Labour Economics 24 (2013) 305–322

Contents lists available at ScienceDirect

Labour Economics

journal homepage: www.elsevier.com/locate/labeco

Health and the double burden of full-time work and informal care provision — Evidence from administrative data ☆

Hendrik Schmitz [a,b], Magdalena A. Stroka [c,d,e,*]

[a] University of Duisburg-Essen, Germany
[b] CINCH, Germany
[c] Ruhr-University Bochum, Germany
[d] RWI, Germany
[e] WINEG, Germany

HIGHLIGHTS

- We analyze the relationship between full-time work, informal care provision and health.
- We use a unique administrative data set from the second largest German sickness fund.
- Care provision and full-time work goes along with increased intake of antidepressants and tranquilizers.
- Hardly any effects are found for the physical health status.

ARTICLE INFO

Article history:
Received 24 July 2012
Received in revised form 16 September 2013
Accepted 19 September 2013
Available online 2 October 2013

JEL classification:
I10

Keywords:
Informal care
Double burden
Drugs
Fixed-effects
Administrative data

ABSTRACT

We analyze the relationship between health and the double burden of both informal care provision and full-time work using administrative data from the second biggest German sickness fund. We have information on more than 7000 caregivers over a period of three years and apply linear panel data and two-part models. As outcome measures we use detailed information on the prescription of five types of drugs. We find that individuals who provide care and also work full-time have a significantly higher consumption of antidepressant drugs and tranquilizers than those who work only. This is mostly driven by an increase in the extensive margin of drug intake.

1. Introduction

The ongoing demographic change imposes serious challenges on countries all over the world. Among these challenges are two that are constantly gaining public attention. First, aging societies run short of working-age citizens. Until 2050 the old-age dependency ratio – the number of individuals older than 65 as a percentage of those between 15 and 64 – in Europe will increase from 26% to 50% (European Commission, 2009). This is particularly problematic for many European countries that have pay-as-you-go schemes in most parts of their social security systems as the number of contributors decreases while the number of benefit recipients increases. As one consequence, the European Employment Strategy set up by the European Council in 2000 aims at increasing the labor-force participation, particularly of women, to fill the expected gaps in the workforce. A second issue coming along with the demographic change is the increasing number of elderly in need of care. This is certainly putting a high pressure on each country's health and long-term-care insurance system. Typically, both the governments and the care recipients prefer informal home care by family members over institutionalized care in nursing homes. The former group because it is the relatively cheaper way of providing

☆ We thank an anonymous referee for suggestions that improved the paper substantially. Helpful comments by Thomas K. Bauer, Arndt R. Reichert, and participants of the Annual Meeting of the dggö (Konstanz), the ESPE (Bern), the EALE (Bonn) and ESAM (Sydney) are gratefully acknowledged. We are grateful to our colleagues from the WINEG for the access to the data of the Techniker Krankenkasse.
* Corrensponding author at: Ruhr-Universität Bochum, Universitätsstr. 150, 44801 Bochum, Germany. Tel.: +49 234/32 26969.
E-mail address: Magdalena.Stroka@rub.de (M.A. Stroka).

0927-5371/$ – see front matter
http://dx.doi.org/10.1016/j.labeco.2013.09.006

care relieving the social long-term care insurances that are often under financial pressure.[1] The latter because they often reach a higher level of well-being if they can stay in their familiar environment and receive care by their family members. Thus, an increasing demand for long-term care can be expected to go along with an increasing demand for informal home care, mostly provided by working-age women between 35 and 65 years.

These two implications – increased labor force participation and increased informal care provision of women – seem to be two conflicting policy goals. There is a large literature on the employment effects of informal care provision. Typically, the empirical effects of care provision on employment are fairly small, see, e.g. Bolin et al. (2008), Carmichael and Charles (1998, 2003), Ciani (2012), Heitmueller (2007), Heitmueller and Inglis (2007), or Meng (2012b). Crespo and Mira (2010) find negligible effects in northern and central European countries but significant ones in southern countries. In total, the evidence suggests that working individuals largely keep their jobs when they are faced with the need to provide informal care.[2] Most likely, many individuals either do not have the opportunity to reduce working hours or they are not willing to do so. Moreover, the duration of care provision is usually not predictable at the start of the care episode. This information uncertainty may cause caregivers to be reluctant to give up their job.

Health effects of informal care provision are much less discussed in the economic literature.[3] If so, a broader measure of health, well-being, is often employed. While Bobinac et al. (2010) find that caregiving has a negative effect on well-being, Leigh (2010) confirms the negative effect of caregiving on life satisfaction only in the case of cross-sectional analysis and does not find significant effects when using panel data methods. Coe and Van Houtven (2009) find evidence for negative effects on carers' mental health, especially in the case of women, while the effects on physical outcomes (heart condition and high blood pressure) are insignificant for both sexes. Van den Berg and Ferrer-i-Carbonell (2007) estimate the monetary value of informal care based on the impact that providing care has on individual well-being. Closest to our study in terms of outcome variables is the one by Van Houtven et al. (2005). They find that, in a large sample of caregivers in the U.S., higher care intensity goes along with an increased drug consumption.

Providing informal care is typically both physically and emotionally demanding. So far, the literature has neglected that negative health effects of caregiving may be boosted if individuals work full-time in the labor market. We fill this gap in the empirical literature by analyzing the relationship between health and this double burden. We make use of a large administrative dataset provided by the Techniker Krankenkasse (TK), the second biggest statutory health insurer in Germany with more than eight million insured. The data cover the years 2007–2009 and, thus, allow to control for time invariant unobserved heterogeneity using panel-data regression methods. Among the two million individuals in the final estimation sample we can identify 7,145 who provide informal care (12,208 observations in person-year form). The rich dataset includes detailed information on socio-economic and health characteristics like certain diagnoses (e.g. diseases of the liver or stroke). Moreover, it entails information on the drug intake of the insured.

As an objective measure of the caregiver's health status we use prescribed doses of drugs of five different types. The use of prescribed drugs instead of diseases as health outcomes has the advantage of more detailed information on the magnitude of health impairments. The first two drugs (antidepressants and tranquilizers) shed light on the mental health status while the other three (analgetics, cardiac and gastrointestinal agents) can be seen as measures of the physical health status. Using panel data and two-part methods, we regress prescribed amounts of each of the five drugs on indicators of care provision, full-time-work and interactions of both that indicate the double burden. We are also able to account for different care levels (levels 1 to 3) that indicate the health status of the care recipient and, therefore, the burden for the caregiver. Since the literature suggests gender differences in the provision of informal care (see, e.g. Szinovacz and Davey, 2004) and since men usually do not work part-time we carry out separate regressions for women and men.

The results suggest that individuals who provide care and also work full-time have a significantly higher consumption of antidepressant drugs and tranquilizers than those who work only. This holds both for women and men and is mostly driven by an increase in the extensive margin of drug intake, the probability of any drug consumption. Moreover, there is some evidence that higher care levels go along with higher drug consumption for some of the drugs (antidepressants for women and tranquilizers for men). Thus, the double burden of care provision and full-time-work seems to be harmful to the mental health status. On the contrary there are much less significant and systematic effects regarding the three drug types that measure physical health. In qualitative terms, these results are in line with those by Coe and Van Houtven (2009) who look at health conditions instead of drug consumption.

Our analysis contributes to the existing literature in several ways. First, this is, to the best of our knowledge, the first study on the relationship between care provision, employment status and health that is based on administrative data from an insurance company and does not rely on survey data. This has several advantages. Besides the large sample size, the data are characterized by their high reliability as they are not generated in interviews but through billing processes between health care institutions and the insurance company. Therefore, our data are not subject to individual perceptions and measurement error is presumably low. Another advantage is the high precision of the variables like the exact amount of prescribed doses of drugs.

Second, while several studies have analyzed the relation between informal care and the labor force status (see the sources mentioned above), or the labor force status and the health status (e.g. Adams et al., 2003; Riphahn, 1999; Salm, 2009; Schmitz, 2011), there is no study so far that looks at the relationship of health and both care provision and (full-time-)work at the same time. However, this double burden is a common phenomenon that deserves attention especially as the rapid increase of both the female labor force participation and the old age dependency ratio in the past (OECD, 2011) is even expected to grow in all industrialized countries. Third, mental and physical well-being of caregivers have not yet been examined empirically in the German context — a country that is the largest in Europe with a pronounced social security system, and subject to a strong demographic change.

The paper is organized as follows. Section 2 describes the dataset and variables of interest. Section 3 explains the empirical strategy while the results are presented in Section 4. Section 5 concludes.

2. Data and sample selection

There is free choice of sickness funds in Germany and no barriers to enter any of the 150 competing funds, except for some funds that only operate on regional levels. Typically, employed individuals are members of a sickness fund while their dependent children and not-employed spouses are also covered at no extra costs. However, employment is not necessary in order to be enrolled in a sickness fund. In Germany, virtually everyone has health insurance, including unemployed and those out of the labor force. Like all other German sickness funds, the provider of our data, the TK, collects administrative and claims data on their

[1] In 2012, the German social long-term care insurance pays 700 per month for care recipients of care level 3 who are cared by family members and 1550per month to the same recipient cared by professional caregivers.

[2] In contrast, Meng (2012a) finds effects of care provision on retirement entry.

[3] There are some studies in the medical literature on the association of health and care provision, mostly from the US, see, e.g. Schulz et al. (1995), Stephen et al. (2001), Gallicchio et al. (2002), Tennstedt et al. (1992), Beach et al. (2000), Ho et al. (2009), Shaw et al. (1999), Lee et al. (2003), Dunkin and Anderson-Hanley (1998), or Colvez et al. (2002). However, most studies are based on very small sample sizes and focus on caregivers providing care for elders with a special illness, i.e. in most cases Alzheimer's disease or other forms of cognitive impairment. Moreover, the empirical strategy of the existing studies is usually limited to descriptive comparisons and cross-sectional regressions.