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Subjective burden and cultural motives for caregiving in informal caregivers of older people

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ABSTRACT

Purpose: The aim of this study was to investigate variables related to obligation and reciprocity and the relationship between cultural caregiving motives (obligation and reciprocity) and subjective burden in informal caregivers of disabled older people.

Design and methods: A secondary analysis of the last cross-sectional Spanish survey of informal caregivers of older people (n= 1.284, probability sample) was performed. Measurements included the following: sociodemographic characteristics of caregivers (gender, age, relationship with care-recipient, primary caregiver status and duration of caregiving), intensity of care (hours per week, type of care and number of Activities of Daily Living [ADL] assisted), cultural motives for caregiving (obligation and balanced reciprocity) and caregiver subjective burden. Statistical analyses included the following: descriptive (means, percentages and 95% confidence intervals), bivariate (Chi-square test) and multivariate (binary logistic regression).

Findings: Obligation and reciprocity were higher in spouses than in other relatives and in non-relatives. Obligation increased with age as well as providing help with ADL. Balanced reciprocity was high in men. Obligation was not related with subjective burden, whereas balanced reciprocity was positively related.

Conclusions: Reciprocity had a protective effect on subjective burden. No cultural differences have been found on this issue. Obligation may be a multidimensional concept that encompasses personal beliefs and social demands.

Clinical relevance: Balanced reciprocity is useful for early prevention and early intervention of subjective burden and must be included in nursing care plans for caregivers. Cultural factors support the comprehension of the caregiving process.

Keywords

Obligation, reciprocity, burden, caregiving, older people, nursing.

TEXT

An increase in life expectancy has resulted in high levels of disability in elderly people and has increased demand for long-term care (Organisation for Economic Co-operation and Development [OECD], 2009). In industrial countries, long-term care for older people is informal and family based (OECD, 2005). The bulk of care for older people is provided by the family, more specifically by the woman in the family (although there are marked differences across countries) (OECD, 2005).

Providing informal care for a disabled older adult is stressful (Aneshensel et al., 1995) and detrimental to caregivers' health (Pinquart and Sorensen, 2003b). A substantial amount of literature shows that caregivers are more stressed, are depressed, and have lower levels of subjective well-being, physical health, and self-efficacy than non-caregivers (Pinquart and Sorensen, 2003b). One of these negative consequences, subjective caregiver burden (or simply caregiver burden [SB]), is defined as a caregiver's state that is characterised by distress in several areas (caregiver's health, psychological well-being, finances, social life and the relationship between the caregiver and the care-recipient) that results from the caregiving situation (Zarit et al., 1980). This issue has been widely discussed in the caregiving literature (Hunt, 2003; Pinquart and Sorensen, 2003a). Many studies in the literature relate SB to anxiety (Cooper et al., 2007), depression (Pinquart and Sorensen, 2003a; Schoenmakers et al., 2010) and physical health (Carretero et al., 2009). Thus, greater prevention of SB will mean increased prevention of these effects.

Several factors have been shown to be related to SB in different reviews. There is some evidence that these factors include objective primary stressors or objective burden (consisting of caregiving intensity and caregiving demands), duration of caregiving (both with a positive association), gains with caregiving (negative association) (Pinquart and Sorensen, 2003a) and gender (female: positive association) (Pinquart and Sorensen, 2006). Furthermore, there is little evidence of the existence of perceived social support (negative association) (Smerglia et al., 2007; Vrabec, 1997), and there are conflicting results with respect to coping (Gottlieb and Wolfe, 2002; Kneebone and Martin, 2003). The identification of other possible determinants of SB (e.g., caregivers' age, kinship, common dwelling or caregiving motives) comes from original studies (usually with a cross-sectional

design) whose findings are generally heterogeneous. Regarding clinical practice, an adequate definition of SB determinants allows for early detection (regardless of the determinant) and early intervention (when the determinant is modifiable).

Background

Caregiving motives can be broadly classified into the following categories (adapted from: Feeney and Collins, 2003; Kolmer et al., 2008): acceptance of cultural norms (familism, obligation and reciprocity), affection, giving meaning to life (dignifying, feeling competent and desire to live in relationships), financial compensation and a lack of alternatives. Caregiving motives in general, but especially familism, obligation and reciprocity, are strongly influenced by ethnicity and culture (Dilworth-Anderson et al., 2004). The study of the influence of cultural factors in caregiving is very important but has only been addressed recently (Losada et al., 2006). Thus, there are few studies analysing caregiving motives and SB. Furthermore, these studies deal only with familism, obligation and reciprocity.

Familism is "a cultural value that refers to strong identification and solidarity of individuals with their family as well as strong normative feeling of allegiance, dedication, reciprocity, and attachment to their family members, both nuclear and extended" (Knight and Sayegh, 2010, p. 7). The results concerning the relationship between familism and SB are heterogeneous, and researchers have found both a negative association with SB (Chun et al., 2007; Kim et al., 2007; McCallum et al., 2007; Robinson and Knight, 2004) and a lack of association (Robinson and Knight, 2005) or divergent results depending on the ethnic group studied (Knight et al., 2002; Losada et al., 2006). Knight and Sayegh (2010) discussed these findings and argued that familism is a complex multidimensional construct for each ethnic group. The findings of the latest studies (Knight et al., 2002; Losada et al., 2006; Sayegh and Knight, 2011) led us to propose not only that is familism a multidimensional concept, but also that each dimension is related to SB in different ways. Thus, the results could differ in each group depending on the predominant dimension of familism. Therefore, it was hypothesised that it is more useful to analyse the dimensions of familism (such as reciprocity and obligation).

Reciprocity refers to the bidirectional exchange of resources (Neufeld 1998) and has been thoroughly studied in anthropology to describe economic exchanges that are not always material exchanges. Sahlins (1965) identified three types of reciprocity based on the expectation of return and the equality of the exchange: generalised (no expectation of return, so no expectation of equivalence); balanced (expectation of fair and tangible return but at an undefined future date); and negative (expectation of both immediate return and equivalence of the given or maximising benefits, if possible). In psychological and sociological literature, some authors (e.g.: Call et al., 1999; McPherson et al., 2010) have used the Social Exchange and Equity Theories to conceptualise caregiving as a process of mutual exchange in which it is hypothesised that balanced exchanges decrease the probability of negative outcomes. This perspective matches Shalins' balanced reciprocity concept. In the nursing literature, Neufeld and Harrison (1995; 1998) defined three types of reciprocity in caregiving: waived (the expectation of immediate reciprocity is relinquished and an open-ended time period is used in assessing reciprocity), generalised (the expectation that the assistance received will be returned to an individual other than the original provider of support) and constructed (a special form of reciprocity developed by caregivers of cognitively impaired older adults based on positive feelings about their relationship with the care-recipient). Waived and generalised reciprocity can be considered as a way to classify Sahlins' generalised reciprocity and constructed reciprocity as a specific form of Sahlins' balanced reciprocity; however, there could be more forms of balanced reciprocity, such as elder's gratitude (Choi, 1993); exchange of love, affection and regard (Carruth, 1996); or exchange of support (Dwyer and Miller, 1990). Thus, caring for an older relative by reciprocity can be motivated by altruism, reciprocation from the past, the wish to be cared for in the future, the elder's gratitude, a satisfactory affect exchange or the exchange of support. There have been few, but promising, results pointing to a protective effect of Sahlins' balanced reciprocity on SB (Dwyer et al., 1994; Dwyer and Miller, 1990; Reid et al., 2005; Stiens et al., 2006; Wright and Aquilino, 1998). Similar findings have been found in other negative effects such as depression (Douglass, 1997) and in promoting positive effects such as family satisfaction

(Carruth et al., 1997) and positive feelings about caregiving, in this case with both balanced and generalised reciprocity (Neufeld and Harrison, 1995; 1998).

Obligation refers to a culturally defined attitude of duty and responsibility to care for relatives (de Valk and Schans, 2008). It is measured as obligation in general (e.g.: Chou et al., 1999; Kolmer et al., 2008) or filial obligation (e.g.: Kong, 2007; Stiens et al., 2006). Findings about the effects of obligation on SB have been heterogeneous. Thus, there are authors that have shown both a positive association (Cicirelli, 1993; Choi, 1993; Guberman et al., 1992; Stiens et al., 2006) and a negative association (Chou et al., 1999) or lack of association (Albert, 1992). Similar findings were obtained by Pinquart and Sorensen (2005) in a systematic review with meta-analysis about ethnic differences in the caregiving process, in which there was no match between ethnic groups with high obligation and ethnic groups with high or low negative caregiving effects. Just as the definition of any determinant of SB, studying the relationship between motives and SB would contribute to prevent both SB and consequences of SB and would also permit exploration of the influence of cultural factors in caregiving. More specifically to the field of nursing, this prevention could be carried out through early detection (by defining risk profiles) and early intervention. These issues are relevant to nursing research and practice.

This study attempts to extend the understanding of caregiver burden. More specifically, the purpose of this research was to investigate variables related to obligation and reciprocity and the relationship between cultural caregiving motives (obligation and reciprocity) and SB in informal caregivers of disabled older people.

Methods

Sample and settings

Our study was a secondary analysis of data (Institute of Elderly and Social Services [IMSERSO], 2004b) from the last national cross-sectional survey of informal caregivers of older people (65 years or over) (IMSERSO, 2005) developed by the Spanish Government. This survey was conducted on a probability sample (n= 1.504) that was representative of Spanish households (multistage sampling; precision: ± 2,5%, confidence level: 95%). Data were collected in 2004 and

published in 2005 (IMSERSO, 2005). Since then, there have not been any analyses of these data with respect to the relationship between caregiving motives and SB.

For our study, caregivers with no more than one care-recipient were selected, because the survey only assessed the care provided to the care-recipient who received more attention. The resulting sample (n= 1.284) enabled a precision of ±2,7% with a confidence level of 95%, and based on the work of Peduzzi et al. (1996), this sample size permitted us to include till 24 covariates on a logistic regression model where a minimum prevalence of the dependent variable was 20%. The distributions of caregiver age, caregiver gender, the relationship with the care-recipient and primary caregiver status of the resulting sample were similar to those of the original sample (confidence intervals [CI] overlapped -see Table 1-).

Measurements

Sociodemographic characteristic of caregivers. Caregiver gender (male/female), caregiver age (in years), the relationship with the care-recipient (spouse, child, other relatives and non-relatives), primary caregiver status (yes / no) and the duration of caregiving (in years) were determined by single questions.

Intensity of care. Intensity of care is part of the objective burden. Intensity of care was assessed by the amount of care provided through the Hours of Care Index (National Alliance for Caregiving, 2009): up to 8 hours per week, from 9 to 20 hours per week, from 21 to 40 hours per week and over 40 hours per week; the type of care provided (only instrumental activities of daily living –IADL- or activities of daily living –ADL- with or without IADL); the provision of a specific ADL care (measured as yes / no; ADL assessed: feeding, bathing, dressing, incontinence, transferring and ambulating) and the number of ADL assisted. The amount of care provided was assessed in the original sample through two questions that explored the frequency of attention (all days, more than three times per week, one or two times per week, one or two times per month and minor frequency) and the average number of hours spent in caregiving each day caring (less than 1 hour, 1 to 2 hours, 3 to 5 hours, 6 to 8 hours and more than 8 hours; in the case of more than 8 hours,

the exact number of hours was registered). The Hours of Care Index was generated from these questions.

Cultural motives for caregiving. Obligation and reciprocity were assessed through single Likert questions. For obligation, the Likert question was as follows: "I think it is for me a moral obligation to care for that person [the relative]". For reciprocity, the question was as follows: "The care-recipient is very grateful and it gratifies and compensates to me" (IMSERSO, 2004a). According to Sahlins' classification, this type of reciprocity can be classified into balanced reciprocity. A panel of 17 subject matter experts was developed to measure content validity for obligation and reciprocity, following the recommendations of Lawshe (1975). The Content Validity Ratio for both measures was 1. Due to the few cases existing in the categories of "disagree", "strongly disagree" and "neither agree nor disagree", each question was dichotomised in two categories: a) yes: "agree" or "strongly agree" and b) no: "disagree", "strongly disagree" or "neither agree nor disagree".

Caregiver SB. In the original sample, there were two single questions related to the concept of SB ("I feel like I'm trapped at a dead end" and "Caring for this person is an excessive burden to me") (IMSERSO, 2004a). Both questions were measured using a Likert scale. From these questions, a new variable called SB was performed. This variable had two values: a) yes: when the caregiver answered "agree" or "strongly agree" on both previous questions and b) no: other answers. A pilot study to determine the accuracy of this measurement was conducted. In this study, the concordance between the new variable and a gold standard represented by the Caregiver Strain Index (Robinson, 1983) was analysed in a probabilistic sample of 204 family caregivers of older people who had similar distributions of age, gender and kinship as those of our study sample (see Table 1). The Caregiver Strain Index was performed by Robinson (1983) using a sample of caregivers of recently hospitalised hip surgery and heart patients aged 65 and over and was validated in Spain by López and Moral (2005) in caregivers of patients with chronic, oncologic and acute health problems who need to be cared for at home (aged 55 or more). This validation study yielded good psychometric properties (high correlation with determinants and consequences of SB and Cronbach's α coefficient:

0,86). The Receiver Operating Characteristic (ROC) curve was chosen as the concordance index because the cutoff point of the Caregiver Strain Index is not clear. Initially, Robinson (1983) recommended a cutoff point of 7, but she did not justify this cutoff with validity measurements. Later, several authors recommended this cutoff point (e.g., Passik and Kirsh, 2005) or other cutoff points (e.g., 6, see Donnelly et al., 2008), but again, these recommendations were not based on validity measurements. In our pilot study, the area under the ROC curve was 0,855 (95% CI: 0,787 – 0,923).

Statistical analysis

Means, percentages and 95% CI were used for the descriptive analysis. The Chi-square test was employed in the bivariate analysis. Binary logistic regression was used for the multivariate analysis to determine the relationship between motives and SB while controlling for the duration of caregiving, the intensity of care and gender. These variables are related to SB (Pinquart and Sorensen, 2003a). In both the bivariate and the multivariate analyses, a p value <0.05 determined statistical significance. SPSS 17.0 for Windows (SPSS Inc., Chicago, IL, United States of America – USA-) was used for the statistical analysis.

Findings

Sample description

Sample description data are shown in Table 1 (see analysed sample) and Table 2. The average age of caregivers was 54,0 years (range, 16 to 90), and most of them were primary caregivers (86,2%), women (83,2%) and offspring (60,3%). They cared for an average of 6,09 years, and most of them spent more than 40 hours per week in caregiving (61,9%) and met one or more ADL dependency criteria (64,2%; average number of ADL assisted in the subgroup who provided ADL care: 3,35). They were from both urban and rural areas. Eighty four percent of the caregivers and their care-recipients did not receive any professional help. The agreement with obligation and reciprocity was high in the analysed sample (91,4% and 79,1%, respectively). Twenty-one percent of the caregivers experienced SB.

Variables related to obligation and reciprocity

We analysed the relationships between both obligation and reciprocity and caregiver gender, caregiver age, being the spouse (vs. other relatives and non-relatives), the duration of caregiving, the amount of care provided and the number of ADL assisted (see Table 3). Obligation was positively associated with caregiver age (p= 0,000), being the spouse (p= 0,011) and the number of ADL assisted (p= 0,000). Reciprocity was positively associated with being the spouse (p= 0,004) and male gender (p=0,042).

Obligation and SB

Caregivers agreeing with obligation had more SB (21,4% vs. 17,9%, Odds Ratio [OR]= 1,24), but these differences were not statistically significant (p= 0,478; Chi-square test). After controlling for the duration of caregiving, the intensity of care and gender (binary logistic regression), the association became negative but was not statistically significant (see Table 4).

Reciprocity and SB

There was a negative association between reciprocity and SB both in the bivariate analysis (OR= 0,16; p= 0,000) and in the multivariate analysis after controlling for the duration of caregiving, the intensity of care and gender through binary logistic regression (OR= 0,14; 95% CI= 0,092 – 0,21; see Table 3). Balanced reciprocity explained 13,3% of the variance of SB.

We performed an analysis of interaction effects for the number of ADL assisted (without ADL, up to 3 and more than 3) on the relationship between reciprocity and SB. The adjusted OR (by the duration of caregiving, the amount of care and gender) in each stratum was similar to the previous adjusted crude OR (without ADL: OR= 0,10, 95% CI= 0,05 – 0,22; up to 3: OR= 0,14, 95% CI= 0,07 – 0,29; and more than 3: OR= 0,17, 95% CI= 0,08 – 0,37).

Discussion

Our findings support the idea that both obligation and reciprocity are higher in spouses than in other relatives and non-relatives. Any previous studies analysing this aspect were nor found, but the findings of Hsu and Shyu (2003) could partially explain our results. These authors argued that motives were different in each caregiving phase: obligation triggered caregiving in the beginning and

social exchanges maintained it. In our study, obligation could be the trigger and balanced reciprocity could be the maintainer, and therefore, both were high in spouses. Furthermore, obligation increased with age as well as providing help with ADL. Increasing obligation with age could be explained by a decrease, over time, of the feeling of caregiving duty. Increasing ADL dedication could be explained by the fact that feelings of obligation cause greater caregiving dedication. Regarding this, Chou et al. (1999) showed that filial obligation was a strong predictor of caregiving involvement, and Albert (1992) found a positive association between obligation and ADL impairment. The last finding about variables related to reciprocity (higher in male caregivers) was similar to the finding of previous studies (e.g., Kim et al., 2007; Larson et al., 2008) that showed male caregivers were more likely to appraise the caregiving experience as positive than female caregivers.

No association was found between obligation and SB. This result was in line with the findings of Albert (1992) and Stiens et al. (2006) but differed from the findings of Cicirelli (1993), Choi (1993) and Chou et al. (1999). Albert (1992) analysed a sample of caregivers of chronically ill parents in the USA, and his study had enough statistical power to detect significant statistical differences, while Stiens et al. (2006) studied a convenience sample of 61 caregiver offspring of older people with dementia. Therefore, Stiens et al.'s study had low statistical power, and the conclusions must be discarded. Among the other authors, two (Cicirelli, 1993; Choi, 1993) found a positive association in caregivers of dependent older people in the USA and South Korea, respectively, and one (Chou et al., 1999) found a negative association in caregivers of people with Alzheimer in Taiwan. Thus, two studies (taking into account our study) with enough statistical power found no association and three studies in which confounding bias was controlled found an association. Chou et al. (1999) explained this heterogeneity by the fact that cultural differences could influence how obligation and SB are related, but cultural patterns in obligation and SB were not discussed in previous studies or in Pinquart and Sorensen's systematic review (Pinquart and Sorensen, 2005). Regardless of cultural differences and based on the findings of Ryan and Deci's self-determination theory (Ryan and Deci, 2004), this heterogeneity could be explained by the possible multidimensionality of the concept of obligation: the feeling of duty could be motivated by

personal beliefs or social demands. Following Ryan and Deci's classification of motivation (Ryan and Deci, 2004), personal beliefs were included in "identified regulation" (the activity is judged to be valuable by the person) or "integrated regulation" (the identification with the activity was in harmony with other structures within the self), and social demands were included in "external regulation" (to satisfy an external demand) or "introjected regulation" (social pressure). It is possible that obligation through social demands was positively associated with SB and obligation based on personal beliefs was negatively associated, but these issues must be further investigated. Regarding this, the findings of Romero-Moreno et al. (2010) partially support the previous assumption.

We found a negative association between balanced reciprocity and SB. These findings coincide with those of Dwyer and Miller (1990), Dwyer et al. (1994), Reid et al. (2005), Stiens et al. (2006) and Wright and Aquilino (1998). All of these studies, except the ones by Reid et al. and Stiens et al., controlled for objective burden. Our study and previous studies had cross-sectional designs; therefore, there was no evidence for the direction of the relationships between these variables, and furthermore, these studies can not be clarified if balanced reciprocity was a trigger for caregiving or maintained it. However, balanced reciprocity is reasonably stable over time (Hsu and Shyu, 2003), and the opposite hypothesis (SB causes reciprocity) is hardly plausible. The protective effect of reciprocity on SB is independent of the number of ADL assisted.

Our study has some limitations. First, it has a cross-sectional design. This factor may cause an under-representation of fragile caregivers and prevented us from studying the temporal relationship between these factors. The absence of a temporal relationship does not affect the direction of the relationship between reciprocity and SB due to reasons explained above. Second, this study was a secondary data analysis. However, the institution responsible for collecting these data was the Spanish Ministry of Labour and Social Affairs. Moreover, the variables used in our study were validated (SB) or have been commonly used in caregiving research (the other variables). Third, a subsample of the original sample was analysed in this study. Nevertheless, there were no statistical differences between both samples with respect to caregiver age, caregiver gender, the relationship with the care-recipient and primary caregiver status.

Conclusions

Despite limitations, several conclusions can be drawn: 1) In our study, there were high levels of obligation and reciprocity in spouses, which may be because obligation is the triggering motive and balanced reciprocity is the maintaining motive. 2) Obligation was positively related to age as well as providing help with ADL in the studied sample, whereas reciprocity was positively related to male gender. The latter finding shows that male caregivers more positively appraise the caregiving experience. 3) The findings of our study regarding obligation and SB (no association) point to heterogeneity in the previous relationship. This heterogeneity could be explained by a possible multidimensionality of the concept of obligation (personal beliefs vs. social demands), but this issue requires further investigation. 4) A negative association between balanced reciprocity and SB was found. This finding together with other results increases the evidence regarding the protective effect of reciprocity on SB regardless of the number of ADL assisted. No cultural differences have been found on this issue.

These conclusions have several implications for practice and research. Conclusions 1 and 2 facilitate the understanding of the caregiving process from the comprehension of caregiving motives and its related variables. Conclusion 4 supports the following recommendations to promote health and the quality of life of informal caregivers: a) assessment of reciprocity should be done in a systematic way; b) a lack of balanced reciprocity can be used as a marker of risk in early prevention and early intervention of SB and its consequences; and c) caregiver interventions based on strategies to enhance balanced reciprocity are recommended. Conclusion 3 raises questions that need to be further researched to enhance the comprehension of caregiving motives.

Clinical resources

- AARP: www.aarp.org
- AJN Family Caregivers: www.nursingcenter.com/library/static.asp?pageid=809507
- Family Caregiver Alliance: www.caregiver.org
- Nurse-Caregiver: www.wellsphere.com/wellpage/nurse-caregiver
- The National Family Caregivers Association (NFCA): www.nfcacares.org

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Figures and tables

		Analysed sample (n= 1.272)		Original sample (n= 1.504)		Pilot study sample (n= 204)	
		Average (SD) or %	95% Confidence Interval	Average or %	95% Confidence Interval	Average or %	95% Confidence Interval
Age (years)		54,0 (14,4)	53,2 - 54,8	53,2	52,5 – 54,0	59,2	57,4 - 60,9
Gender	Female	83,2%	81,1 - 85,2	83,6%	81,7 - 85,5	85,1%	79,4 - 89,5
	Male	16,8%	14,1 - 19,0	16,4%	14,5 - 18,3	14,9%	10,5 - 20,6
Relationship	Spouse	20,9%	18,7 - 23,4	18,1%	16,1 - 20,3	30,8%	24,7 - 37,6
	Offspring	60,3%	57,4 - 63,1	61,8%	59,2 - 64,4	60,1%	53,1 - 66,7
	Other relatives	16,3%	14,3 - 18,6	17,3%	15,4 - 19,4	9,1%	5,7 - 14,1
	Non-relatives	2,4%	1,7 – 3,6	2,7%	1,9 – 3,7	0%	---
Primary caregivers		86,2%	84,1 – 88,1	86,1%	84,2 – 87,9	100%	---

Table 1 Description of the sample analysed and comparison with the original sample and the pilot study sample.
NOTES:
SD= standard deviation

		Average (SD) or %	95% Confidence Interval
Duration of caregiving (years)		6,09 (6,36)	5,73 - 6,45
Amount of care (per week)	Up to 8 hours	10,1%	8,5 – 11,9
	From 9 to 20 hours	10,6%	8,9 – 12,5
	From 21 to 40 hours	17,4%	15,4 – 19,6
	Over 40 hours	61,9%	59,2 – 64,6
Type of care	Only IADL	35,8%	33,1 – 38,5
	ADL (with or without IADL)	64,2%	61,5 – 66,9
Number of ADL assisted	All caregivers	2,15 (2,19)	2,03 – 2,27
	ADL assisting caregivers	3,35 (1,86)	3,22– 3,47
Obligation	Yes	91,4%	89.8 – 92.9
	No	8,6%	6.9 – 10.2
Reciprocity	Yes	79,1%	76.9 – 81.4
	No	20,9%	18.6 – 23.1
Subjective burden		21,1%	18.2 – 23.9

Table 2 Description of the sample analysed (II).
NOTES:
SD= standard deviation

		Obligation			Reciprocity		
		%	OR	P value	%	OR	P value
Gender	Female (exposed)	91,5%	0,50	0,829 [a]	78,0%	0,66	0,042 [a]
	Male	91,0%			84,3%		
Age		---	1,04	0,000 [b]	---	1,009	0,064 [b]
Being the spouse	Yes (exposed)	96,4%	2,44	0,011 [a]	85,7%	1,77	0,004 [a]
	No	91,6			77,1%		
Duration of caregiving (years)		---	1,007	0,669 [b]	---	1,02	0,07 [b]
Amount of care (per week)	Up to 8 hours	87,4%	---	0,314 [a]	78,7%	---	0,294 [a]
	From 9 to 20 hours	91,0%			75,2%		
	From 21 to 40 hours	90,9%			75,9%		
	Over 40 hours	92,3%			80,7%		
Number of ADL assisted		---	1,26	0,000 [b]	---	0,95	0,134 [b]

Table 3 Relationships between both obligation and reciprocity and caregiver gender, caregiver age, being the spouse, the duration of caregiving, the amount of care provided and the number of ADL assisted.

NOTES:
OR: Odds Ratio.
[a] Chi-square test.
[b] Binary logistic regression.

	β	p value	OR	95% CI
Obligation	-0,079	0,808	0,93	0,49 – 1,74
Reciprocity	-1,971	0,000	0,14	0,09 – 0,21

Table 4 Caregiving motives vs. subjective burden (binary logistic regression controlling for duration of caregiving, intensity of care and gender).

NOTES:
CI: Confidence interval.
OR: Odds Ratio.