Health Policy 123 (2019) 1163–1172

Contents lists available at ScienceDirect

Health Policy

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

Informal care. European situation and approximation of a reality

Mª Eugenia Estrada Fernández[a,*], Ana I. Gil Lacruz[b], Marta Gil Lacruz[c], Antonio Viñas López[d]

[a] Nursing School, University of Zaragoza, Martinez de Velasco AV, 36, 22004, Huesca, Spain
[b] Department of Management and Organisation, University of Zaragoza, Betancourt Building, Campus Río Ebro, 50018, Zaragaoza, Spain
[c] Psychology and Sociology Department, University of Zaragoza, Domingo Miral s/n, Street, Zaragoza, Spain
[d] Traumatology and Orthopedics Surgery Unit, San Jorge Hospital, Martinez de Velasco AV, 36., 22004, Huesca, Spain

ARTICLE INFO

Article history:
Received 15 February 2019
Received in revised form 21 August 2019
Accepted 16 September 2019

Keywords:
Long-term care
Dependency
Public health
Family health
Inequalities
Europe

ABSTRACT

Introduction: In European countries, the increasing of dependency affects individual, family-level and political aspects. The purpose is to analyse the effects on the health of informal carers living with a dependent person and the number of hours taken up by this care. Results between genders will be compared with other situations (time, energy commitments, influential socio-economic factors and differences among countries).
Materials/methods: This research is a cross-sectional study analysing secondary data and is carried out as part of the European Social Survey (ESS), 2014/2015. A total of 32,992 participants aged over 25 years took part in the ESS. Using an empirical framework, we have selected a simple logit model (logit) and a logit model with a multilevel structure ranking by country of residence (Xtmelogit).
Results: Being a carer is associated with a decrease in health indicators. Moreover, being a woman is related to an intense load of hours of care, no level of studies and living with difficulties. Living in southern or eastern European countries can also be considered a risk factor for carers. There are also important north-south political differences.
Political implications: These results show the need to apply gender policies to reconcile and regulate the distribution of the income of economically more vulnerable families, as well as the provision of social services to help dependents.

1. Introduction

Care work has traditionally been seen as unpaid domestic work carried out within the household, but this idea has evolved as a result of numerous social changes and feminist studies. Thus, the concept of "social care" is proposed as an alternative [1], which implies overcoming the conception of the family as the main supporting structure of dependents, and accepting the incorporation of the community, the market and the state [2,3]. Public dependency policies respond to different models, depending on the predominant carer (public sector, private sector or family) and the relationships between dependents and their carers. The models are distinguished by the public coverage of the beneficiaries, the modalities, the professionalism of the assistance work and the financing of that assistance [4].

At this level, the intergenerational solidarity that comes from informal care causes social problems that place pressure on the life and work of the population, especially on women, as well as on the quality of care for dependents [5]. These carers, although they do not receive a salary for carrying out their work, are associated with different economic effects of care, as well as the opportunity costs that occur when informal carers give up their jobs or reduce their working hours [6].

The latest data available in Europe show that around 6% of the population aged 50 years or more provides care to an older relative, with variations among the highest rates in the Mediterranean countries (reaching almost 10%) and the lowest in Sweden, Switzerland and the Netherlands (less than 5%) [7]. Long-term care in the European Union shows, in general, differences among countries, and specifically distinctions between north and south [8,9].

The expenditure on long-term care financed in each country of the European Union is a key aspect in being able to analyse the differences in the results. In some countries, spending on long-term care ranges between 10% and 37%, depending on the country, representing more than a third of the total social and health expen-

* Corresponding author at: Martinez de Velasco, Avenue, 36, 22004, Huesca Spain.
E-mail addresses: meestrada@salud.aragon.es (M.E. Estrada Fernández), anagil@unizar.es (A.I. Gil Lacruz), mglacruz@unizar.es (M. Gil Lacruz), itovl@hotmail.com (A. Viñas López).

https://doi.org/10.1016/j.healthpol.2019.09.007
0168-8510/

diture. This is the case in Denmark (37%), the Netherlands (35%) and Sweden (32%). Finland (26%) and the United Kingdom (27%) have similar percentages. Expressed as a percentage of GDP, Denmark reaches 1.3%, compared to 0.7% in Ireland, Italy and Austria, while Spain, Portugal and Greece are below these percentages [10].

The target of this work is to analyze how the fact of having a dependent person at home influences on the people with whom this person lives. The results will be analysed and compared between genders controlling for some of the most influential socio-economic factors (level of studies, economic well-being, place of residence, size of the population and characteristics of the country). Diversity in similar contexts offers a unique opportunity to investigate the effect of these models of health and social care for people with dependency and the impact that the prolongation of aging can have. This research is carried out using data obtained from the European Social Survey (European Social Survey, 2014/2015). As an empirical framework, we selected a simple logit model (logit) and a logit model with a multilevel structure ranking by country of residence (Xtmelogit).

This empirical work makes three main contributions. First, we believe that living with a dependent person has a negative effect on the state of health and the adoption of healthy lifestyles. Second, we will compare living with a dependent person with other situations that involve dedication in terms of time and energy, such as carrying out domestic work. Finally, we will analyse the gender differences, the number of hours used for this care and the influence of the European country of residence and public policies.

2. Material and methods

2.1. European Social Survey (2014/2015)

The European Social Survey (ESS) is an international scientific survey conducted in Europe every two years since 2001. It is led by a scientific coordination team (Core Scientific Team), led by Rory Fitzgerald (City University, London, United Kingdom), and others institutions.

The countries participating in the ESS are Austria, Belgium, Sweden, the Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Great Britain, Hungary, Ireland, Lithuania, Holland, Norway, Poland, Portugal, Switzerland and Slovenia. The survey measures weekly metadata information (National Technical Summary) and paradata (contact form data) about the attitudes, beliefs and behaviour patterns of the population in Europe through face-to-face interviews (preferably CAPIs: computer-assisted personal interviews), as a way of mapping the patterns of stability and change in social structure, and interpreting the evolution of its social and political aspects.

The individuals to be interviewed are selected through random probabilistic methods in all stages of the process. These are nominal samples whose selection is requested in each edition by the National Institute of Statistics. The selection of the primary sampling units (sections) is proportional to their resident target population and the selection of the last units (individuals) is done using the Municipal Census of Inhabitants frame from a systematic selection of the individuals residing in the municipality section, and previous arrangement of the same by house number.

2.2. ESS aplication in the investigation

The empirical work was carried out using data from the European Social Survey (European Social Survey, 2014/2015), with a total of 32,992 participants aged over 25 years being selected, grouped according to sex and age. The final sample represents 94% of the proposed observations. This simple is the result of discounting 2069 observations because there could not provide all the data we need. For example, not answering or selecting the option "doné know/no response" about the limited educational level is a reason for exclusion. With regard to age, five groups were defined using as criteria the different stages of a person's life cycle: *young adult* (25–39 years), *intermediate adult* (40–49 years), *older adult* (50–65 years), *senior* (66–75 years) and *gerontic (*over 75 years).

The participating countries were classified into five groups of countries with similar characteristics according to scientific literature, resulting in *Mediterranean countries* (Spain, France and Portugal), *Anglo-Saxon countries* (Ireland and Great Britain), *Continental countries* (Australia, Switzerland, Belgium, Holland and Germany), *Eastern countries* (the Czech Republic, Estonia, Hungary, Poland, Slovenia and Lithuania) and finally *Nordic countries* (Denmark, Finland, Norway and Sweden). This classification refers to differents Europeans welfare systems.

To define the health status of individuals, four variables or indicators of health were taken into account as dependent variables: *dissatisfaction in life* (not feeling satisfied with life), *limitations in daily living derived from health problems* (having problems in life daily in the last 12 months for this reason), *depression* (suffering depression or feeling depressed) and *unhappiness* (feeling unhappy).

The explanatory variable being a carer answers the question of whether they have cared for or provided help to family members, friends or others without considering a job and without receiving financial compensation for it. Care is required both for long-term physical and mental problems, as well as problems arising from age. Besides being able to describe the number and characteristics of the carers of the survey, it is possible to infer the number of hours spent. So there are three care variables in this work: *non-carers* (those who do not give care or who do so for less than one hour a week), *carers* (2–20 h/w or those who spend up to 20 h a week) and *long-time carers* ($\geq$20 h /w or those that invest more than 20 h).

The first approach to the object of study includes the estimates of health determinants, which, being of a dihotomic nature, adopt the value 1 if they identify the health problem or 0 otherwise. For this reason the logit model is used, reporting the data in terms of elasticities (whose percentage explains the variation of the dependent variable before changes in the explanatory variable of 1%), in such a way that the estimated parameters inform the sense and intensity of the explanatory variable (being the carer and the number of hours), with respect to the dependent variable (health indicators), repeating the estimates independently:

$$P(\text{DetHealth} = 1|x) = G(x\beta_1) \quad (1)$$

In Model 1 of the estimates, variables (explanatory) have been included that report on whether a carer figure exists in the home and the degree to which they perform the function (number of weekly hours), the health indicator variables and the characteristics of the individual: demographic (age), socio-economic (studies and whether they live comfortably or with difficulties) and place of residence (size of the city and European country in which they reside). The estimation of Model 1 will be repeated independently for each health indicator and for men and women.

For the estimation of Model 2, in addition to the previous model, it includes the fact that the interviewee carries out domestic tasks or takes care of children under 15 years old. The reason why these variables are introduced in this estimation model focuses on investigating the impact of these tasks related to the home, and whether they do so to a greater or lesser degree than caring for a dependent person. In addition, this estimate enables analysis of whether the parameters of being a carer are robust. As with Model 1, in this case the female and male sex will be estimated separately as well.

In addition to the previous estimates, Model 2 will be repeated, but changing the state of health as a dependent variable by adopt-

ing healthy habits: eating fruits and vegetables daily, and having a healthy weight. The objective of including these lifestyles is to know whether being a carer, and to what degree, affects the adoption of lifestyles that, in turn, can influence health indicators. Since it is also a question of dichotomous variables (1/0), the estimation of probabilities is maintained by the logit model, reporting the data in terms of elasticities.

$$P(\text{Lifestyle} = 1|x) = G(x\beta_2) \quad (2)$$

Finally, in Models 3 and 4 of the study, the estimates of the simple logit model will be replicated using multilevel techniques since it has the advantage that the data are ranked by individuals, countries and welfare systems. The dependent variable adopting in this models is depression because its high prevalence in the population and expensive cost associated to its suffering.

3. Results

3.1. ESS descriptive results

From the total initial sample of 32,992 observations distributed in 20 European countries, 31.92% claim to help a family member, of which, 70.98% dedícate at least one hour a week, and only 3.79% of carers dedicated more than 20 h/week.

From the present sample and as shown in Table 1 of the annexes, the highest percentages of carers are in the Nordic countries (reaching 44% in women), compared to the Eastern or Anglo-Saxon countries (with 23%). There are important differences among countries and between sexes. As a general trend, care in Europe presents a marked feminine character. Women are the ones that assume the role of helping the family most in all European countries (with a greater percentage difference between sexes for the Anglo-Saxon countries, with 7 percentage points, compared to the Mediterranean or Eastern countries that have the smallest difference between sexes, with 5 points). When studying the number of hours spent on care, the prevalence for men is only higher than for women when it comes to spending one hour a week with this percentage increasing as the hours of care increase. In the second group of hours (between 2 and 20 h a week), Nordic women reach the maximum with 37% of all carers in the area, while men from the East and Anglo-Saxons are at the opposite end of the scale. With 18%, the Anglo-Saxons contribute the least. Finally, when it comes to long-time carers who spend more than 20 h a week, the percentage of carers is notably reduced in all countries, with women in all cases heading the data. Although the Nordic countries offer the most care to the family, there is a drastic change in the maximum level of assistance that implies a great deal of care for dependents, since they are the ones with the fewest carers, both in the case of women and men.

With regard to health indicators, the Mediterranean countries report feeling the most unsatisfied with their lives, with little difference between genders (around 5% in both), presenting more limitations in daily living (85% and 77% for women and men, respectively) and showing high levels of depression (reaching over 50% among women). It is worth highlighting that in the Eastern countries, in spite of being highly rated in terms of dissatisfaction and depression (5% and 56% in women carers, respectively), they suffer comparatively fewer limitations in daily living derived from health problems. The countries of the north, despite being more satisfied with life, as they are less depressed and happier, score highly in life limitations (similarly to the Mediterranean countries).

Healthy activities follow a pattern similar to the previous one. There is a greater habit of consuming fruits and vegetables among women, especially in the Nordic countries (92% in women) followed by those in the Mediterranean (91%). In contrast to a healthy diet, residents in the east stand out, as both men and women show the lowest percentages of fruit and vegetable consumption in Europe (76% in women and 66% in men). As for the normal healthy weight of carers, women control their weight better than men, increasing by 50% in the case of women living in Mediterranean, Nordic and Continental countries, and not exceeding 38% of the sample in men. Only 30% of men in Eastern countries manage to maintain a healthy weight.

Table 2 describes the main sociodemographic variables distributed by gender and country. Age is a factor to analyse, highlighting two life stages in which there is a greater number of carers than in other age groups: young adults and older adults. The latter reach a maximum peak of 30% in relation to other age groups in both sexes, as it is the most common age stage in all geographical areas. There is a notable decrease in the number of older carers in all countries, although in Mediterranean countries it is less noticeable. As regards the characteristics of the Nordic countries, the percentages in ages and sexes are more equal and have fewer differences than in other European countries. In the rest of the geographical areas, the gender by age maintains specific trends: in the Eastern countries there is a higher percentage of male carers in all age groups except for old age, while in the Continental and Anglo-Saxon countries, men give care more than women from the age of the elderly.

The level of studies shows great geographical differences. In the Mediterranean and Anglo-Saxon countries, the profile of the carer with a low level of education is more frequent, while in the Nordic countries, almost half of the women carers have reached university studies (48%). In the rest of the countries and age groups, the most common studies are secondary studies.

Another sociodemographic aspect to review would be the welfare or economic status, which shows a high percentage of carers in the Nordic countries living in a comfortable economic situation (exceeding 50% of them), with very low levels of people living with many economic difficulties (only 2% in women and 1.3% in men). The second group of more affluent countries would be located in the Continental area, for which the differences between living very comfortably and simply comfortably are few and far between, and in turn the most frequent. At the other extreme of well-being, the Mediterranean and Eastern countries would head the data of the carers who show the greatest difficulties (between 5 and 8%), although for all countries (except for the Nordic countries), the vast majority of the population would be defined in medium terms and living comfortably (oscillating between 45 and 55%).

3.2. Results of ESS estimates

This section describes the results obtained through the estimates. Table 3 collect the estimates for Model 1 for men and women respectively, Table 4 for Model 2, and Table 5 for lifestyles (simple logit: dy/dx). Table 6 replicates with the variables of Model 2 the probability of suffering depression no longer with a simple logit, but with an estimation technique ranked by individuals and countries (logit multilevel: dy/dx).

According to the estimations in Table 3, for women, there are greater limitations in daily living, greater depression and unhappiness (except in life dissatisfaction) as the number of hours of dedication increases. In terms of age, advancing years has a progressive influence, worsening the three determinants previously affected.

Economic difficulties are especially striking, since they negatively alter the assessment of life satisfaction and happiness, worsen the limitations in daily living and more intensively increase levels of depression (reaching 0.402 *** in the case of greater difficulties).

Table 1
Variables on healh status and informal care by groups of European countries and gender.

		Mediterranean countries	Nordic countries	Continental countries	Eastern countries	AngloSaxon countries	
Hour dedicated to care							
Helping family care	**Women**	35.04% (0.331-0.370)	44.45% (0.426-0.462)	36.40% (0.350-0.378)	28.61% (0.274-0.298)	30.39% (0.285-0.322)	
	Men	30.30% (0.283-0.322)	38.82% (0.370-0.405)	30.12% (0.287-0.314)	23.00% (0.216-0.243)	23.73% (0.218-0.256)	
Nº hour 1/week	**Women**	67.35% (0.654-0.692)	59.99% (0.582-0.617)	66.48% (0.651-0.678)	73.98% (0.728-0.751)	71.66% (0.698-0.734)	
	Men	73.20% (0.713-0.750)	66.15% (0.644-0.678)	72.59% (0.711-0.738)	78.87% (0.776-0.801)	78.35% (0.765-0.801)	
Nº hour 2-20 h/week	**Women**	25.51% (0.237-0.272)	37.35% (0.356-0.391)	29.88% (0.285-0.312)	20.09% (0.190-0.211)	22.09% (0.204-0.237)	
	Men	23.14% (0.213-0.249)	32.48% (0.307-0.341)	25.40% (0.241-0.267)	18.09% (0.176-0.201)	17.78% (0.160-0.195)	
Nº hour ≥ 20 h/week	**Women**	7.13% (0.060-0.081)	2.65% (0.020-0.032)	3.62% (0.030-0.041)	5.02% (0.053-0.065)	6.23% (0.052-0.072)	
	Men	3.65% (0.028-0.044)	1.35% (0.009-0.017)	2.06% (0.016-0.024)	2.21% (0.017-0.026)	3.86% (0.029-0.047)	
Indicator of health							
Dissaatisfac-tion in life	**Women**	5.58% (0.046-0.065)	1.05% (0.006-0.014)	1.72% (0.013-0.021)	4.78% (0.042-0.053)	2.37% (0.017-0.029)	
	Men	5.15% (0.042-0.060)	0.08% (0.004-0.011)	1.58% (0.012-0.019)	4.54% (0.038-0.051)	2.71% (0.019-0.034)	
Limitations in diary living derived from health problems	**Women**	85.08% (0.836-0.865)	85.99% (0.847-0.872)	79.83% (0.786-0.810)	52.91% (0.515-0.542)	65.55% (0.636-0.674)	
	Men	77.18% (0.754-0.789)	83.05% (0.817-0.844)	76.66% (0.754-0.779)	48.75% (0.471-0.503)	62.61% (0.604-0.647)	
Depression	**Women**	50.57% (0.485-0.525)	20.81% (0.193-0.222)	37.24% (0.358-0.386)	56.46% (0.551-0.577)	30.68% (0.288-0.325)	
	Men	32.02% (0.300-0.339)	14.44% (0.141-0.167)	27.42% (0.260-0.287)	46.54% (0.449-0.481)	25.32% (0.233-0.272)	
Unhappiness	**Women**	2.42% (0.018-0.030)	0.81% (0.004-0.011)	1.10% (0.007-0.014)	2.54% (0.021-0.029)	2.16% (0.015-0.027)	
	Men	1.00% (0.005-0.014)	0.47% (0.002-0.007)	0.86% (0.005-0.011)	3.09% (0.025-0.036)	1.67% (0.010-0.022)	
Healthy activities							
Eat fruit/vegetables	**Women**	90.65% (0.894-0.918)	91.52% (0.904-0.925)	89.61% (0.887-0.905)	76.41% (0.752-0.775)	89.43% (0.881-0.907)	
	Men	83.65% (0.820-0.852)	81.71% (0.803-0.831)	81.28% (0.801-0.824)	65.83% (0.643-0.673)	84.74% (0.830-0.864)	
Normal weight	**Women**	51.21% (0.491-0.532)	52.73% (0.509-0.545)	54.32% (0.528-0.557)	42.06% (0.407-0.434)	48.99% (0.468-0.511)	
	Men	37.34% (0.352-0.393)	38.87% (0.371-0.406)	38.12% (0.366-0.395)	30.85% (0.293-0.323)	37.11% (0.348-0.393)	

Source: European Social Survey (2014–2015). Own elaboration.
Interval coefficients at 95% confidence are provided in brakets.

The size of the place of residence also influences women, since women tend to feel more limitations in daily living if they live in a small city or in the countryside, as opposed to depression.

The countries where women carers live that have the most negative consequences are the Mediterranean and Eastern countries. These geographical areas share a greater dissatisfaction with life (0.017 *** and 0.013 ***, respectively) and high depression rates (0.256 *** and 0.309 ***). The carers of the Nordic countries are the ones who are most freed from suffering from depression. With regard to the limitations of daily living derived from health problems, carers from the Eastern countries perceive them to a lesser extent, followed by the Anglo-Saxons and then the Continentals.

As in the case of women, being a male carer increases the limitations in daily living derived from health problems and increases the risk of suffering depression (0.069 *** and 0.119 ***, respectively, in long-time carers). The trend suggests that the more hours of care spent, the poorer the indicators of health status in general, but this does not have to be translated into greater unhappiness.

The age of men who maintain the role of carer, as in women, has an influence when perceiving the progressive limitations of daily living, such that the older the carer, the more limitations there are. In this case, only depression is detected in older people (so this pathology would focus on this age group), without influencing happiness (as happened in women). Meanwhile a low level of educational instruction often leads to limitations of daily living (this could be due to the fact that carers with limited training cannot consider reducing their daily activities).

As in women, economic conditions have a very significant and progressive influence, leading to greater life difficulties and worse health indicators, especially in the case of depression (0.369 ***). The repercussions of the size of the city of residence coincide with the feminine tendency: small places are beneficial in terms of not suffering from depression and being happy, but they cause damage in terms of a greater risk of feeling limitations of daily living derived from health problems.

In the case of men, the Nordic countries are the most satisfied with life, while the most dissatisfied are those who reside in the Mediterranean countries, including women. Similarly, Nordic carers are more protected from depression than those who reside in a Mediterranean or Eastern countries. This is not the case as regards the limitations of daily living, since Anglo-Saxon, Continental and Mediterranean men are at less risk (-0.231 ***, -0.083 *** and -0.078 ***, respectively) than Nordic carers and/or those from the east (0.337 ***).

Table 2
Main sociodemographic variables by gender and country.

		Mediterranean countries	Nordic countries	Continental countries	Eastern countries	AngloSaxon countries
Age						
Young adult	**Women**	24.08% (0.223-0.258)	23.22% (0.216-0.247)	24.66% (0.234-0.259)	24.05% (0.229-0.251)	25.87% (0.240-0.276)
	Men	25.45% (0.236-0.272)	23.95% (0.224-0.254)	23.24% (0.219-0.245)	26.08% (0.247-0.274)	23.97% (0.220-0.259)
Intermediate adult	**Women**	17.51% (0.164-0.195)	18.4% (0.169-0.197)	19.25% (0.180-0.203)	17.73% (0.166-0.187)	19.27% (0.176-0.208)
	Men	19.64% (0.179-0.212)	18.69% (0.172-0.200)	18.69% (0.174-0.198)	19.79% (0.185-0.210)	16.93% (0.152-0.186)
Older adult	**Women**	27.36% (0.255-0.291)	29.29% (0.276-0.309)	30.23% (0.288-0.315)	28.92% (0.277-0.301)	27.98% (0.261-0.298)
	Men	28.23% (0.263-0.301)	28.85% (0.272-0.304)	31.20% (0.298-0.325)	30.30% (0.288-0.317)	28.22% (0.261-0.302)
Senior	**Women**	15.47% (0.40-0.169)	16.88% (0.155-0.182)	14.78% (0.137-0.158)	17.51% (0.165-0.185)	15.20% (0.137-0.166)
	Men	15.10% (0.136-0.165)	18.61% (0.172-0.200)	16.75% (0.156-0.178)	16.05% (0.149-0.171)	18.71% (0.169-0.204)
Gerontic	**Women**	15.58% (0.136-0.165)	12.21% (0.110-0.133)	11.08% (0.101-0.119)	11.79% (0.109-0.126)	11.68% (0.103-0.130)
	Men	11.58% (0.102-0.129)	9.90% (0.088-0.109)	10.14% (0.092-0.110)	7.78% (0.069-0.086)	12.17% (0.106-0.136)
Studies						
Primary studies	**Women**	47.52% (0.455-0.495)	18.38% (0.169-0.197)	23.73% (0.224-0.249)	20.13% (0.190-0.211)	36.95% (0.349-0.389)
	Men	44.70% (0.426-0.467)	19.05% (0.176-0.204)	17.61% (0.164-0.187)	18.14% (0.169-0.193)	37.90% (0.357-0.400)
Secondary studies	**Women**	24.93% (0.231-0.266)	33.01% (0.313-0.347)	46.27% (0.448-0.477)	51.42% (0.501-0.527)	26.93% (0.251-0.287)
	Men	29.69% (0.277-.,316)	41.98% (0.402-0.437)	46.10% (0.446-0.475)	58.39% (0.568-0.599)	27.59% (0.255-0.296)
University studies	**Women**	27.55% (0.257-0.293)	48.61% (0.467-0.504)	30.00% (0.286-0.313)	28.45% (0.272-0.296)	36.12% (0.341-0.380)
	Men	25.61% (0.237-0.274)	38.97% (0.371-0.407)	36.29% (0.348-0.377)	23.47% (0.221-0.247)	34.51% (0.323-0.366)
Status of life						
Life very confortable	**Women**	22.94% (0.212-0.246)	50.45% (0.486-0.522)	40.26% (0.388-0.416)	11.43% (0.105-0.122)	30.64% (0.287-0.325)
	Men	27.2% (0.253-0.290)	53.64% (0.518-0.554)	40.84% (0.393-0.422)	16.00% (0.148-0.171)	36.11% (0.339-0.382)
Life conformtable	**Women**	45.95% (0.439-0.479)	39.97% (0.381-0.417)	45.41% (0.439-0.468)	52.49% (0.511-0.538)	45.86% (0.438-0.479)
	Men	48.63% (0.465-0.507)	38.92% (0.371-0.406)	45.42% (0.439-0.469)	54.29% (0.527-0.558)	43.38% (0.411-0.456)
Life regular	**Women**	23.61% (0.218-0.253)	7.50% (0.065-0.084)	10.92% (0.100-0.118)	27.78% (0.266-0.289)	17.53% (0.159-0.190)
	Men	18.52% (0.168-0.201)	6.05% (0.051-0.069)	10.86% (0.099-0.117)	22.91% (0.216-0.242)	15.20% (0.135-0.168)
Life with many difficulties	**Women**	7.50% (0.064-0.085)	2.08% (0.015-0.025)	3.41% (0.028-0.039)	8.30% (0.075-0.090)	5.97% (0.050-0.069)
	Men	5.65% (0.046-0.066)	1.39% (0.009-0.018)	2.88% (0.023-0.033)	6.80% (0.060-0.075)	5.31% (0.043-0.063)
City						
Living in big city	**Women**	32.32% (0.304-0.342)	35.85% (0.341-0.375)	28.31% (0.269-0.296)	31.97% (0.307-0.331)	27.6% (0.257-0.294)
	Men	31.9% (0.299-0.338)	34.99% (0.332-0.367)	29.03% (0.276-0.303)	31.42% (0.299-0.328)	30.31% (0.282-0.323)
Living in small town	**Women**	31.28% (0.294-0.331)	31.24% (0.295-0.329)	29.05% (0.277-0.303)	37.94% (0.366-0.392)	37.52% (0.355-0.395)
	Men	31.88% (0.299-0.338)	31.13% (0.294-0.328)	26.92% (0.255-0.282)	34.69% (0.332-0.361)	37.37% (0.351-0.395)
Living in the contryside	**Women**	36.40% (0.344-0.383)	32.91% (0.312-0.346)	42.64% (0.411-0.440)	30.09% (0.288-0.313)	34.88% (0.329-0.368)
	Men	36.22% (0.342-0.382)	33.88% (0.321-0.356)	44.05% (0.425-0.455)	33.89% (0.324-0.353)	32.32% (0.302-0.344)

Source: European Social Survey (2014–2015). Own elaboration.
Interval coefficients at 95% confidence are provided in brakets.

With regard to the estimations of Table 4 (for women and men), we intend to study two aspects in depth. On the one hand, we shall analyse whether the constraints of working in domestic activities have a negative impact on the health status of the people who have carried out the survey, since these activities may pose an additional burden. On the other hand, we shall check whether the estimated parameters for the variables that inform whether a dependent person lives in the household are robust. It is observed in these estimations that despite the risk of technical problems of endogeny or unobserved characteristics, the estimated parameters

Table 3
Indicators of health problems in women and men *(Model 1: Logit, dy/dx)*.

	Dissaatisfaction in life		Limitations in diary lliving derived from health problemas		Depression		Unhappiness	
	Women	Men	Women	Men	Women	Men	Women	Men
Non caregivers (0-1 h)	–	–	–	–	–	–	–	–
Caregivers (2-20 h/w)	0.000	−0.002	0.071 ***	0.078 ***	0.038 ***	0.018 **	0.001	−0.001
Long-time carers (>20 h/w)	0.003	−0.002	0.039 **	0.069 ***	0.082 ***	0.119 ***	0.005 ***	−0.002
Young adult	−0.002	−0.008 ***	−0.059 ***	−0.051 ***	−0.030 **	−0.013	0.000	−0.003 **
Intermediate adult	–	–	–	–	–	–	–	–
Older adult	0.002	−0.001	0.058 ***	0.069 ***	0.003	0.015	0.003 *	0.000
Senior	0.001	−0.000	0.111 ***	0.149 ***	0.033 **	0.004	0.004 **	0.000
Gerontic	0.003	−0.001	0.115 ***	0.168 ***	0.090 ***	0.057 ***	0.005 **	0.001
Primary studies	0.008 ***	0.001	0.014	−0.021 *	0.073 ***	0.045 ***	0.008 ***	0.002
Secondary studies	0.005 *	0.001	−0.012	−0.025 ***	0.034 ***	0.025 ***	0.003 *	0.001
University studies	–	–	–	–	–	–	–	–
Live very confortable	–	–	–	–	–	–	–	–
Live confortable	0.023 ***	0.020 ***	−0.006	−0.005	0.098 ***	0.093 ***	0.011 ***	0.007 ***
Life regular	0.039 ***	0.035 ***	0.029 ***	0.038 ***	0.262 ***	0.250 ***	0.019 ***	0.014 ***
Life with many difficulties	0.055 ***	0.049 ***	0.046 ***	0.051 ***	0.402 ***	0.369 ***	0.030 ***	0.025 ***
Living in big city	–	–	–	–	–	–	–	–
Living in small town	0.000	0.002	0.018 **	0.013	0.010	−0.022 **	0.001	−0.001
Living in the contryside	−0.001	0.000	0.033***	0.023 **	−0.016 *	−0.038 ***	−0.001	−0.003 **
Mediterranean c.	0.017 ***	0.020 ***	−0.022	−0.078 ***	0.256 ***	0.129 ***	0.003	0.000
Anglo-saxon country	0.004	0.011 ***	−0.231 ***	−0.231 ***	0.070 ***	0.074 ***	0.005 **	0.005 **
Continental country	0.004	0.006 *	−0.082 ***	−0.083 ***	0.183 ***	0.128 ***	0.000	0.002
Eastern country	0.013 ***	0.015 ***	−0.333 ***	0.337 ***	0.309 ***	0.254 ***	0.004 *	0.008 ***
Nordic country	–	–	–	–	–	–	–	–
Pseudo-R^2	0.125	0.128	0.104	0.092	0.099	0.092	0.100	0.143

Source: European Social Survey (2014–2015). Own elaboration.
[a]Reference variable.
***, **, * Indicate that the coefficient is statistically significant at 1%, 5% y 10%.
The variables by countries include in the Mediterranean Country, which indicates residing in Spain, France and Portugal. Anglo-Saxon country, residing in Ireland or Great Britain; Continental country, indicates reside in Australia, Switzerland, Belgium or Germany. This country indicates residence in the Czech Republic, Estonia, Hungary, Poland, Slovenia or Lithuania. The Nordic country variable indicates residence in Denmark, Finland, Norway or Sweden.

Table 4
Indicators of health problems in women and men *(Model 2: Logit, dy/dx)*.

	Dissaatisfaction in life		Limitations in diary living derived from health problemas		Depression		Unhappiness	
	Women	Men	Women	Men	Women	Men	Women	Men
Non-caregivers (0-1 h)	–	–	–	–	–	–	–	–
Caregivers (2-20 h/w)	0.001	−0.002	0.069 ***	0.076 ***	0.038 ***	0.017 *	0.001	−0.001
long-time carers (>20 h/w)	0.004 *	−0.003	0.024	0.052 **	0.081 ***	0.115 ***	0.006 ***	−0.002
Domestic work	−0.005 ***	0.001	0.068 ***	0.142 ***	0.001	0.024 *	−0.003 *	−0.000
Young adult	−0.001	−0.008 ***	−0.061 ***	−0.050 ***	−0.030 **	−0.013	0.000	−0.003 **
Intermediate adult	–	–	–	–	–	–	–	–
Older adult	0.002	−0.001	0.061 ***	0.071 ***	0.003	0.015	0.003 *	0.000
Senior	0.000	−0.000	0.118 ***	0.152 ***	0.034 **	0.004	0.004 **	0.000
Gerontic	0.003	−0.001	0.125 ***	0.171 ***	0.091 ***	0.058 ***	0.004 **	0.001
Primary studies	0.008 ***	0.001	0.006	−0.018 *	0.072 ***	0.046 ***	0.008 ***	0.002
Secondary studies	0.005 ***	0.001	−0.014 *	−0.022 **	0.034 ***	0.025 ***	0.003 *	0.001
University studies	–	–	–	–	–	–	–	–
Life very confortable	–	–	–	–	–	–	–	–
Life confortable	0.023 ***	0.020 ***	−0.005	−0.004	0.098 ***	0.093 ***	0.010 ***	0.007 ***
Life regular	0.038 ***	0.035 ***	0.031 ***	0.037 ***	0.262 ***	0.250 ***	0.018 ***	0.014 ***
Life with difficulties	0.055 ***	0.049 ***	0.047 ***	0.046 **	0.402 ***	0.368 ***	0.030 ***	0.025 ***
Living in a big city	–	–	–	–	–	–	–	–
Living in a small town	0.000	0.002	0.017 **	0.013	0.010	−0.022 **	0.002	−0.001
Living in a contryside	−0.001	−0.000	0.030 ***	0.023 **	−0.016 *	−0.038 ***	−0.000	−0.003 **
Mediterranean c.	0.017 ***	0.020 ***	−0.022	−0.068 ***	0.256 ***	0.130 ***	0.003	0.000
Anglo-Saxon contries	0.005	0.011 ***	−0.235 ***	−0.221 ***	0.070 ***	0.075 ***	0.005 **	0.005 **
Continental countries	0.004	0.006 *	−0.085 ***	−0.077 ***	0.183 ***	0.129 ***	0.000	0.002
Eastern countries	0.013 ***	0.015 ***	−0.332 ***	−0.328 ***	0.309 ***	0.256 ***	0.004 *	0.008 ***
Nordic contries	–	–	–	–	–	–	–	–
Pseudo-R^2	0.126	0.128	0.107	0.097	0.099	0.092	0.101	0.143

Source: European Social Survey (2014–2015). Own elaboration.
[a]Reference variable.
***, **, * Indicate that the coefficient is statistically significant at 1%, 5% y 10%.

Table 5
Indicators of healthy activities (Model 2: Logit, dy/dx).

	Eat fruit and vegetable every day		Normal weight	
	Women	Men	Women	Men
Non-caregiven (0-1 h)	–	–	–	–
Caregiven (2-20 h/w)	0.038 ***	0.064 ***	−0.015 *	−0.007
Long caregiven (>20 h/w)	0.039 ***	0.040 *	−0.058 ***	−0.069 **
Domestic work	0.019 ***	0.005	−0.021 **	0.001
Young adult	−0.010	−0.007	0.089 ***	0.119 ***
Intermediate adult	–	–	–	–
Old adult	0.018 ***	0.036 ***	−0.010 ***	−0.045 ***
Senior	0.053 ***	0.086 ***	−0.157 ***	−0.059 ***
Gerontic	0.062 ***	0.111 ***	−0.109 ***	0.035 **
Primary studies	−0.091 ***	−0.077 ***	−0.125 ***	−0.056 ***
Secundary studies	−0.060 ***	−0.085 ***	−0.065 ***	−0.053 ***
University studies	–	–	–	–
Life very confortable	–	–	–	–
Life confortable	−0.037 ***	−0.043 ***	−0.084 ***	−0.032 ***
Regular life	−0.080 ***	−0.098 ***	−0.136 ***	−0.024 *
Life with difficulties	−0.119 ***	−0.142 ***	−0.161 ***	0.024
Living in a big city	–	–	–	–
Living in a small town	−0.001	−0.007	−0.004	−0.022 **
Living in a countryside	0.012 **	0.008	−0.027 ***	−0.035 ***
Mediterranean countries	0.030 ***	0.061 ***	0.046 ***	−0.005
Anglo-saxon countries	0.007	0.062 ***	0.000	−0.012
Continental countries	−0.004	0.012	0.044 ***	0.000
Easten countries	−0.088 ***	−0.093 ***	−0.056 ***	−0.073 ***
Nordic countries	–	–	–	–
Pseudo-R^2	0.079	0.063	0.055	0.025

Source: European Social Survey (2014–2015). Own elaboration.
[a]Reference variable.
***, **, * Indicate that the coefficient is statistically significant at 1%, 5% y 10%.

Table 6
Indicators of depression (Model 3 y 4: Xtmelogit, regression coefficient).

	WOMEN		MEN	
	Model 3	Model 4	Model 3	Model 4
Fixed Effects				
Non-caregivers (0-1 h)	–	–	–	–
Caregivers (2-20 h/w)	0.226***	0.227***	0.136***	0.134***
Long caregivers (>20 h/w)	0.380***	0.383***	0.650***	0.638***
Domestic work	–	−0.015	–	0.090
Young adult	−0.108**	−0.108*	−0.029	−0.029
Intermediate adult	–	–	–	–
Old adult	0.014	0.013	0.100*	0.101*
Senior	0.130**	0.128**	0.014	0.015
Gerontic	0.380***	0.378***	0.291***	0.294***
Primary studies	0.371***	0.373***	0.315***	0.318***
Secundary studies	0.153***	0.153***	0.095**	0.097**
University studies	–	–	–	–
Life very confortable	–	–	–	–
Life confortable	0.421***	0.421***	0.476***	0.476***
Regular life	1.081***	1.081***	1.234***	1.233***
Life with difficulties	1.674***	1.674***	1.802***	1.799***
Living in a big city	–	–	–	–
Living in a small town	0.026	0.026	−0.121**	−0.120**
Living in a countryside	−0.027	−0.027	−0.150***	−0.149***
Random Effects				
Σ	0.551	0.550	0.517	0.518
Prob > chibar2	0.000	0.000	0.000	0.000
ANOVA: Welfare groups				
Between Groups	7303.147 71%	7296.926 71%	6238.327 70%	6288.549 70%
Within Groups	2912.077 29%	2916.173 29%	2667.934 30%	2652.125 30%
Total	10215.224	10213.099	8906.262	8940.674

Source: European Social Survey (2014–2015). Own elaboration.
[a]Reference variable.
***, **, * indicate that the coefficient is statistically significant at 1%, 5% y 10%.

of the hours of care variables remain very stable. In both men and women, the estimated coefficients are slightly higher for the case of age variables, in addition to living comfortably in men. In the latter gender group, studies and the country to which one belongs are slightly lost in explanatory power.

Being a woman carer harms satisfaction in life and happiness, but it is not intensified by other domestic tasks. It is not the same in the limitations of daily living derived from health problems, where both being a carer and a woman doing domestic work negatively affects health. In men, dedicating as much time and effort to domestic tasks as to being carers affects negatively both the limitations of daily living derived from health problems and the probability of experiencing depression.

Healthy activities are also affected in carers. After the analysis of the estimated results, and as can be seen in Table 5, it is observed that being a carer (both male and female) implies an improvement in the consumption of daily fruits and vegetables (estimates higher than 0.038 ***), although this does not correspond to the maintenance of the ideal weight, since in giving more hours of care, less healthy weights are maintained (-0.058 *** in women and -0.069 ** in men). Doing domestic work also favours the consumption of fruits and vegetables in women (0.019 ***), and has a harmful effect on weight (-0.021 **).

As regards the age of carers, both in women and men, as the life cycle advances, the consumption of fruits and vegetables improves, but their weight does not remain healthy, especially in old age. Academic training is also significant, since the higher the level of studies in both sexes, the greater the consumption of a healthy diet and maintenance of adequate weight.

A more settled diet richer in fruits and vegetables occurs among carers in the Mediterranean countries for both sexes (0.030 *** and 0.061 ***, respectively), along with Anglo-Saxon men (0.062 ***). Women from Mediterranean countries also have a better ideal body weight (0.046 ***), along with those from Continental countries (0.044 ***). Eastern countries have worse levels of healthy diet consumption and weight in both sexes (-0.088 *** and -0.093 *** for women and men according to diet, and -0.056 *** and -0.073 *** for normal weight). In general, for female carers, living in the countryside helps maintain an adequate supply of nutrients from fruits and vegetables, although remaining in this environment makes it difficult to maintain weight in both sexes. On the other hand, living in difficult conditions influences the consumption of a healthy diet (-0.119 *** in women and -0.142 *** in men) and the maintenance of weight (-0.161 *** in women).

The results obtained through a simple logit model remain robust using a multilevel logit that allows us to control not only by dependent variable fixed effects, but also by random effects. Although the explanatory variables manage to explain 50% of the variation of the dependent variables, another 50% will underlie the unobserved characteristics of the countries. We also conclude that differences in the dispersion of data related to dependent variables are higher among individuals from countries with different welfare systems than among those from countries with the same welfare system. Therefore, it is guaranteed that the different public investment systems have a statistically significant impact on the well-being of the people who have dependents dependent on them.

4. Discussion

This empirical work represents a solid basis for guiding policies in the context of long-term care, identifying informal carers and what characteristics should be changed to improve their health status [11]. Previous studies have shown the difficulties of countries in general obtaining data on informal care [12], so few focus on this and the self-assessment of their health [13–15]. The main data of the research show that being a carer is associated with a poor

state of perceived health, as found in other studies [16]. In general, this research shows that being a woman spending many hours caring for a dependent person, having a low level of education and presenting economic difficulties, as well as residing in southern or eastern European countries, would be considered risk factors for the health of the carer.

From the total number of respondents, more than 30% refer to helping someone who requires care (at least one hour a day). This percentage is higher than that found in studies at European level (which indicate 9% of carers), although it is similar to previous trends by country, since the Nordic and Continental countries have the highest number of carers [16]. Following the analysis of this study, we would add a third group of countries to the ranking of the most carers: the Mediterranean countries. These geographical areas are the most prone to informal care, implying that they are the ones that spend the most time exercising the role of carer.

The implicit social imposition of women as a care agent is widely criticized because of the gender equality principles [17]. The statistical analyses carried out reflect important gender differences, especially in the Anglo-Saxon countries, and less inequality in the Mediterranean countries and those in the east. It is the line with other investigation that found differences between north and south [9]. Men are often carers when it comes to just a few hours of dedication, clearly highlighting the female sex as long-time carers of dependents. This is compounded by the fact that women suffer more health problems. Informal care presents the same indicators but more intensively. The group of people over 75 years old, shows a general gender equality in most European countries [5,18], as found in this study. It can be concluded that being a female carer predisposes one to suffer symptoms from depression and from feeling unhappy, independently of other domestic work. In men, both the performance of domestic tasks and providing care negatively affect the limitations of daily living and suffering from depression.

In comparing the health indicators measured, dissatisfaction with life is the one that is least influenced in both genders, with no large differences found between the two groups. This contradicts previous studies in which a high frequency of feeling dissatisfied is found [19], but it is in line with other studies in which it has not been demonstrated that the time of care or attention frequency are sufficiently relevant data to modify this indicator [20,21].

State of mind measured, among others, through depression indicator, depends on gender, with more intense relationships being found in male carers of long-time dependents. In turn, the risk of depression is greater as the daily hours of care increase. This finding corroborates other investigations [9]. The high intensity of the demand for care and its consequences for one's state of mind are collected in numerous bibliographical references [22–26], although in this study it is clearer (around 50%), having compared it with other papers whose percentages are only appoximately 20% of [24,27]. At this level, differences are observed between the northern countries and other European countries, unlike previous results [9]. This study shows that carers in northern countries suffer the least depression, in contrast to what recent analyses reveal in which Anglo-Saxon carers carry fewer depressive symptoms [16].

Despite the negative consequences previously described for women, carers (as well as doing housework) take better care of themselves, consume more fruits and vegetables (especially in Nordic and Mediterranean countries) and maintain a more appropriate weight. Nevertheless, for both sexes, lifestyle changes due to giving care lead to a decrease in healthy intake as hours of care increase and a worsening of weight, perhaps because they have less time to take care of themselves. In turn, with the advancing age of the carer, the consumption of fruit and vegetables improves progressively, but their weight does not remain healthy, especially in old age. This may possibly be related to a maintenance of the healthy diet in older people because of the tradition related to more home-made and healthier food (in contrast to fast food, which can be linked to younger people), or because of not having to combine caring with working and therefore having more time to cook and buy, or even because of the natural tendency for the metabolism to slow down with age and therefore to gain weight. This use of time dedicated to other care activities affects the probability of investing time in physical exercise, influencing pshysical and mental health [28–31]. Some studies focused on the carer's healthy activities positively influenced his lifestyle and physical condition in Sweden and Great Britain [32], but despite of this, the line of research on the development of healthy habits in the carers it is scarce and insufficient in its results.

The life cycle of the carer is analysed carefully since both young adults and older adults stand out in the performance of this role. The Nordic countries are the ones with the most constant number of carers throughout the different life stages, except for the elderly (Mediterranean countries have more carers in this age group). These data would refute other previous ones in which it is believed that a similar percentage sample is given in all countries of male carers aged over 75 years [5,18]. Popularly, and as some studies confirm, it can be considered that feeling old can lead to worse health levels [33], and in turn to a decrease in life satisfaction [19,34,35]. However, this study does not corroborate this, since it is shown that one only feels limitations of daily living derived from health problems in old age, partly due to one's own aging process. The older population of both sexes, but more so among women, may also have more symptoms of depression. These last data of the study would be more similar to those in the study of Subasi and Hayran (2005) [36].

Another difference among carers that may reflect the quality of policies in the population refers to the level of education attained. The carers from Nordic countries have the most university-level studies, while in the other countries the level of secondary education predominates. This aspect, in turn, can be a protective factor, since at a higher level of studies, there may be minor consequences for the health indicators of carers. These relevant data may be supported by previous research that indicates that there is a statistically significant link between a high educational level and a lower tendency to feel dissatisfied [35–37].

Apart from these data, economic conditions greatly influence carers and their well-being, with once again the Nordic countries showing the best concentration of this in this study, which in turn favours the reduction of the indicators of negative health economic comfort influences in both sexes in all countries, although it harms women more intensely (especially affecting depression). The most socially vulnerable individuals would be those who would prefer and need stronger support from the state [38]. This study shows that the countries that maintain more carers in worse conditions are those that in turn reflect worse state policies aimed at helping carers. Both the educational level and the socio-economic welfare situation are protective factors of carers that have been found in the scientific literature [35–37].

The variables analysed in this study reflect the consequences of maintaining different welfare policies. The Nordic countries have a high percentage of carers in general, higher than for other countries, but the number drops noticeably and they position themselves in the country where fewer informal carers are linked to long-time dependents. In turn, they are the most satisfied and those with the lowest degree of depression, but they experience the most limitations in daily living derived from health problems. Their expectations of support from the government are high and the sense of limitation is greater, so they may be better able to end care with public support and resources [39,40].

After the analysis of the results, we can see the north-south differences in Europe, as shown by previous studies [8], and how public policies have been able to influence these results [2,41,42]. In

contrast, the vast majority of the most striking data are found in two groups of countries (the Nordic and the Mediterranean), although those in the east resemble those in the south, whose characteristics are limiting for the support of long-term care [43]. In addition to the differences between policies, in the Mediterranean countries, the fact that the population tends to be older [7] and the important tendency of intergenerational help and maintaining the family bond in these countries may all be influential. Mediterranean and Eastern carers are harmed in almost all health indicators (more dissatisfied and more depressed) with hardly any gender differences. Another clearly influential aspect is the limitation in infrastructure and resources, together with less political concern to take these effects into account [9].

Based on the above, it is evident that those in a situation of dependency generate for themselves and for their environment an image of social vulnerability that demands vigilance and observation. The three main vulnerabilities that have been highlighted are the pressure on non-professional women carers, users of the system, and countries located in the south and east. In summary, the scientific literature continues to be scarce when examining the effect on the level of health and well-being of individuals and their families, carers and dependents, and by conducting research such as the present one, we set out to identify the reality at a European level. The need for more sophisticated indicators of health and social assistance increases as societies evolve. Given the scarcity of information, the European Union is developing health indicators (Health Indicators of the European Community), but long-term care in the community remains a pending issue to be implemented politically and coordinated both at the health and social levels.

This study shows that being a woman, with an intense load of hours of care, with a low level of education and economic difficulties, as well as belonging to countries in the south or east of Europe, are considered to be risk factors for carers. Female carers tend to have more symptoms of depression than men, and feel more unhappy. Despite the negative consequences previously described for women, carers take better care of themselves, consume more fruits and vegetables, and maintain a better healthy weight

This all emphasizes the great differences between the north and the south of Europe. Carers in Mediterranean countries and those in Eastern Europe experience worse health conditions, while the welfare policies of the Nordic countries are reflected in better health carers. Finally, we emphasize that the carers of the Mediterranean countries take better care of themselves and maintain a healthy weight better.

This study shows some important strengths that offer a point of view and an analysis at European level about the situation of the informal care taker. This is needed to identify evidence-based politics and their weaknesses/vulnerabilities to guide and promote some changes with positive consequences on the European welfare state. There are also some limitations. It is necessary to expand some health indicators that reflect deeper this reality. Longitudinal analysis could provide more information about casual relation among the selected variables studied in this research.

5. Conclusion

These results show political implications and the need to apply gender policies to reconcile and regulate the distribution of the income of economically more vulnerable families, as well as the provision of social services to help dependents.

CRediT authorship contribution statement

Mª Eugenia Estrada Fernández: Conceptualization, Investigation, Project administration, Methodology, Resources, Software, Writing - original draft. **Ana I. Gil Lacruz:** Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Supervision, Writing - review & editing. **Marta Gil Lacruz:** Investigation, Supervision, Writing - review & editing. **Antonio Viñas López:** Investigation, Supervision, Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no conflict of interest.

References

[1] Daly M, Lewis J. The concept of social care and the analysis of contemporary welfare states. The British Journal of Sociology 2000;51(June 2):281–98.
[2] Bettio F, Plantenga J. Comparing care regimes in Europe. Feminist Economics 2004;10(1):85–113.
[3] Stark A. Warm hands in cold age-On the need of a new world order of care. Feminist Economics 2005;11(2):7–36.
[4] Vara MJ. Long-term care for elder women in Spain: advances and limitations. Journal of Aging and Social Policy 2014;26(4):347–69.
[5] Colombo F, Llena-Nozal A, Mercier J, Tjadens F. Help wanted? Provid-ing and paying for Long-term care. OECD Health Policy Studies.París: OECD; 2011.
[6] Van Houtven CH, Norton EC. Economic effects of informal care. Schweizerische Zeitschrift für Volkswirtschaft und Statistik; 2006. p. 13–22.
[7] Riedel M, Kraus M. Informal care provision in Europe: regulation and profile of providers. Bruselas: ENEPRI Research report nº 96; 2011.
[8] Bolin K, Lindgren B, Lundborg P. Your next of kin or your own career? Caring and working among the 50+ of Europe. Journal of Health Economics 2008;27(May 3):718–38.
[9] Bremer P, Cabrera E, Leino-Kilpi H, Lethin C, Saks K, Sutcliffe C, et al. Informal dementia care: consequences for caregivers' health and health care use in 8 European countries. Health Policy 2015;119(November 11):1459–71.
[10] IMSERSO. Libro blanco: Atención a las personas en situación de dependencia en España. Madrid: Ministerio de trabajo y Asuntos sociales; 2005.
[11] Cameron ID, Aggar C, Robinson AL, Kurrle SE. Assessing and helping carers of older people. The British Medical Journal 2011;343(September):d5202.
[12] Courtin E, Jemiai N, Mossialos E. Mapping support policies for informal carers across the European Union. Health Policy 2014;118(October 1):84–94.
[13] De Labra C, Millan-Calenti JC, Bujan A, Nunez-Naveira L, et al. Predictors of caregiving satisfaction in informal caregivers of people with dementia. Archives of Gerontology and Geriatrics 2015;60(May 3):380–8.
[14] Legg L, Weir CJ, Langhorne P, Smith LN, Stott DJ. Is informal caregiving independently associated with poor health? A population-based study. Journal of Epidemiology & Community Health 2013;67(January 1):95–7.
[15] Schulz R, Newsom J, Fleissner K, de Camp AR, Nieboer AP. The effects of bereavement after family caregiving. Aging & Mental Health 1997;1:269–82.
[16] Kaschowitz J, Brandt M. Health effects of informal caregiving across Europe: a longitudinal approach. Social and Science Medicine 2017;173(January):72–80.
[17] Bettio F, Simonazzi A, Villa P. Change in care regimes and female migration: the' care drain' in the Mediterranean. Journal of Eurpean Social Policy 2006;16(3):271–85.
[18] Rodrigues R, Huber M, Lamura G. Facts and figures on healthy ageing and long-term care. Europe and North America. Viena: European Center for Social Welfare Policy and Research; 2012.
[19] Ferring D, Balducci C, Burhold V. Life satisfaction of older people in six European countries: findings from the European Study on Adult Well-being. European Journal of Ageing 2004;1:15–25.
[20] Cohen CA, Pushkar D, Shulman KI, Zucchero CA. Positive aspects in caregiving: an overlooked variable in research. Canadian Journal on Aging 1994;13:378–91.
[21] Lopez J, Lopez-Arrieta J, Crespo M. Factors associated with the positive impact of caring for elderly and dependent relatives. Archives of Gerontology and Geriatrics 2005;41(July 1):81–94.
[22] Brodaty H, Donkin M. Family caregivers of people with dementia. Dialogues in Clinical Neuroscience 2009;11(2):217–28.
[23] Cooper C, Balamurali TB, Livingston G. A systematic review of the prevalence and covariates of anxiety in caregivers of people with dementia. International Psychogeriatrics 2007;19(April 2):175–95.
[24] Rodrigues R, Schulman K, Schmidt A, Kalavrezou N, Matsaganis M. The indirect costs of long-term care. Brussels: Belgium: European Commission; 2013.
[25] Schulz R, Martire LM, Klinger JN. Evidence-based caregiver interventions in geriatric psychiatry. Psychiatric Clinics of North America 2005;28(December 4):1007–38, x.
[26] Teri L, Logsdon RG, Uomoto J, McCurry SM. Behavioral treatment of depression in dementia patients: a controlled clinical trial. The Journal of Gerontology, series B, Psychological Sciences and Social Sciences 1997;52(July 4):159–66.
[27] Hiel L, Beenackers MA, Renders CM, Robroek SJ, Burdorf A, Croezen S. Providing personal informal care to older European adults: should we care about the caregivers' health? Preventive Medicine 2015;70(January):64–8.
[28] Burton LC, Newsom JT, Schulz R, Hirsch CH, German PS. Preventive health behaviors among spousal caregivers. Preventive Medicine 1997;26(March 2):162–9.
[29] Schulz R, Newsom J, Mittelmark M, Burton L, Hirsch C, Jackson S. Health effects of caregiving: the caregiver health effects study: an ancillary study of the Cardiovascular Health Study. Annals of Behavioral Medicine 1997;19(2):110–6.

[30] Warburton DE, Nicol CW, Bredin SS. Health benefits of physical activity: the evidence. Canadian Medical Association Journal 2006;174(March 6):801–9.
[31] Bauman AE. Updating the evidence that physical activity is good for health: an epidemiological review 2000–2003. Journal of Science and Medicine in Sport 2004;7(April 1 Suppl):6–19.
[32] Borg C, Fagerstrom C, Balducci C, Burholt V, Ferring D, Weber G, et al. Life satisfaction in 6 European countries: the relationship to health, self-esteem, and social and financial resources among people (Aged 65-89) with reduced functional capacity. Geriatric Nursing 2008;29(January 1):48–57.
[33] Persson G, Bostrom G, Allebeck P, Andersson L, Berg S, Johansson L, et al, Chapter 5 Elderly people's health 65 and after. Health in Sweden: the national public health report 2001. Scandinavian Journal of Public Health Supplement 2001;58:117–31.
[34] Benyamini Y, Leventhal H, Leventhal EA. Self-rated oral health as an independent predictor of self-rated general health, self-esteem and life satisfaction. Social Science and Medicine 2004;59(September 5):1109–16.
[35] Melendez JC, Tomas JM, Oliver A, Navarro E. Psychological and physical dimensions explaining life satisfaction among the elderly: a structural model examination. Archives of Gerontology and Geriatrics 2009;48(May 3):291–5.
[36] Subasi F, Hayran O. Evaluation of life satisfaction index of the elderly people living in nursing homes. Archives of Gerontology and Geriatrics 2005;41(July 1):23–9.
[37] Fernández-Ballesteros R, Zamarrón MD, Ruiz MA. The contribution of sociodemographic and psychosocial factors to life. Aging and Society 2001;21:25–43.
[38] Blekesaune M. Economic conditions and public attitudes to welfare policies. European Sociological Review 2007;23:393–403.
[39] Eurobarometer. Eurobarometer. Special eurobarometer 378-active ageing. Bruselas: European Commission; 2012.
[40] Mair CA, Quinones AR, Pasha MA. Care preferences among middle-aged and older adults with chronic disease in Europe: individual health care needs and national health care infrastructure. The Gerontologist 2016;56(August 4):687–701.
[41] Daaltand SO, Herlofson K. Ľost solidarityŸor čhanged solidarity.. A comparative European view of normative family solidarity. Aging and Society 2003;23:537–60.
[42] Kikuzawa S, Olafsdottir S, Pescosolido BA. Similar pressures, different contexts: public attitudes toward government intervention for health care in 21 nations. Journal of Health and Social Behavior 2008;49(December 4):385–99.
[43] Andel R. Aging in the Czech Republic. Gerontologist 2014;54(December 6):893–900.