Paid and unpaid support received by co-resident informal caregivers attending to community-dwelling older adults in Spain

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Abstract In this study from Spain, support received from outside the household by informal caregivers of people older than 64 years is analysed. The Spanish Time Use Survey (2002–2003) is used to examine: (1) the proportion of co-resident informal caregivers receiving paid and unpaid support by persons from outside the home; (2) the main factors associated with receipt of external paid and unpaid support; and, (3) factors linked to the amount of support received in terms of time. The study sample included 404 caregivers who cohabited with the person receiving care. We used a modified Andersen Behavioural Model as the analytic framework. Significant differences are observed in receipt of support according to predisposing, enabling and need factors. Overall, support (paid and unpaid) is significantly lower among households with women caregivers. In comparison with the least educated caregivers, higher levels of paid support are observed among those with secondary school or higher education, even when income, household size and receiver's age are included in the model. After controlling for care receivers' disability level and age, unpaid support is significantly higher among employed caregivers, spouses and caregivers living in medium-sized cities, versus unemployed caregivers, other relatives and caregivers living in large cities,

respectively. These data highlight the inequalities of resources in terms of caregiver gender, socio-economic status and population size. The findings underscore the need to extend analysis not only to primary caregivers, but to caregiving networks and other types of caregiver support as well.

Keywords Informal care · Paid carers · Support · Help · Older people · Spain

Introduction

A sizeable proportion of informal caregivers receive support from other relatives or from formal services, and such support is a key issue in caregiver and care receiver quality of life (Wenger 1990; IMSERSO 2005a). In spite of all the literature about informal caregivers, there are few studies examining paid and unpaid support for households with informal caregivers and identifying the conditions under which they emerge, especially in Mediterranean countries.

It is acknowledged that Familist welfare regimes such as Spain are shaped by particular characteristics and require specific analyses separate from other type of welfare regimes (Esping-Andersen 1999). Familist welfare regimes are characterized by the intense participation of the family in older people care responsibilities. In the case of Spain, it has been estimated that in 2007 only 21% of dependent people of all ages received some kind of formal care (public or private) (European Commission 2009). The remaining 79% received care exclusively from their families or did not receive care at all; 20 points lower than the average in Europe (27 countries). Pommer et al. (2007), using data from the Survey of Health, Ageing and Retirement in Europe 2004 (SHARE), found that Spain was the

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third of 10 European countries (after Greece and Italy) with the lowest coverage of formal help to disabled people aged 50 years or over.

According to Casado-Marín (2006) and Rogero-García (2009), based on data from 1999 and 2003, about 15% of older Spanish dependent community-dwelling adults received private care, 8% received support from public services and non-paid volunteers constituted around 1% of providers of support. A substantial proportion of private care was hired directly by the dependent person or the families, and a small minority was contracted through private organisations (Mestheneos and Triantafyllou 2005). Co-residence between caregiver and care receiver is higher in the European countries where public care services are less developed (Sarasa and Mestres 2007). The Eurofam-care National Background Report for Spain found that 59% of informal caregivers live with the care receiver (Larizgoitia Jaúregi 2004).

This study focuses on two types of support received by households of disabled people and their informal caregivers in Spain: from other relatives or acquaintances (unpaid) and from private services (paid by the older person and/or the family). The goals of this article are: (1) to estimate the proportion of co-resident informal caregivers with paid (by the family) and unpaid (informal) support furnished by persons from outside the home; (2) to identify the factors associated with both types of support and (3) to quantify such support in terms of hours of help received over the preceding 4 weeks. It should be stressed that, rather than analysing factors linked to becoming an informal caregiver, this study analyses factors linked to the type of support received once informal care is already being provided.

Identifying coverage, intensity and type of support to households with dependent people may contribute to a better understanding of what human resources are actually being used, and, consequently, of what services are more appropriate to establish. Furthermore, identifying the characteristics of the households receiving different types of support may be useful to implement better the Spanish National Dependency System, which started up in 2007 and is called the fourth column of the welfare state (Carretero et al. 2006, 2009) because of the broad implementation of services for dependent persons and their informal caregivers.

Unlike other European countries (e.g., Austria, Denmark, Germany, Netherlands, Norway or Sweden) and regardless of the amount of time devoted to care, informal caregivers in Spain are generally excluded from the formal structure of social protection (Mestheneos and Triantafyllou 2005). The *dependency criterion* is the specific feature that distinguishes care from other types of support, with informal care existing where receivers' functional status prevents them from performing Activities of Daily Living

(ADLs) by themselves. These basic activities are typically divided into three categories: physical ADLs (e.g. personal hygiene), instrumental ADLs (e.g. meal preparation) and mobility ADL (e.g. getting around the house) (Fillenbaum 1995). In this context, support is a wider concept which can include direct care provided to the dependent person and also indirect help for the caregiver household (e.g. housework). There are three types of formal care, namely: (1) public (funded, at least in part, by public institutions); (2) private (paid for exclusively by families) and (3) from non-profit organisations. Spanish families are increasingly resorting to the private care sector to deal with the dependency of their older adult members (Izquierdo et al. 2003). In 2004, about 40% of paid caregivers attending to community-dwelling older adults were immigrants, 93% were hired without the intermediation of any company and only 17% had a formal contract (IMSERSO 2005b).

Formal service providers interact with the informal sector (Twigg 1993); that is while informal caregivers have an influence on the choice and supply of formal care, the delivery of formal services is linked to the intensity and type of informal care provided (Walker et al. 1995). Two main models of the relationship between formal and informal care have been defined: a *complementary task-specific model* (Carpentier and Ducharme 2003) in which formal care emerges when a dependent person's needs exceed informal caregiver capacities; and a *supplementary or substitution model*, where formal and informal caregivers provide similar types of care, and are therefore replaceable (Davey and Patsios 1999). The study by Bonsang (2009) of Europe using data from SHARE 2004 found that informal care is an effective substitute for formal care as long as the needs of the dependent older adults are low and require unskilled care. Similar findings were found for Spain by Jimenez-Martín and Vilaplana (2008).

Factors associated with support provided to older adults and their informal caregivers

A study conducted in an autonomous Spanish region (Comunidad Valenciana) ($n = 153$) in 2001 showed that about 86% of informal primary caregivers of dependent seniors received help from other person/s (Garcés et al. 2009). Of this help, 65.6% was regular (meaning everyday) and 34.5% was occasional. The same study found that the caregivers' burden (estimated using Zarit Burden Interview (Zarit et al. 1980)) was positively associated with not receiving help from other people or receiving it on an infrequent basis. In spite of the extended coverage of this help, there are no specific studies that examine the determinants of informal caregiver support in Spain. However, several studies have explored the determinants of formal

and informal support provided to disabled persons and their caregivers in other countries.

The Andersen Behavioural Model of Health Services Use (1995) has been recognised as an appropriate framework to explore the determinants of service use for both dependent persons (i.e. Mittchel and Krout 1998; Piercy and Blieszner 1999) and their informal caregivers (i.e. Kosloski and Montgomery 1994; Toseland et al. 2002; Hong 2010). According to the Andersen model, three types of variables underlying support to informal caregiver households can be distinguished: (a) predisposing factors, which are specially related to demographic, social structure and care/health beliefs; (b) enabling factors, which correspond to community and personal enabling resources and (c) need factors, which imply health and disability conditions. The Andersen model and other help-seeking theoretical frameworks (Pescosolido 1992; Litwin 1997) have emphasized the importance of social networks. This study uses the Andersen model as its main conceptual framework, and integrates social characteristics as enabling factors. In an innovative perspective, unpaid support from outside the household is considered as a function of the three domains proposed by Andersen. For this purpose, it is assumed that dependent persons and their informal caregivers living in the same household seek unpaid support in a similar way that they seek other types of formal resources.

Methods

Data source

We used information drawn from the Spanish Time Use Survey (*Encuesta de Empleo del Tiempo en España—EET*), conducted by the National Institute of Statistics (*Instituto Nacional de Estadística—INE*) in 2002–2003 and covering a sample representative of the population of Spain as a whole and of its respective Autonomous Regions (*Comunidades Autónomas*). This is the most recent survey containing time use data together with information about disability representative of Spain. The nationwide sample comprised 20,603 households and 46,774 individuals (representing all household members aged 11 years or over) (INE 2003). The EET furnishes information on time devoted to activities over a 24-h period. Interviewees had to specify: which activity they were performing every 10 min (main activity); whether they were doing anything else at the same time (secondary activity); and any person(s) with whom they were doing the activity at the time. Data collection was undertaken over a period of 1 year, dating from 1 October 2002 to 30 September 2003, in order to neutralise any possible seasonal effect.

Sample

Most data sources on caregivers obtain information directly from persons who *claim to be caregivers*. Such self-identification is not always reliable, and in many cases there are subjective criteria that introduce bias into the representativeness and validity of the samples (Kutner 2001). These biases pose one of the main problems to the study of informal care. Time use surveys are especially appropriate for analysing the living conditions of caregivers because they enhance the representativeness and validity of the results. This study uses data from a diary of activities, that is considered the most valuable and reliable instrument to collect time use data (Eurostat 2008).

The sample analysed was designed in two steps. First, EET data were used to design a caregiver sample which would enable us to identify caregivers other than those who self-reported. Caregivers were selected in two stages. We initially identified all households with disabled persons aged 65 years or over, and then proceeded to select persons living in the same household who reported undertaking care activities for at least 10 min during the day to which the survey refers. Disabled persons were selected from those who indicated having a problem with ADLs. They were also asked to choose whether their problem implied intense or moderate difficulties. The activity, informal care provided to adult members of the household, was defined as, ‘any assistance and care provided to adults (except housework)’, and specifically as, ‘physical care provided to a sick adult or to a person of advanced aged, such as: grooming, cutting hair or massaging; providing psychological help, giving information and advice; or, accompanying him/her to the physician, visiting him/her in hospital’ (INE 2003, p 94). Second, in order more easily to identify the person who was receiving help from the caregiver, only households having one disabled person aged 65 years or over were selected. The EET contains data on all household members, thereby rendering it possible for households to be analysed as a group which collectively seeks and receives external help. The final sample used for analysis purposes was made up of 404 caregivers caring for one older adult each.

Measures

Two types of external support provided to households of co-resident informal caregivers were chosen as dependent variables: paid support and unpaid support. Paid support was defined as help in caregiving tasks or housework provided by a person who received a salary or wage in exchange for their help. This salary or wage was funded by the family. In contrast, informal support was extra help provided by a relative or an acquaintance without receiving

any salary or wage in exchange for their help. Time use surveys based on diaries usually collect information about 1 day in the week per interviewed, and, exceptionally, about several days in the week. EET collected diary information about only 1 day, but it added questions about help received by the household in nine activities related to housework and care during the preceding 4 weeks (see Table 2). It also includes information for each activity about the time of support received and whether the household paid for it. As identified as activities received ‘by the household’ as a whole, EET did not distinguish among persons actually receiving each activity (e.g. house cleaning). Services provided by public or private organisations were not included by EET (INE 2003). No cases of co-resident paid support were found in the final sample.

The independent variables were classified according to the Andersen model: Predisposing factors: receiver’s age, caregiver’s gender, caregiver’s age, type of caregiver–receiver relationship, caregiver’s occupational status, caregiver’s educational level, caregiver’s marital status and size of the city of the household. Enabling factors: number of caregivers, household size, other types of support (paid/unpaid), presence of children (aged less than 11 years) in the home and net household income per capita per month (before housing costs). Need factors: receiver’s disability level and daily hours of care devoted by informal caregiver.

Analysis

Cross-tabulations were used to examine the bivariate relationships between dependent and independent variables. Differences among groups were tested using the chi-squared test. Binomial logistic regression models were used to identify factors associated with paid and unpaid support for informal caregivers. These models analyse whether a dichotomous variable is statistically associated with one or more factors, and predict the likelihood of an event under certain circumstances (Harrel 2001). Based on the logistic regression models, associations between types of caregiver support and independent variables were expressed as odds ratios (ORs). Pearson chi-square and Nagelkerke’s R^2 tests were used to express model fit (Norusis 2005). Variables were entered simultaneously into the regression models using the block enter method. Multicollinearity was tested by means of tolerance and VIF indicators. Factors related to hours of paid support were explored using both logistic regression and linear regression with log transformation of the dependent variable. Logistic regression was chosen because it provided more easily interpretable findings. The dichotomisation of hours of paid support was made according to the median of the variable (9 h). Differences among group means were tested

using ANOVA tests. All models and percentages were calculated with sampling weights in order to be representative. Sampling weights were calculated based on the distribution of population by age and sex in the various Spanish regions (autonomous regions and provinces) (INE 2003). Data analysis was performed using the SPSS version 17 computer software package.

Results

Study sample characteristics

Caregiver profile findings were similar to those from previous studies of caregiver characteristics (García-Calvente et al. 2004), in that 70% of caregivers in the sample were women, only 18% were gainfully employed at the time of their interviews, and a similar proportion had attained a secondary school or higher educational level (Table 1). Around 50% were receivers’ spouses and 38% were receivers’ children or sons/daughters-in-law. The descriptive analysis indicates that caregivers live in a closely defined context. Around half of caregivers in the sample cohabited alone with the receiver in the household, and 28% shared the household with four or more persons. Seventy-nine percent lived in towns of over 10,000 inhabitants, and 28% lived in households with a per capita income of less than €300 per month. With respect to receivers’ disability level and age, 64% experienced severe difficulties in performing ADLs, and 58% were aged 75 years or over (Table 1).

Approximately, 15% of all caregivers received only paid support in providing care and the same proportion were helped only by other informal caregivers. Around 4% of informal caregivers jointly received paid and unpaid support. About two thirds of the caregivers received no support from outside their households. A higher proportion of males received both types of support in comparison to female caregivers, and the proportion of paid support was almost double among employed in contrast to unemployed caregivers. A difference in the type of support was also noted on the basis of the type of caregiver–receiver relationship: paid support was received by 34% of caregivers who were distant relatives or friends, a figure 18 points higher than that for caregivers’ spouses, children or sons/daughters-in-law. This help was received by 44% of caregivers in the highest educational level (secondary school or higher) versus 13 and 14% in the ‘lower than primary school’ and ‘primary school’ categories, respectively.

Type of support for caregivers varied according to independent variables. Unpaid and paid support enjoyed greater coverage in households with only two and four members, respectively. Unpaid support was received by

Table 1 Profile of the sample by dependent and independent variables

	<i>N</i>	% (col.)	Paid support	Unpaid support	Unpaid and paid support	None	χ^2 <i>P</i> value
%			15.1	15.0	3.5	66.4	
<i>N</i>	404		57	65	10	268	
Receiver's age							
65–74	149	42.3	12.9	12.9	1.8	72.5	0.075
75–84	157	36.0	20.7	17.9	4.8	56.6	
85+	98	21.7	11.2	14.6	4.5	69.7	
Caregiver's gender							
Male	114	30.2	19.7	18.9	5.7	55.7	0.022
Female	290	69.8	13.1	13.5	2.5	70.9	
Caregiver's age							
–65	192	46.6	16.0	6.9	2.7	74.5	0.000
65–74	132	35.5	13.2	16.0	4.9	66.0	
75+	80	17.9	18.1	34.7	1.4	45.8	
Type of relationship with receiver							
Spouse	200	50.4	12.3	24.0	4.4	59.3	0.000
Son/daughter, son in law/daughter in law	161	38.0	13.1	6.5	3.3	77.1	
Other relative or friend	43	11.6	34.0	4.3	0.0	61.7	
Occupational status of caregiver							
Employed	73	18.3	23.3	9.6	6.8	60.3	0.027
Unemployed	331	81.7	13.3	16.3	2.7	67.7	
Level of education of caregiver							
Less than primary school	236	56.9	10.4	20.4	2.6	66.5	0.000
Primary school	103	25.4	12.6	10.7	1.9	74.8	
Secondary school or higher	64	17.3	35.7	2.9	8.6	52.9	
Marital status of caregiver							
Not married	108	26.1	17.0	7.5	1.9	73.6	0.049
Married	296	73.9	14.4	17.7	4.0	63.9	
Population size							
100,000+	170	41.5	16.2	7.8	3.6	72.5	0.000
10,000–100,000	159	37.8	11.8	26.1	2.6	59.5	
<10,000	75	20.7	19.3	9.6	3.6	67.5	
Number of caregivers in the household							
1	354	87.2	13.6	16.5	4.0	65.9	0.007
2	50	12.8	26.9	3.8	0.0	69.2	
Household size							
2	193	47.5	16.1	22.9	5.2	55.7	0.000
3	101	24.3	16.2	12.1	0.0	71.7	
4	46	10.6	18.6	11.6	4.7	65.1	
5 or more	64	17.5	8.5	0.0	2.8	88.7	
Children in the household							
No	340	85.5	15.1	17.1	3.5	64.3	0.023
Yes	64	14.5	16.9	1.7	3.4	78.0	
Household income per capita							
0–299€	115	28.3	6.2	14.2	0.9	78.8	0.005
300–399€	127	32.7	17.8	19.4	2.3	60.5	
400€+	159	39.0	17.5	12.3	5.8	64.3	

Table 1 continued

	<i>N</i>	% (col.)	Paid support	Unpaid support	Unpaid and paid support	None	χ^2 <i>P</i> value
Receiver's disability level							
Severe	262	63.5	14.8	18.7	4.3	62.3	0.025
Moderate	142	36.5	15.5	8.8	2.0	73.6	
Hours of care devoted by informal caregiver per day							
<1	188	47.0	17.4	16.8	3.2	62.6	0.022
1–2.99	158	38.0	10.5	9.8	5.2	74.5	
3+	58	14.9	20.0	21.7	0.0	58.3	

N is the unweighed number of observations

Source: Spanish Time Use Survey 2002–2003

Table 2 Hours of monthly support received, by activity and type of support

	Only paid support	Only unpaid support	Paid and unpaid support	Total	ANOVA <i>P</i> value
<i>N</i>	57	65	10	132	
Meals preparation	1.22	3.14	0.71	2.02	0.077
House cleaning	4.28	4.43	3.37	4.25	0.775
Laundry, ironing and clothing repair	0.14	0.34	0.19	0.23	0.465
Gardening	0.00	0.08	0.00	0.04	0.310
Home repairs and construction	0.01	0.19	0.11	0.10	0.301
Purchase goods	0.41	2.02	0.97	1.19	0.002
Administrative errands	0.02	0.97	0.07	0.45	0.010
Child care	0.93	0.00	0.22	0.44	0.560
Adult care	7.12	11.10	6.59	8.84	0.242
Total	14.13	22.27	12.22	17.56	0.066

N is the unweighed number of observations

Source: Spanish Time Use Survey 2002–2003

only 11% of informal caregivers in large cities versus 29% in medium-sized cities, and it was received by 23% of caregivers of severely disabled persons versus 11% of those caring for moderately disabled persons. Whereas 23% of households with a per capita income of over €400 had paid support, this type of service was used by only 7% of households with incomes of less than €300.

Caregiver households with support received an average of 17.6 h monthly (Table 2). About half of the time received by caregiver households consisted of adult care, with an average of 8.8 h monthly. In this case, adult care did not include domestic work, and was defined as 'personal services provided to adults with disability, older adults or sick adults, like personal hygiene, cutting hair, massaging; providing psychological help, giving information and advice; accompanying him/her to the physician; reading, chatting, playing with him/her' (INE 2003, p 145). The rest consisted of housework, mainly house cleaning (4.3 h), meal preparation (2.0) and purchasing goods (1.2). Households with only unpaid care received an average of 8 and 10 h of support more than households with only paid care and with paid and unpaid care together, respectively. Households with only unpaid support received significantly

more time of support in meals preparation, purchasing goods and administrative errands.

Factors influencing paid and unpaid support for households with co-resident caregivers

The first logistic regression model examined factors influencing paid support for caregivers (Table 3). Caregivers attending to disabled persons aged 75–84 years were 3.6 times more likely to receive paid support than were those caring for persons aged 65–74 years. Compared with men, women were about half as likely to receive this type of support. Friends or distant relatives were 3.9 times more likely to receive paid support than spouses, although this result does not reach statistical significance. The odds ratios indicated that the probability of receiving such support varied significantly according to educational level, in that, relative to caregivers with lower than primary school education, those with primary and secondary school and higher education were 2.1 and 7.7 times more likely to receive paid support, respectively. Occupational status was not included in the model, whereas it was clearly significant in the bivariate analysis. The absence is due to it being

Table 3 Logistic regression models of type of support received by informal co-resident caregivers

	Paid support (Model 1)			Unpaid support (Model 2)		
	OR	95% CI	P value	OR	95% CI	P value
Predisposing factors						
Receiver's age (ref: 65–74)			0.002			0.018
75–84	3.553	1.653 7.639	0.001	2.462	1.081 5.608	0.032
85+	1.512	0.520 4.401	0.448	5.163	1.608 16.578	0.006
Caregiver's gender (male)	0.507	0.266 0.967	0.039	0.536	0.263 1.091	0.086
Caregiver's age (ref: 64–)			0.129			0.948
65–74	3.245	0.892 11.807	0.074	0.813	0.232 2.848	0.746
75+	1.833	0.427 7.876	0.415	0.839	0.193 3.659	0.816
Type of relationship with receiver (ref: spouse)			0.034			0.005
Son/daughter, son in law/daughter in law	1.117	0.236 5.296	0.889	0.054	0.008 0.369	0.003
Other relative or friend	3.870	0.857 17.486	0.079	0.033	0.003 0.336	0.004
Caregiver's occupational status (ref: unemployed)	1.575	0.612 4.050	0.346	5.097	1.601 16.225	0.006
Caregiver's level of education (ref: less than primary school)			0.000			0.443
Primary school	2.119	0.897 5.006	0.087	1.409	0.595 3.338	0.435
Secondary school or higher	7.737	2.889 20.716	0.000	2.071	0.645 6.655	0.221
Marital status (ref: unmarried)	1.681	0.570 4.956	0.347	0.809	0.216 3.038	0.754
Population size (ref: +100,000)			0.908			0.000
10,000–100,000	1.018	0.506 2.045	0.961	4.601	2.241 9.449	0.000
<10,000	1.196	0.519 2.754	0.675	1.706	0.679 4.289	0.256
Enabling factors						
Number of caregivers (ref: 1)	1.567	0.580 4.233	0.376	0.263	0.056 1.243	0.092
Household size (ref: 2)			0.088			0.173
3	0.299	0.105 0.851	0.024	0.409	0.161 1.038	0.060
4	0.488	0.111 2.150	0.343	0.824	0.195 3.490	0.793
5 or more	0.223	0.047 1.065	0.060	0.261	0.036 1.887	0.183
Paid/unpaid support (ref: no)	0.661	0.293 1.492	0.319	0.703	0.316 1.565	0.389
Children in the household (no)	1.705	0.468 6.217	0.419	0.597	0.112 3.182	0.546
Household income per capita (ref: 0–299€)			0.070			0.268
300–399€	2.682	1.052 6.837	0.039	1.042	0.453 2.394	0.924
400€+	2.931	1.095 7.842	0.032	1.898	0.788 4.575	0.153
Need factors						
Receiver's disability level (ref: moderate)	1.507	0.771 2.948	0.230	2.618	1.281 5.352	0.008
Hours of informal care provided by caregiver (ref: <1)			0.862			0.714
1–2.9	0.877	0.448 1.716	0.702	0.797	0.394 1.610	0.526
3+	0.797	0.325 1.956	0.620	1.126	0.463 2.736	0.793
Constant	0.015		0.000	0.138		0.046
Model statistics						
	Chi-squared = 75.120, $P < 0.001$. Nagelkerke's $R^2 = 0.284$. Multicollinearity test: lowest tolerance factor = 0.273; Highest VIF = 3.657			Chi-squared = 102.327, $P < 0.001$. Nagelkerke's $R^2 = 0.367$. Multicollinearity test: lowest tolerance factor = 0.279; Highest VIF = 3.589		

N 400

Source: Spanish Time Use Survey 2002–2003

highly correlated to household income and educational level, which both contain an occupational status effect. Caregivers living in households of three and of five or more members were significantly less likely to receive paid

support than were persons living in households of two persons. Compared to caregivers living in households with a per capita income of under €300, those living in households with per capita incomes of €300–399 and €400 and

over were 2.7 and 2.9 times more likely, respectively to receive paid support. Model fit is reflected by the chi-square of the model ($P < 0.001$) and Nagelkerke's R^2 (0.284).

The second logistic regression model, shown in Table 3, examined variables influencing unpaid support for caregivers. The probability of receiving unpaid support was linked to age: caregivers caring for people aged 75–84 years and over 84 years were 2.5 and 5.2 times more likely, respectively to receive unpaid support than were caregivers attending to disabled people aged 65–74 years. The gender variable approaches statistical significance, and the odds ratios indicate that women were less likely to receive unpaid support than were men. The odds ratios indicated that the probability of receiving this type of support varied by type of caregiver–receiver relationship, inasmuch as spouses were significantly more likely to receive support than were those with any other type of relationship with the receiver. Employed caregivers were 5.1 times more likely to receive support from relatives or friends than were unemployed caregivers. Compared to caregivers living in large cities, those living in cities with 10,000–100,000 inhabitants were 4.6 times more likely to receive unpaid support. Caregivers of severely disabled persons were 2.6 times more likely to receive such support. Odds ratios of receiver disability levels and age indicated the importance of receivers' needs to caregivers for the purpose of seeking additional assistance. Nagelkerke's R^2 (0.367) showed a good fit for the model.

Caregivers with paid support received an average of 13.8 h of such help over the preceding 4 weeks. As shown in Tables 4 and 5, hours of paid support varied significantly according to caregivers' ages, household size, receivers' disability levels, type of caregiver–receiver relationship and household income per capita, although in these two last variables significance was slightly above the 0.05 value. Caregivers aged less than 65 or over 74 years were significantly more likely to receive more than 9 h of paid help than caregivers aged 65–74 years. Related but not spousal caregivers received 19.8 h of paid support, 9 h more than did spouses. Nevertheless, when controlling for other relevant factors, related but not spousal caregivers are significantly less likely to receive more than 9 h of paid support than are spouses. Caregivers living in households of 3–4 persons and more than five persons were 17.6 and 32.3 times, respectively more likely to receive more than 9 h of paid help than two-member households. Persons caring for severely disabled people were 35.3 times more likely to receive more than 9 h than those caring for moderately disabled people.

As shown in Table 4, caregivers with support from relatives or friends received 18.8 h of unpaid help over the preceding 4 weeks. The only statistically significant

variable was paid support received. Those without paid support from outside their households received around 20 h more of unpaid help than those receiving paid support. Although not statistically significant, probably due to the limited number of cases, some differences nevertheless warrant mention: men were observed to receive more hours of both paid and unpaid support than did women (a difference of 3.7 and 5.2 h, respectively); married caregivers received almost half the amount of unpaid hours than did their unmarried counterparts (16.9 and 31.3 h, respectively); caregivers with lower than primary school education received about 5 h less of paid support and 17 h more of unpaid support than caregivers with higher education levels; and a lower mean of unpaid hours of support was found for large (7.5) versus smaller towns (a difference of at least 12.5 h).

Discussion

Most studies addressing informal care have focused on primary caregivers, and have overlooked the fact that, in many cases, assistance is not entirely provided by just one person. Consequently, there is a relative lack of information on how family members and friends co-ordinate the informal care they provide to the same person (Fast et al. 2004). This article considers the care provided by various co-resident caregivers, and explores the coverage and related factors of support provided by other persons from outside the household. Accordingly, the main aims of this article were: to estimate the proportion of co-resident informal caregivers receiving paid and unpaid support by persons from outside the home; to identify the factors associated with both types of support and to quantify such support in terms of time. Approximately 33.6% of all co-resident informal caregivers shared their duties with other persons from outside their homes. A similar proportion of households received paid and unpaid external support. Unpaid support had a greater intensity in terms of time received than did paid support. About 50% of the support received consisted of adult care (mainly physical ADLs) and 50% on housework (instrumental ADLs). This composition highlights the heterogeneous nature of support, and contributes to the idea of incorporating household tasks into formal and informal care definitions (Durán 2002).

Predisposing, enabling and need factors were explored to identify factors influencing support received by informal co-resident caregivers. The results show that the three types of variables accounted for the receipt of external support. Caregiver and receiver characteristics were significant factors to both paid and unpaid support receipt. Nevertheless, significant differences between paid and unpaid support related factors were found.

Table 4 Hours of paid and unpaid support received by co-resident informal caregivers over the preceding 4 weeks

	Hours of paid help			Hours of unpaid help		
	<i>N</i>	Mean	ANOVA <i>P</i> value	<i>N</i>	Mean	ANOVA <i>P</i> value
<i>N</i>	67	13.78		74	18.80	
Receiver's age						
65–74	19	13.70	0.868	24	21.95	0.459
75–84	36	13.15		35	19.82	
85+	12	15.70		15	11.93	
Caregiver's gender						
Male	27	15.95	0.291	30	21.87	0.399
Female	40	12.25		44	16.68	
Caregiver's age						
<65	31	18.23	0.002	20	20.09	0.597
65–74	20	5.79		29	15.01	
75+	16	17.20		25	21.91	
Type of relationship with receiver						
Spouse	30	10.99	0.034	56	18.18	0.715
Son/daughter, son in law/daughter in law	24	19.84		15	22.42	
Other relative or friend	13	9.85		3*	7.07	
Occupational status of caregiver						
Employed	18	15.36	0.545	12	17.95	0.900
Unemployed	49	13.09		62	18.97	
Level of education of caregiver						
Less than primary school	29	10.42	0.285	54	21.99	0.172
Primary school	13	15.42		14	13.63	
Secondary school or higher	25	16.19		6	4.68	
Marital status of caregiver						
Not married	17	12.05	0.550	11	31.28	0.101
Married	50	14.39		63	16.85	
Population size						
100,000+	32	12.64	0.472	18	7.52	0.101
10,000–100,000	21	17.00		44	22.92	
<10,000	14	12.00		12	20.18	
Number of caregivers in the household						
1	53	12.93	0.296	72	19.14	0.523
2	14	17.56		2*	8.00	
Household size						
2	35	10.84	0.003	55	19.56	0.723
3	15	12.44		11	21.52	
4	9	29.04		6	12.99	
5 or more	8	12.08		2*	1.11	
Other type of help (paid/unpaid)						
No	57	14.13	0.667	65	22.27	0.010
Yes	10	12.22		9	1.86	
Children in the household						
No	55	12.46	0.063	70	19.42	0.287
Yes	12	21.45		4*	2.34	

Table 4 continued

	Hours of paid help			Hours of unpaid help		
	<i>N</i>	Mean	ANOVA <i>P</i> value	<i>N</i>	Mean	ANOVA <i>P</i> value
Household income per capita						
0–299€	11	12.13	0.598	19	21.48	0.208
300–399€	22	12.63		30	23.69	
400€+	33	16.15		25	12.00	
Receiver's disability level						
Severe	47	17.51	0.002	57	18.93	0.929
Moderate	20	6.70		17	18.25	
Hours of care devoted by informal caregiver per day						
<1	35	10.93	0.164	34	19.77	0.271
1–2.99	23	15.42		26	12.85	
3+	9	19.61		14	26.94	

* *N* < 5

Source: Spanish Time Use Survey 2002–2003

Table 5 Logistic regression model of hours of paid support received by informal co-resident caregivers (ref: less than 9 h)

	<i>OR</i>	90% CI	<i>P</i> value
Predisposing factors			
Caregiver's age (ref: <64)			0.006
65–74	0.001	0.000	0.016
75+	0.032	0.000	0.202
Type of relationship with receiver (ref: spouse)			0.150
Son/daughter, son in law/daughter in law	0.004	0.000	0.055
Other relative or friend	0.087	0.003	0.233
Enabling factors			
Household size (ref: 2)			0.030
3–4	17.594	2.530	0.015
5+	32.325	1.856	0.045
Household income per capita (ref: 0–299€)			0.093
300–399€	17.141	1.417	0.061
400€+	2.382	0.191	0.572
Need factors			
Receiver's disability level (ref: moderate)	35.301	4.489	0.004
Constant	1.847		0.832

Model statistics: Chi-squared = 50.461, *P* < 0.001. Nagelkerke's R^2 = 0.682. Multicollinearity test: lowest tolerance factor = 0.571; Highest VIF = 1.750

N 66

Variables of no significant influence and thus excluded from the model were: receiver's age, caregiver's gender, occupational status, level of education, marital status of caregiver, population size, number of caregiver in the household, receipt of unpaid help, children in the household and hours of informal care

Source: Spanish Time Use Survey 2002–2003

Several predisposing and enabling factors were significantly related to paid support received, and no need factors were significant. As found by Toseland et al. (2002) for human services used by persons with dementia and their family caregivers, enabling factors were most strongly

related to paid support. Consistent with previous studies from the United Kingdom (Bywaters and Harris 1998), men receive more external paid support than do women. Unlike previous results from North America (Hong 2010), but in agreement with previous results for Finland

(Blomgren et al. 2008), the results suggest (P value < 0.1) that spouses have a lower probability of receiving paid support than distant relatives in Spain. This is accounted for by the lower degree of commitment and intimacy of distant relatives in comparison to spouses (Allen et al. 1999). The results also suggest that when controlling for other relevant factors, spouses tend to receive more hours of paid support than do children caregivers. This could be explained because spousal caregivers tend to use paid care as a last resource (Rivera et al. 1999), when there are important barriers to provide as much care as their spouses need. In those cases, the need for external support is higher.

The results confirm that household income is a key resource for the use of private help (i.e. Rogero-García 2009, for Spain; Kemper 1992, Stoller and Cutler 1993, for United States; Blomgren et al. 2008 for Finland). The inclusion of the variables, income and educational level, in the paid support logistic regression model highlights that paid support is linked, not only to the availability of financial resources, but also to the cultural value placed on informal care and private domestic services. Higher socio-economic classes place greater value on paid support than do lower classes, mainly due to the higher opportunity costs of informal care among highly educated caregivers (Jiménez-Martín and Vilaplana 2008). The relationship between household size and paid support received indicates that paid support is associated with the lack of other potential caregivers within immediate proximity to the receiver (Lafreniere et al. 2003).

In contrast with the Blomgren et al. (2008) study of formal help in Finland, no need factors were linked to paid support to informal caregivers in the models. This difference can be explained because Blomgren et al. also included public, volunteer and private organisations, while this study only considered private paid work. The absence of a significant effect of disability level in the model for paid support indicates that receiving such support depends, not merely on the receiver's needs (type of task and time demanded), but also on the characteristics of the household and the socio-economic circumstances of the informal caregiver (gender, occupational status, educational level, etc.). The findings, however, confirm that disability level significantly influences the number of hours of paid support received (Bonsang 2009).

Unpaid support received was linked to predisposing, enabling and need factors. Similar to previous studies in Canada (Brazil et al. 2009) and United states (Allen 1994), the results suggest (P value < 0.1) that women were less likely to receive unpaid support than are men. According to the findings, men are part of more widespread and diverse caregiving networks than are women. This does not mean that the social networks of men and women are substantially different in composition and size, but rather that men

and women mobilise their networks in different ways to respond to their respective support needs. It also highlights international findings about the gendered nature of caregiving where societal expectations of the role of women as caregivers differ from societal expectations of men as caregivers.

The strong relationship between hours of external informal support with paid support received indicates a generalized pattern of supplemental support of both types to co-resident informal caregivers. Unlike previous studies from the United Kingdom (e.g. Wenger 1990), the study shows that spouses have a higher probability of receiving unpaid support than children. These results can be explained by the stronger intergenerational support patterns of informal caregivers in Mediterranean countries than in northern countries (Lowenstein and Daatland 2006). Surprisingly, employed caregivers were more likely to use unpaid support, but not paid support. This also may be explained by the broader social network characteristic of Familist welfare regimes (Esping-Andersen 1999).

The results also suggest a relationship between support for informal caregivers and population size. The higher rates and hours of unpaid support in medium-sized versus large cities may indicate that there is less transfer of help between households in urban than in rural areas. This could be explained by the lower availability of paid care workers in rural areas (Morgan et al. 2002) and, as suggested by Zambrano and Rivera (2000), by the stronger ties of solidarity and greater availability of free or flexible time in rural areas. We also found a slight relationship between household size and receipt of unpaid support from outside the household: the more availability of informal resources within the household, the less the support received from outside the household. This supports the idea that larger household size tends to increase the probability of informal care being shared and, conversely reduces the likelihood of formal support being received (Casey and Yamada 2002).

The study's main strength lies in the characteristics of its data source. Time use data make possible both characteristics of caregiver and care receiver living in the same household to be studied, allows analysis of informal caregivers who are not self-reported and avoids biases based on social desirability. Nevertheless, a number of study limitations should be borne in mind when interpreting the findings. We have identified caregivers from their diaries. These diaries collect information only from 1 day of the week. We cannot be sure that there are not other informal caregivers within the household who care for the same dependent person, but they did not provide care on the day they filled out the questionnaire. Consequently, the sample represents the number of informal caregivers who care every day within the Spanish households, but it is not representative in terms of total number of caregivers per

household or co-residential care. Analysis was confined to households with one disabled person aged over 64 years, and included only informal caregivers of persons living in the same household. It is possible that the relationship between the above-described variables might have changed, if households with two or more persons with disabilities, and caregivers of persons living outside their homes had been included. Furthermore, formal public support was not covered in this article, and its impact on informal caregivers support should be considered for further investigation. In addition, international comparative information might offer additional insights to explain how households seek help in different long-term care systems.

EET was not especially designed to collect care information, so it offers only a partial view of caregiver and receiver support. The lack of information limited the number and details of the dependent and independent variables. In EET, housework was not included in the definition of care. Previous articles have shown that an important part of the time devoted to housework by caregivers is for their care receivers (Bittman et al. 2004), so it would be interesting to add these tasks to the definition in future research. Psychological predisposing factors were missed in the analysis while others found them significant in previous studies (Roelands et al. 2008). Larger samples are called for to confirm these results and to explore specific situations (e.g. types of paid and unpaid care, or support of informal caregivers by type of difficulty). Longitudinal data would also provide a clearer understanding of why informal caregivers receive additional support, and of the relationship between such support and their quality of life.

Notwithstanding its limitations, this article provides new information about informal caregiving situations and the composition of paid and unpaid care in Spain. The activities of external support analysed may be comparable with different types of formal services (i.e. housework service, personal or nursing care or meal delivery). Amounts of time devoted to activities might affect the distribution of public budgets and service design. This suggests that there remains a broad scope for extending research and the services delivered which provide help for those with physical and instrumental ADLs. The application of the Andersen model to paid and unpaid support has yielded new insights into the very diverse range of caregiving situations, which combine formal and informal support, and help from in and outside the home. The findings draw attention to the inequality of support resources by predisposing, enabling and need factors, and provide some evidence of substitution between paid and unpaid external support. It follows that increased support for public care services is expected to reduce both paid and unpaid external support. A direct money transfer to households (not linked to services) may

lead to an increase in paid external support and to a decrease of unpaid support. Improved design of care and support services should take into account unequal conditions in terms of paid and unpaid support under which dependent persons and their informal caregivers are involved.

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