to causal effects between independent and dependent variables. Selection effect is also a concern since healthier individuals tend to provide eldercare. We attempt to rectify this issue by controlling for respondents' self-reported health. Further, we also select individuals who already provide eldercare at least once a week and compare their subjective mood on days they provide care versus other caregivers on days they do not provide care.

We also acknowledge that some respondents may engage in multiple forms of care. It would be fruitful to consider other types of care activities. However, ATUS does not provide a similar module on childcare. Nevertheless, we control for children in the household in an attempt to gauge the likelihood of providing childcare. In sum, our findings point to the fact that eldercare providers have a more negative perception of their mood during (three randomly selected) daily activities. On average, they report higher levels of stress, more pain and lower happiness during daily activities compared to those who do not provide any

eldercare. Further, on days they provide care, they also report higher levels of sadness. This suggests that care providers' mood may be influenced by their proximal experience of providing care for an elderly person, another explanation for caregiver strain.

Our finding that eldercare providers also spend less time in personal care, as well as social activities and sports points to the value of respite care. Although perhaps a short-term solution, respite care generally provides caregivers an opportunity to attend to everyday activities and could provide a break ranging from days to weeks. The finding that informal eldercare providers report higher levels of stress and pain during daily activities indicates other ways that caregivers may benefit from support interventions. Our findings also highlight both general and proximal strain associated with informal caregiving. Further research that unpacks both context and mechanisms in which the caregiver role and act of caregiving may affect family caregivers would be especially important.

Appendix A. List of Main Activities

Code	Activity
1	Personal care
2	Household Activities
3	Caring for and Helping Household Members
4	Caring for and Helping Non-Household Members
5	Work and Work-Related Activities
6	Education
7	Consumer Purchases
8	Professional and Personal Care Services
9	Household Services
10	Government Services and Civic Obligations
11	Eating and Drinking
12	Socializing, Relaxing, and Leisure
13	Sports, Exercise, and Recreation
14	Religious and Spiritual Activities
15	Volunteer Activities
16	Telephone Calls
18	Traveling
50	Data Codes

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Table 1

Sample description

	Providers		Non-providers		sig.
	N	%	N	%	
N	2153	11	17370	89	
	19523				
Sex					
Male	818	38.0	8765	44.9	***
Female	1335	62.0	10758	55.1	***
Age					
Mean	52.2		47.6		
<30	210	9.8	3007	17.3	***
30–49	648	30.1	6715	38.7	***
50–64	829	38.5	4034	23.2	***
65+	466	21.6	3614	20.8	
Marital Status					
Married	1119	52.0	8290	47.7	***
Widowed	177	8.2	1605	9.2	
Divorced or separated	390	18.1	3013	17.4	
Never married	467	21.7	4462	25.7	***
Education					
Less college	752	35.0	7051	40.6	***
Some college	1401	65.0	10319	59.4	***
Race					
White	1727	80.2	13711	78.9	
Non-white	426	19.8	3659	21.1	
Employment Status					
Employed	1296	60.2	10393	59.8	
Unemployed	100	4.7	903	5.2	
Not in labor force	757	35.1	6071	35	
Children in the household					
No children	1546	71.8	11266	64.9	***
Children, youngest 0–2 years old	92	4.3	1702	9.8	***
Children, youngest 3–5 years old	82	3.8	1258	7.2	***
Children, youngest 6–17 years old	433	20.1	3144	18.1	*
Health					
Poor	400	18.6	3103	18.6	
Good	1753	81.4	14267	51.4	

Source: Authors' calculations from 2012–2013 ATUS data obtained from ATUS-X (Hofferth et al., 2013).

1
p>0.1
+
*
p<0.05,
*
p<0.01
**
p<0.001

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Table 2

Time spent on selected activities

Measures	Total	Eldercare providers	Non-providers	Sig
Time variables (Hours per day)				
Personal care	9.6 (2.4)	9.3 (2.2)	9.7 (2.4)	***
Social activities and sports	5.4 (3.6)	5.2 (3.4)	5.5 (3.7)	**
Household activities	1.9 (2.3)	2.3 (2.4)	1.9 (2.3)	***
Work (only employed)	4.2 (4.4)	4.0 (4.4)	4.2 (4.4)	

Source: Authors' calculations from 2012–2013 ATUS data obtained from ATUS-X (Hofferth et al., 2013).

p<0.001,**
p<0.01,*
p<0.05,+
p<0.1

Table 3

Multivariate Regressions Models for Time Spent on Selected Activities (Hours per day)

Variables	Personal care	Social activities and sports	Housework	Work
Eldercare provider	-0.278 *** (0.061)	-0.222 * (0.094)	0.199 ** (0.070)	-0.184 + (0.102)
Constant	9.929 *** (0.124)	5.095 *** (0.161)	0.499 *** (0.085)	5.108 *** (0.169)
Observations	19,523	19,523	19,523	19,523
R-Squared	0.072	0.197	0.126	0.356

Source: Authors' calculations from 2012–2013 ATUS data obtained from ATUS-X (Hofferth et al., 2013).

p<0.001,**
p<0.01,*
p<0.05,+
p<0.1

Control variables: age, gender, health, education, employment status, race, marital status, own children at home

Table 4

Multivariate Regressions Models for Mood during Activities, for Regular Eldercare Providers (Scale 0–6)

Variables	STRESS	PAIN	TIRE	HAPPY	SAD
Eldercare provider	0.192 ⁺ (0.084)	-0.018 (0.073)	0.081 (0.100)	-0.405 ^{***} (0.114)	-0.108 ⁺ (0.060)
Constant	3.286 ^{***} (0.539)	3.324 ^{***} (0.290)	5.013 ^{***} (0.621)	4.519 ^{***} (1.178)	2.467 ^{***} (0.498)
Observations	58,055	58,055	58,055	58,055	58,055
R-squared	0.013	0.027	0.010	0.010	0.011

Source: Authors' calculations from 2012–2013 ATUS data obtained from ATUS-X (Hofferth et al., 2013).

p<0.001,**
p<0.01,*
p<0.05,+
p<0.1

Control variables: age, gender, health, education, employment status, race, marital status, own children at home, main activity, duration of the activity.

Table 5

Multivariate Regressions Models for Time Spent on Selected Activities for Eldercare Providers, on days they provided care (Hours per day)

Variables	Personal care	Social activities and sports	Housework	Work
Eldercare provider day of questionnaire	−0.047 (0.116)	−0.099 (0.190)	0.406 ^{**} (0.154)	−0.823 ^{***} (0.189)
Constant	10.496 ^{***} (0.308)	4.743 ^{***} (0.418)	0.843 ^{**} (0.326)	3.519 ^{***} (0.472)
Observations	2,153	2,153	2,153	2,153
R-squared	0.071	0.175	0.118	0.359

Source: Authors' calculations from 2012–2013 ATUS data obtained from ATUS-X (Hofferth et al., 2013).

p<0.001,

**
p<0.01,

*
p<0.05,

+
p<0.1

Control variables: age, gender, health, education, employment status, race, marital status, own children at home, main activity, duration of the activity.

Table 6

Multivariate Regressions Models for Mood during Activities for Eldercare Providers, on days they provided care (Scale 0–6)

VARIABLES	SCSTRESS	SCPAIN	SCTIRED	SCHAPPY	SCSAD
Eldercare provider day of questionnaire	0.293 ⁺ (0.165)	0.030 (0.145)	0.344 (0.226)	0.055 (0.237)	0.216 [*] (0.103)
Constant	2.491 ^{***} (0.545)	3.121 ^{***} (0.532)	4.661 ^{***} (0.532)	2.513 ^{**} (0.894)	1.586 ^{***} (0.442)
Observations	6,405	6,405	6,405	6,405	6,405
R-squared	0.032	0.056	0.022	0.015	0.021

Source: Authors' calculations from 2012–2013 ATUS data obtained from ATUS-X (Hofferth et al., 2013).

^{***} p<0.001,

^{**} p<0.01,

^{*} p<0.05,

⁺ p<0.1

Control variables: age, gender, health, education, employment status, race, marital status, own children at home, main activity, duration of the activity.