

# Informal care in Europe: findings from the European Social Survey (2014) special module on the social determinants of health

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**Background:** Against the background of a rising demand for informal care in European societies, this study sets out to provide descriptive information by gender on (i) prevalence rates of (intensive) informal caregiving, (ii) characteristics of (intensive) informal caregivers and (iii) consequences of (intensive) informal caregiving in terms of mental well-being. **Methods:** Data from the European Social Survey, Round 7 were analysed with multilevel (logistic) regression techniques ( $n=28\ 406$  respondents in  $n=20$  countries). **Results:** On average, 34.3% of the population in 20 European countries were informal caregivers and 7.6% were intensive caregivers (providing care for minimum 11 h a week). Countries with high numbers of caregivers had low numbers of intensive caregivers. Caregiving was most prevalent among women, 50–59 year olds, non-employed—especially those doing housework—and religious persons. Determinants of providing care hardly differed by gender. Caregivers, especially female and intensive caregivers, reported lower mental well-being than non-caregivers. **Conclusions:** Our results suggest support for both crowding-in and crowding-out effects of the welfare state. Middle-aged women may become increasingly time squeezed as they are likely to be the first to respond to higher demands for informal care, while they are also the major target groups in employment policies aiming for increased labour market participation. Caregivers, and especially female and intensive caregivers, report lower levels of mental well-being. Supportive policies such as respite care or training and counselling may therefore be needed in order to sustain informal care as an important resource of our health care systems.

## Introduction

Good quality health care is an essential determinant of health and health inequality both in terms of prevention and treatment of ill health. Equal access to health care for equal need therefore is an important and formalized element of many European welfare states.<sup>10</sup> While health care is most commonly understood as medical services provided by health care professionals, not all forms of health care are provided formally. In fact, more care is provided informally (by family and friends) than formally.<sup>7</sup> However, despite its essential role in the healthcare system, informal care can be characterized as a ‘hidden health care system’.<sup>12</sup> This is unfortunate because informal care responsibilities disproportionately fall on certain social groups, such as middle-aged women,<sup>7</sup> and are associated with reduced well-being.<sup>16,21</sup>

More information on informal care becomes increasingly relevant against the background of current policy developments in several European countries. In response to ageing populations and growing needs for long-term care, governments increasingly rely on informal care.<sup>22</sup> The purpose of this article is therefore to provide descriptive information on this “hidden form of care”. In particular, it will describe (i) prevalence rates of informal care in 20 European countries, (ii) characteristics of informal caregivers and (iii) consequences of informal caregiving in terms of caregivers’ mental well-being. For all three topics, we will consider caregivers in general and intensive caregivers (i.e. those who provide care for 11 h a week or more). In order to provide a thorough description, we will also present gender differences in the determinants and mental health outcomes of (intensive) informal care.

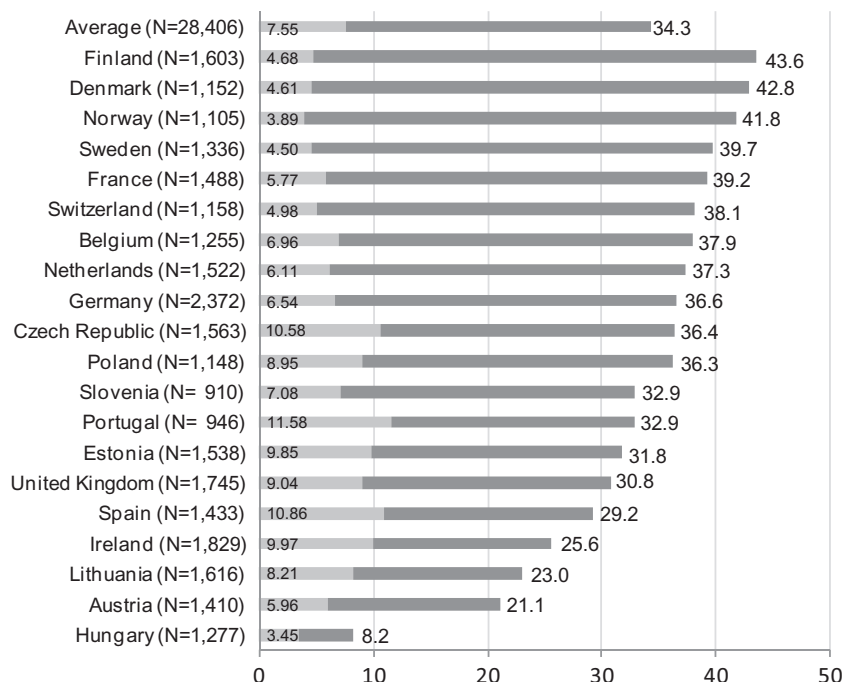
Current country-comparative knowledge on informal care<sup>2,4,9,22</sup> is largely based on samples of older persons that report on received or provided care, most prominently collected in the Survey of Health,

Ageing and Retirement (SHARE) initiative that conducted interviews in several European countries in 2004/2005, 2006/2007 and 2010/2011. Data from the seventh round of the European Social Survey (ESS)<sup>8</sup> collected in 2014 provide an excellent source to update and extend our current knowledge. First, it offers very recent information on a wide number of European countries. Second, the ESS is based on random samples of the population aged 15 years and over. This implies that, compared with the SHARE studies, our study may offer a more complete picture of informal care, covering more types of relationships between care receiver and caregiver than the parent–child relationship and, consequently, also a more diverse set of reasons for providing informal care.

## Methods

ESS7 offers information on 37 623 respondents from 22 national random samples collected through face-to-face interviews. Complete information on the survey, including questionnaires, is available from <http://www.europeansocialsurvey.org>. Data from Latvia were unavailable at the time this article was written and we removed Israel to restrict our study to European countries. As a robustness check, we also excluded Hungary since prevalence rates were extremely low and not in line with previous studies.<sup>21</sup> Because conclusions did not alter, we here show the results with Hungary included. We selected respondents aged between 25 and 75 (but conclusions were not different when a sample of 18 year and older was selected); and removed those respondents (5.9%) with a missing value on at least one of the variables of interest. Our analysis sample included 28 406 respondents in 20 countries (see figure 1 for the list of countries and their sample sizes).

*Informal caregiving* was defined as a positive answer to the question whether one spends any time looking after or giving



**Figure 1** Prevalence rate of informal caregivers by country (%); intensive caregivers are marked in light grey; source: *European Social Survey, Round 7*

help to family members, friends, neighbours or others because of long-term physical ill health or disability, long-term mental ill health or disability, or problems related to old age. In addition, we identified *intensive caregivers* as those who reported to spend 11 h a week or more on this. We found the same patterns, though stronger effects when intensive caregiving was defined as 21 h a week or more (which applied to only 3.7% of our sample).

The selection of determinants of providing informal care was foremost driven by the Informal Care Model.<sup>5</sup> We included indicators for people's attitudes (do I want to) and perceived barriers (can I) towards providing informal care. In addition, we included demographic determinants that are often associated with caregiving.<sup>7</sup> *Sex* was recoded with females having score 1. *Age* was categorized in five-year groups to capture the non-linear relationship between age and informal caregiving. *Relationship status* reflected the current partnership arrangement (instead of legal marital status), distinguishing married, cohabiting, divorced or separated, widowed and single never married persons. *Employment status* was measured in seven categories: full-time job (35 h a week or more), part-time job (less than 35 h a week), housework (including looking after children or other persons), unemployed, retired, disabled (including permanently sick) and in education. We excluded those in military or community service (0.1%). Presence of *children in the household* was recorded in a binary variable. *Self-rated health* was measured on a five-point scale with higher values reflecting better health. *Educational level* was based on International Standard Classification of Education (ISCED) scores and divided into three categories: lower secondary education or less, upper secondary education, and tertiary education or more. We used a categorical variable for two main reasons. First, Schneider<sup>18,19</sup> argued that using years of education is not optimal for comparative research in European countries. Second, comparing educational groups is more relevant than assessing a linear association, given this study's focus on differences between groups in providing informal care. Finally, *religiosity* was another binary variable, indicating whether or not the respondent considered him/herself belonging to any particular religion or denomination.

Mental well-being was measured as a sum score of eight items (a subset of the CES-D scale)<sup>17</sup> about respondents' feelings or

behaviours during the past week (e.g. felt depressed, sleep was restless, enjoyed life). Answer categories ran from none or almost none of the time (0) to all or almost all of the time.<sup>3</sup> Previous research has indicated that CES-D 8 is a valid and reliable indicator for depression which is comparable within a European context.<sup>11,13,20</sup>

Table 1 presents descriptive statistics of all variables used in the analyses, also separated by caregiving status.

Our analyses consisted of three parts that followed the aims of this study. Firstly, we calculated the prevalence rate of informal care as well as intensive informal care in each country in our study. Secondly, we estimated the effects of the eight determinants on the odds of being an (intensive) informal caregiver using logistic multilevel analysis techniques with respondents nested in countries. We also conducted separate analyses for men and women and tested gender differences in a full interaction model. Thirdly, we regressed mental well-being on (intensive) informal caregiving, controlled for demographic and socio-economic variables, applying linear multilevel analysis. Again, we stratified our analyses by gender as well and tested differences in a full interaction model.

## Results

Figure 1 shows the prevalence rates of informal care in 20 European countries. On average, over a third of the countries' populations provided informal care, but variation between countries was large: from 43.6% in Finland to 8.2% in Hungary. Informal care was more common in Nordic countries and less common in Central, Eastern and Southern Europe. However, nuance is needed. Intensive caregiving—defined as at least 11 h a week and done by only 7.6% of Europe's population—was negatively related to the proportion of informal caregivers. Countries in Central, Eastern and Southern Europe had higher proportions of intensive caregivers than the Nordic countries: for instance, 11.6% in Portugal versus 3.9% in Norway.

Table 2 reveals that demographic and socio-economic groups are most likely to provide (intensive) informal care. Determinants for providing (intensive) care hardly differed by gender and some were

**Table 1** Descriptive statistics<sup>a</sup>

	All respondents (n = 28 406)		Non-caregivers (n = 18 984)		Informal caregivers (n = 9422)		Intensive caregivers (n = 2001)	
	%	Mean (SD)	%	Mean (SD)	%	Mean (SD)	%	Mean (SD)
Informal caregiver	34.3							
Intensive caregiver (11+ h a week)	7.6							
Female	51.4		49.5		55.0		63.6	
Age								
25–29 years	10.0		11.1		7.9		6.4	
30–34 years	11.5		12.3		10.0		9.5	
35–39 years	10.4		11.4		8.4		8.1	
40–44 years	11.0		11.3		10.3		9.3	
45–49 years	12.1		11.9		12.4		11.0	
50–54 years	12.5		10.8		15.8		15.5	
55–59 years	8.6		7.6		10.5		13.6	
60–64 years	8.6		8.0		9.6		9.8	
65–69 years	7.9		7.7		8.2		9.3	
70–75 years	7.5		7.8		6.9		7.5	
Relationship status								
Married	61.0		59.3		64.3		63.6	
Cohabiting	10.0		11.0		8.1		7.3	
Divorced/separated	10.1		9.9		10.7		12.0	
Widowed	4.2		4.4		3.8		5.1	
Single, never married	14.6		15.4		13.2		12.0	
Educational level								
Lower secondary or less	33.0		33.1		32.9		39.7	
Upper secondary	47.7		46.6		49.9		47.8	
Tertiary or more	19.2		20.3		17.2		12.6	
Employment status								
Full-time job	47.8		49.1		45.3		34.3	
Part-time job	12.7		12.6		12.8		9.4	
Housework	9.6		8.7		11.1		20.9	
Unemployed	7.1		6.9		7.5		9.6	
Retired	18.1		17.9		18.5		20.7	
Disabled	3.1		3.0		3.2		4.4	
In education	1.7		1.8		1.6		0.7	
Children in household	49.1		48.9		49.6		50.9	
Self-rated health (0–4)		2.77 (0.89)		2.80 (0.89)		2.73 (0.88)		2.61 (0.91)
Religious	56.5		55.0		59.2		61.7	
Mental health: depressive symptoms (0–24)		5.32 (4.08)		5.18 (4.05)		5.59 (4.14)		6.49 (4.48)

Source: European Social Survey, Round 7, weighted data using post-stratification (based on age-group, gender, education and region) and population size weights.

<sup>a</sup>Differences between the three groups were tested with  $\chi^2$  test (nominal variables) or *t*-test (continuous variables). All tests were significant at  $P < 0.05$  except for children in household, self-rated health and religiosity between non-caregivers and informal caregivers.

more, whereas others were less pronounced when intensive caregiving was concerned.

Females had a 33% higher odds of providing care than males (OR = 1.33, 95% CI = 1.26–1.40) and 60% higher odds of providing intensive care (OR = 1.60, 95% CI = 1.44–1.78). Providing care was most likely among respondents in the age of 50–59 and this pattern was similar for intensive caregiving. Widowed and (when informal caregiving in general was concerned) cohabiting respondents provided care less often than married persons, whereas divorced and single respondents did not differ from married persons.

Our analyses showed that middle and higher educated respondents had 18% higher odds of providing care than lower educated respondents (OR = 1.18, 95% CI = 1.10–1.27 for upper secondary education and OR = 1.18, 95% CI = 1.09–1.28 for tertiary education), but this educational effect was purely driven by women. Note that the differences in informal caregiving emerged once we took account of the fact that lower educated persons had different age distributions and employment statuses. Even though higher educational groups may be more aware of ways to mobilize formal care,<sup>9</sup> this apparently does not imply that they do not take up the caring task themselves. When intensive caregiving is concerned, no education differences emerged.

Restrictions, most notably in terms of time and health, are often suggested as reasons for people not to provide care.<sup>5,9</sup> We found mixed support for this idea. In line with time arguments, we found that, compared with full-time workers, several non-employed categories provided informal care more often, most notably persons whose main daily activity is doing housework (OR = 1.52, 95% CI = 1.37–1.69), but also unemployed (OR = 1.16, 95% CI = 1.03–1.30) and retired persons (OR = 1.13, 95% CI = 1.02–1.26). In addition, these effects appeared much stronger when intensive caregiving was concerned, i.e. when the caring task required much time. People doing housework were over three times more likely to belong to the intensive caregiver group than to the non-caregiver group, compared with full-timers (OR = 3.11, 95% CI = 2.66–3.63); this association was significantly stronger for men than for women. In contrast to the idea of time availability predicting care provision, part-time workers appeared to be just as likely to provide (intensive) informal care as full-timers. Also, the presence of children in the household—another potential time restriction—did not appear to be related to the odds of informal caregiving. Respondents with children in the household even appeared to be more likely to be an intensive caregiver than a non-caregiver. Our results did not support the idea that bad health would be a restriction for providing care. Health did not

**Table 2** Determinants of being an (intensive) informal caregiver<sup>a</sup>

	Informal caregiver						Intensive caregiver (11+ h a week)							
	All respondents		Females		Males		Δ	All respondents		Females		Males		Δ
	OR	95% CI	OR	95% CI	OR	95% CI		OR	95% CI	OR	95% CI	OR	95% CI	
Female	1.33	** 1.26–1.40						1.60	** 1.44–1.78					
Age (ref: 55–59 years)														
25–29 years	0.51	** 0.45–0.58	0.44	** 0.37–0.53	0.61	** 0.50–0.75	*	0.59	** 0.46–0.76	0.55	** 0.40–0.75	0.71	0.47–1.07	
30–34 years	0.56	** 0.50–0.64	0.45	** 0.38–0.53	0.73	** 0.61–0.87	**	0.55	** 0.43–0.69	0.46	** 0.34–0.62	0.77	0.53–1.11	
35–39 years	0.52	** 0.46–0.58	0.48	** 0.41–0.57	0.55	** 0.46–0.66		0.59	** 0.48–0.74	0.61	** 0.47–0.80	0.54	** 0.37–0.80	
40–44 years	0.64	** 0.57–0.72	0.62	** 0.53–0.73	0.66	** 0.55–0.78		0.71	** 0.57–0.87	0.78	** 0.60–1.00	0.55	** 0.38–0.81	
45–49 years	0.79	** 0.70–0.88	0.75	** 0.65–0.87	0.82	* 0.70–0.97		0.77	* 0.63–0.94	0.70	** 0.55–0.90	0.89	0.65–1.22	
50–54 years	1.06	0.96–1.18	1.04	0.90–1.20	1.08	0.93–1.26		0.94	0.78–1.13	0.95	0.75–1.19	0.92	0.67–1.25	
60–64 years	0.83	** 0.74–0.93	0.85	* 0.73–0.99	0.81	* 0.69–0.96		0.72	** 0.59–0.87	0.75	* 0.59–0.96	0.66	* 0.47–0.92	
65–69 years	0.67	** 0.59–0.77	0.66	** 0.56–0.79	0.69	** 0.57–0.85		0.62	** 0.49–0.77	0.66	** 0.51–0.87	0.51	** 0.34–0.75	
70–75 years	0.61	** 0.53–0.71	0.58	** 0.48–0.70	0.66	** 0.53–0.82		0.55	** 0.44–0.70	0.58	** 0.43–0.78	0.49	** 0.33–0.74	
Relationship status (ref: married)														
Cohabiting	0.90	* 0.82–1.00	0.90	0.78–1.03	0.89	0.77–1.03		0.88	0.72–1.08	0.86	0.67–1.11	0.91	0.66–1.26	
Divorced/separated	0.98	0.90–1.06	1.02	0.92–1.14	0.90	0.79–1.02		1.01	0.87–1.16	0.97	0.82–1.16	1.04	0.81–1.34	
Widowed	0.85	** 0.75–0.96	0.85	* 0.74–0.98	0.79	0.62–1.00		0.72	** 0.59–0.88	0.71	** 0.56–0.89	0.66	0.40–1.10	
Single, never married	0.99	0.91–1.08	1.06	0.94–1.19	0.88	0.77–1.01		0.95	0.80–1.12	0.87	0.70–1.08	1.02	0.78–1.34	
Educational level (ref: ≤ lower secondary)														
Upper secondary	1.18	** 1.10–1.27	1.27	** 1.15–1.40	1.09	0.98–1.21	*	1.04	0.92–1.17	1.06	0.91–1.24	0.93	0.75–1.14	
Tertiary	1.18	** 1.09–1.28	1.31	** 1.17–1.46	1.06	0.93–1.19	*	0.90	0.78–1.05	0.97	0.81–1.17	0.73	* 0.57–0.95	
Employment status (ref: full-time job)														
Part-time job	1.06	0.97–1.15	1.12	* 1.01–1.24	0.95	0.80–1.13		1.07	0.90–1.27	1.02	0.83–1.25	1.38	0.96–1.97	
Housework	1.52	** 1.37–1.69	1.56	** 1.39–1.76	1.76	** 1.31–2.36		3.11	** 2.66–3.63	2.93	** 2.45–3.50	4.96	** 3.32–7.42	*
Unemployed	1.16	* 1.03–1.30	1.13	0.96–1.33	1.22	* 1.04–1.44		1.72	** 1.42–2.09	1.63	** 1.26–2.11	1.89	** 1.41–2.53	
Retired	1.13	* 1.02–1.26	1.24	** 1.07–1.44	1.02	0.87–1.20		1.85	** 1.54–2.22	1.76	** 1.40–2.21	2.16	** 1.58–2.95	
Disabled	0.97	0.83–1.14	0.98	0.79–1.22	0.98	0.77–1.24		1.39	* 1.06–1.82	1.34	0.95–1.89	1.49	0.98–2.28	
In education	1.13	0.92–1.39	1.28	0.97–1.68	1.01	0.73–1.38		1.30	0.85–2.00	1.29	0.75–2.22	1.28	0.63–2.60	
Children in household	1.03	0.96–1.10	1.08	0.99–1.18	0.97	0.88–1.07		1.13	* 1.00–1.27	1.13	0.98–1.31	1.20	0.98–1.47	
Self-rated health (0–4)	0.98	0.95–1.01	0.99	0.94–1.03	0.97	0.92–1.02		0.88	** 0.83–0.94	0.89	** 0.83–0.95	0.87	** 0.79–0.96	
Religious	1.13	** 1.07–1.19	1.11	** 1.03–1.20	1.15	** 1.06–1.24		1.14	* 1.03–1.27	1.17	* 1.02–1.33	1.11	0.94–1.32	
Intercept	0.47	** 0.36–0.60	0.57	** 0.43–0.75	0.53	** 0.39–0.71	**	0.07	** 0.05–0.09	0.11	** 0.08–0.15	0.08	** 0.05–0.12	**
Variance country level (intercept)	0.23	0.12–0.43	0.20	0.10–0.38	0.27	0.14–0.52		0.09	0.05–0.19	0.11	0.05–0.24	0.05	0.02–0.16	
No. respondents	28 406		15 013		13 393		28 406		15 013		13 393			
No. countries	20		20		20		20		20		20			

Source: European Social Survey, Round 7, non-weighted data.

<sup>a</sup>Random intercept multilevel logistic regression analysis, odds ratios and 95% confidence intervals.

\**P* < 0.05; \*\**P* < 0.01.

affect the probability of providing informal care, and the likelihood of providing intensive care was even higher with lower levels of self-reported health.

Besides restrictions, the previous literature mentions care attitudes as a reason to provide informal care.<sup>3,5</sup> Strong care attitudes are partly driven by religious beliefs as religions explicitly emphasize the importance of loving one’s neighbour and to helping those in need. Our results supported this argument with religious respondents having a 13% (OR = 1.13, 95% CI = 1.07–1.19) higher odds of being an informal caregiver and 14% (OR = 1.14, 95% CI = 1.03–1.27) higher odds of being an intensive caregiver than non-religious respondents.

Our third set of analyses (table 3) showed that (i) informal caregivers reported significantly lower levels of mental well-being (i.e. more depressive symptoms) than non-caregivers; (ii) that informal caregiving was significantly more detrimental for the mental health of females than for males and (iii) that the negative relationship between caregiving and mental health was much stronger when caregiving was intensive. Controlled for several demographic and socio-economic characteristics, caregivers scored 0.26 points (Model 1) and intensive caregivers even 0.61 points (Model 4) higher on the depression scale, which ran from 0 through 24. Gender differences were marked: for females the effect of caregiving on depressive symptoms was over two times as strong as for male caregivers (0.35 versus 0.15). For intensive caregiving the gender differences were in the same direction, but not statistically significant. Note that the effect sizes [expressed by (b/SD(Y)) of informal caregiving as well as intensive caregiving were limited (0.26/4.08 = 0.06 and 0.61/4.08 = 0.15, respectively); other

determinants such as self-rated health and relationship status had more impact on mental well-being.

## Discussion

This study used random population samples from 20 European countries to provide up-to-date descriptive information, by gender, on the prevalence of informal caregivers and intensive caregivers, their characteristics, and the mental health consequences of (intensive) informal care provision. We summarize and discuss our results for each of these topics.

First, in the countries under study, on average more than a third of the population spent time looking after or giving help to family members, friends, neighbours or others because of health reasons (including problems relating to health problems to old age). Countries that had high numbers of informal caregivers had low numbers of intensive caregivers (Nordic countries) and vice versa (Central and Eastern Europe). In the debate on the crowding out or crowding in effects of welfare states,<sup>4</sup> this suggests that generous welfare states stimulate taking up a caring role (crowding in), while at the same time they take away the necessity of intensive caring (crowding out).

Second, this study demonstrated that females, 50–59-year olds, non-employed persons and especially those whose main daily activity is housework and religious persons were overrepresented among informal caregivers, and so were persons with children in the household and with lower self-reported health when intensive caregiving was concerned. These differences may relate to differences in time availability and stronger caregiving norms. To the extent that

**Table 3** Mental health (depressive symptoms) regressed on (intensive) informal caregiving<sup>a</sup>

	Model 1 All respondents		Model 2 Females		Model 3 Males		Δ	Model 4 All respondents		Model 5 Females		Model 6 Males		Δ										
	b	SE	b	SE	b	SE		b	SE	b	SE	b	SE											
Informal caregiver	0.26	**	0.04		0.35	**	0.06		0.15	*	0.06	*												
Intensive caregiver (11+ h a week)									0.61	**	0.08		0.68	**	0.10		0.42	**	0.13					
Female	0.55	**	0.04						0.55	**	0.04													
Age (ref: 55–59 years)																								
25–29 years	0.44	**	0.10		0.22		0.15		0.63	**	0.14	*	0.42	**	0.10		0.19		0.15	0.62	**	0.14	*	
30–34 years	0.37	**	0.10		0.15		0.14		0.58	**	0.13	*	0.36	**	0.10		0.13		0.14	0.57	**	0.13	*	
35–39 years	0.30	**	0.09		0.06		0.13		0.52	**	0.13	*	0.28	**	0.09		0.04		0.13	0.52	**	0.13	*	
40–44 years	0.26	**	0.09		0.06		0.13		0.42	**	0.13	*	0.25	**	0.09		0.03		0.13	0.42	**	0.13	*	
45–49 years	0.30	**	0.09		0.09		0.13		0.48	**	0.12	*	0.30	**	0.09		0.09		0.13	0.48	**	0.12	*	
50–54 years	0.17		0.09		0.06		0.13		0.27	*	0.12		0.17	*	0.09		0.07		0.13	0.27	*	0.12		
60–64 years	–0.24	**	0.09		–0.38	**	0.13		–0.13		0.12		–0.24	**	0.09		–0.37	**	0.13	–0.12		0.12		
65–69 years	–0.31	**	0.11		–0.25		0.15		–0.44	**	0.15		–0.31	**	0.11		–0.26		0.15	–0.43	**	0.15		
70–75 years	–0.42	**	0.11		–0.57	**	0.16		–0.31	*	0.16		–0.42	**	0.11		–0.58	**	0.16	–0.31		0.16		
Relationship status (ref: married)																								
Cohabiting	0.27	**	0.08		0.40	**	0.11		0.12		0.10		0.27	**	0.08		0.40	**	0.11	0.12		0.10	*	
Divorced/separated	1.14	**	0.06		1.11	**	0.09		1.12	**	0.09		1.14	**	0.06		1.11	**	0.09	1.11	**	0.09		
Widowed	1.68	**	0.09		1.51	**	0.11		1.86	**	0.17		1.68	**	0.09		1.52	**	0.11	1.87	**	0.17		
Single, never married	1.06	**	0.07		1.02	**	0.10		1.00	**	0.09		1.06	**	0.07		1.03	**	0.10	1.00	**	0.09		
Educational level (ref: ≤ lower secondary)																								
Upper secondary	–0.47	**	0.06		–0.61	**	0.08		–0.35	**	0.08	**	–0.47	**	0.06		–0.59	**	0.08	–0.35	**	0.08	**	
Tertiary	–0.57	**	0.06		–0.74	**	0.09		–0.39	**	0.09	**	–0.56	**	0.06		–0.72	**	0.09	–0.38	**	0.09	**	
Employment status (ref: full-time job)																								
Part-time job	0.22	**	0.07		0.11		0.09		0.42	**	0.12		0.22	**	0.07		0.12		0.09	0.42	**	0.12		
Housework	0.55	**	0.09		0.35	**	0.10		1.03	**	0.23	*	0.51	**	0.09		0.31	**	0.10	1.00	**	0.23	*	
Unemployed	1.17	**	0.09		1.05	**	0.14		1.27	**	0.12		1.16	**	0.09		1.03	**	0.14	1.26	**	0.12		
Retired	0.14		0.09		0.23		0.12		0.11		0.12		0.12		0.09		0.21		0.12	0.10		0.12		
Disabled	2.20	**	0.13		1.78	**	0.18		2.69	**	0.17	**	2.18	**	0.13		1.76	**	0.18	2.68	**	0.17	**	
In education	0.73	**	0.16		0.69	**	0.23		0.73	**	0.22		0.72	**	0.16		0.70	**	0.23	0.72	**	0.22		
Children in household	0.15	**	0.05		0.39	**	0.07		–0.08		0.07	**	0.14	**	0.05		0.39	**	0.07	–0.08		0.07	**	
Self-rated health	–1.84	**	0.03		–1.98	**	0.04		–1.66	**	0.04	**	–1.83	**	0.03		–1.97	**	0.04	–1.66	**	0.04	**	
Religious	–0.06		0.04		–0.07		0.06		–0.05		0.06		–0.05		0.04		–0.07		0.06	–0.05		0.06		
Intercept	9.67	**	0.19		10.79	**	0.23		9.04	**	0.22	**	9.71	**	0.19		10.85	**	0.22	9.06	**	0.22	**	
Variance individual level	3.38		0.01		3.54		0.02		3.16		0.02		3.38		0.01		3.54		0.02	3.16		0.02		
Variance country level (intercept)	0.69		0.11		0.71		0.12		0.71		0.12		0.67		0.11		0.68		0.11	0.70		0.11		
No. respondents	28 406				15 013				13 393				28 406				15 013			13 393				
No. countries	20				20				20				20				20			20				

Source: European Social Survey, Round 7, non-weighted data.

<sup>a</sup>Random intercept multilevel linear regression analysis, unstandardized regression coefficients and standard errors.

\**P* < 0.05; \*\**P* < 0.01.

informal caregiving has negative health and well-being consequences, these groups can be considered most at risk and potential target groups for supportive policies such as respite care or training and counselling.<sup>10</sup> A current debate is about the conflicting aims of higher expectations of informal caregivers on the one hand and higher labor market participation (to offset the rising costs of our ageing population) on the other hand.<sup>1</sup> Middle-aged women are likely to be the first to experience the increased demand for informal care, whereas they are the major target groups in those employment policies as well. This suggests that particularly these groups may become vulnerable for experiencing severe time squeezes. Although our study cannot make any causal claims regarding the relationship between employment and informal care provision, we found support for a negative relationship. Non-employed people and especially those whose main daily activity is housework were more likely to provide informal care than full-timers. However, prevalence rates did not differ between part-timers and full-timers. Interestingly, although women were found to be informal caregivers more often than men, determinants of providing informal care hardly differed between men and women.

Third, our results confirmed previous (meta) studies<sup>16,21</sup> that informal caregivers suffer from reduced mental well-being compared with non-caregivers. Negative mental health consequences are especially severe for intensive caregivers, and stronger for female caregivers than male caregivers. The strength of the caregiving effect

was not extremely strong, but note that our analyses revealed the net consequences of informal caregiving on mental well-being. On the one hand, informal caregiving can be burdensome and produces stress;<sup>15</sup> on the other hand, providing care to loved-ones is also found to bring benefits, such as a positive feelings of reward or a closer relationship to the care receiver.<sup>6</sup> Our result implied that on average the negative consequences outweigh the positive ones. Future studies should examine under which conditions informal caregiving has more or less severe consequences. The fact that (especially intensive) caregivers experience mental well-being reductions warrants supportive policies to sustain informal caregiving as an important element of European health care systems.

The large comparative reach of this study comes with important limitations as well. First, little detail is provided in the ESS survey about the caregiving situation, such as the relationship to the care recipient (parent, partner, child, other), the care recipient's health status, the types of tasks that are performed, and whether care provisions are shared with other informal caregivers or professionals. Hence, the results in this study only provide crude descriptions. Different caring situations between male and female caregivers may explain why well-being consequences were found to be more strongly negative for women. Second, the concept of informal care could have different interpretations across cultures in Europe. In familialist cultures, looking after family members may not always be labelled as informal care due to the obvious character of it. Third,

the cross-sectional design of ESS implies that associations we found cannot be inferred as causal. Finally, as those who cannot speak the main language of a country (or one spoken by at least 5% of the population) are excluded from the survey, ethnic minorities were likely underrepresented. This may affect our prevalence rates of informal caregiving as informal caregiving is suggested to be more common among minority groups.<sup>14</sup>

To conclude, this study provided some basic descriptive information on the largest, but also "hidden" form of health care: unpaid care provided by family members, friends or neighbours. We found substantial variation between countries in the number of informal caregivers as well as in the intensity of informal care provision. Moreover, we found that intensive caregivers are a special group among the total group of informal caregivers, both in terms of characteristics and in their mental health consequences. Given the increased attention to informal health care as a potential health resource, further knowledge on the subject is needed. Future studies could assess whether country differences in health care policies and caregiver support policies are responsible for the different tendencies of taking up (intensive) caregiving and the consequences this have for caregivers' mental health.<sup>21</sup>

## Acknowledgement

Terje A. Eikemo, Clare Bambra and Tim Huijts led the design of the ESS special module on the social determinants of health in coordination with Rory Fitzgerald of the ESS.

## Funding

This article is part of the HiNEWS project—Health Inequalities in European Welfare States—funded by NORFACE (New Opportunities for Research Funding Agency Cooperation in Europe) Welfare State Futures programme (grant reference:462-14-110). For more details on NORFACE, see <http://www.norface.net/11>. The article is also part of the Norwegian Research Council funded project: ESS7 Health Module: Equality in Access to Health Care (project number 228990).

*Conflicts of interest:* None declared.

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