

Do Spanish informal caregivers come to the rescue
of dependent people with formal care unmet needs?

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Preliminary concepts

Formal Care



Paid or free-of-charge attention provided by public or private institutions and non-profit organizations (Keating, 1997)

Informal Care



Attention provided by family, friends or neighbours (Keating, 1997)

Unmet needs



Not covered demand of care

Dependency

- **Permanent state** derived from age, illness or disability and linked to the lack or loss of physical, mental, intellectual or sensorial autonomy
- **Require the care** of another person/other people to perform basic activities of daily living.

Motivation: Decreasing sources of potential support

Factors affecting the supply of informal caregivers

① Average household size:

→1998⇒ 3.23 people

→2007⇒ 2.74 people

(Continuous Household Budget Survey, INE)

② Number of children per woman

→1975⇒ 2.803 children

→2008⇒ 1.458 children

(Basic Demographic Indicators, INE)

③ Divorce rate (per 100 mariages)

→1980⇒ 4.7%

→2007⇒ 63.92%

(Social Indicators, INE)

④ Female labor participation

→1987⇒ 31.83%

→2008⇒ 60.13%

(Active Population Survey, INE)

Motivation: Increasing demands

Factors affecting the demand of care

① Number of elder people living alone:

→ 1998 ⇒ 784.283 (1.98% of population)

→ 2005 ⇒ 1.420.578 (3.18% population)

(Continuous Household Budget Survey, INE)

② Percentage of mentally ill people among those receiving informal care

→ 1994 ⇒ 19.2%

→ 2004 ⇒ 39.6%

(Informal Support Survey, 1994 y 2004)

③ Population projections

	2008	Projections INE. 2060	
		Scene 1 (High immigration)	Scene 2 (Low immigration)
65 and +	16.97%	29.86%	31.97%
65-79	13.02%	16.74%	17.53%
80 and +	3.94%	13.12%	14.44%

(Long term projections, INE)

Motivation: Preferences

Preferences of elder people and informal caregivers

① Opinion about the participation of Public Sector in long-term care

	Elder's opinion (Elders' Living Conditions Survey, 2006)	Informal caregivers (Informal Support Survey, 2004)
Public Sector should take all the responsibility	11.9%	9.8%
Public Sector should be the primary responsible	33.3%	18.1%
Family should receive help for Public Sector	42.6%	65.3%

② Preference for the place for receiving care in case of need

	Elder's opinion (Elders' Living Conditions Survey, 2006)	Informal caregivers (Informal Support Survey, 2004)
At his/her own home, receiving the necessary care	71.3%	70.6%
With a son/daughter	10.6%	5.7%
In a Residential Home	7.4%	17.3%

Literature

- **Previous research has concentrated on:** causes and consequences of **unmet needs** (UNs) (Allen, 1994; Tennstedt et al., 1994; Desai et al., 2001; Sands et al., 2006).
- **Consequences of UNs: Always negative**

↑ Morbidity rate
↑ Degree of severity of disabilities
Downfalls and accidents
↑ Use of emergency departments
↑ Physician visits
↑ Hospital stays
↑ Institutionalization rate



↑ Health expenditure
(Allen and Moor, 1997)
(Komisar et al., 2005;)
(Long et al., 2005)

Limitations of previous studies:

- Did not take into account the characteristics of informal caregivers network
- Omission of principal caregiver's opinion

Questions of interest

1 To what extent personal social services for dependent people (Home Care and Day Centres) are able to satisfy dependent's needs

2 Which factors are associated to the emergence of personal unmet needs?

3 What is the effect of formal unmet needs over informal caregiving hours?

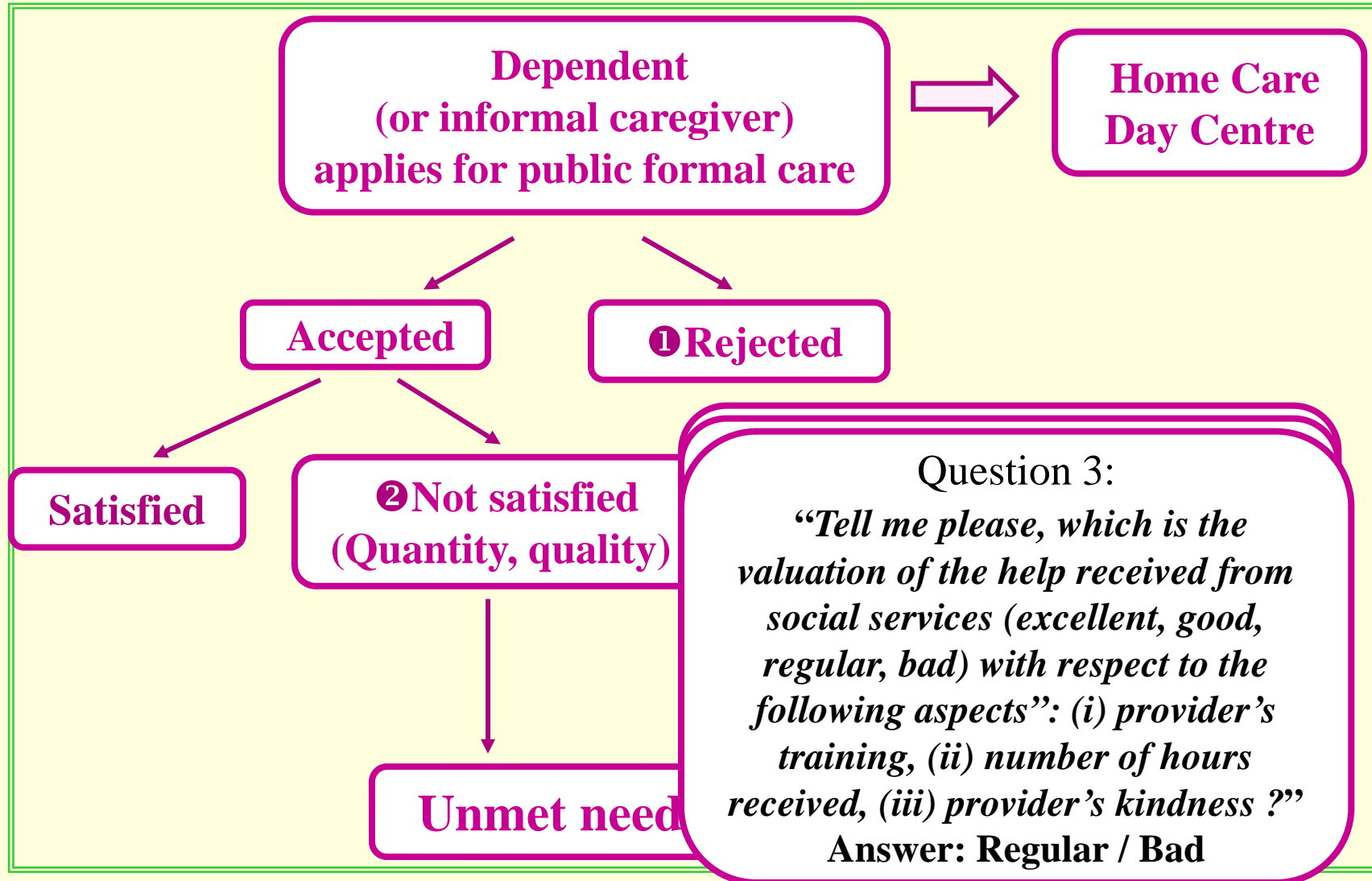
Data

- Informal Support Survey (IMSERSO, 1994 & 2004)
- **Who answers:** informal caregivers (relatives, friends, neighbours) of older people (60 years and older), who may be co-resident or not
- **Sample:** N=1.665 in 1994, N=1.504 in 2004
 - Ceuta, Melilla and La Rioja excluded
- Conclusions can not be applied to:
 - Institutionalized dependent people
 - Individuals who only receive formal care

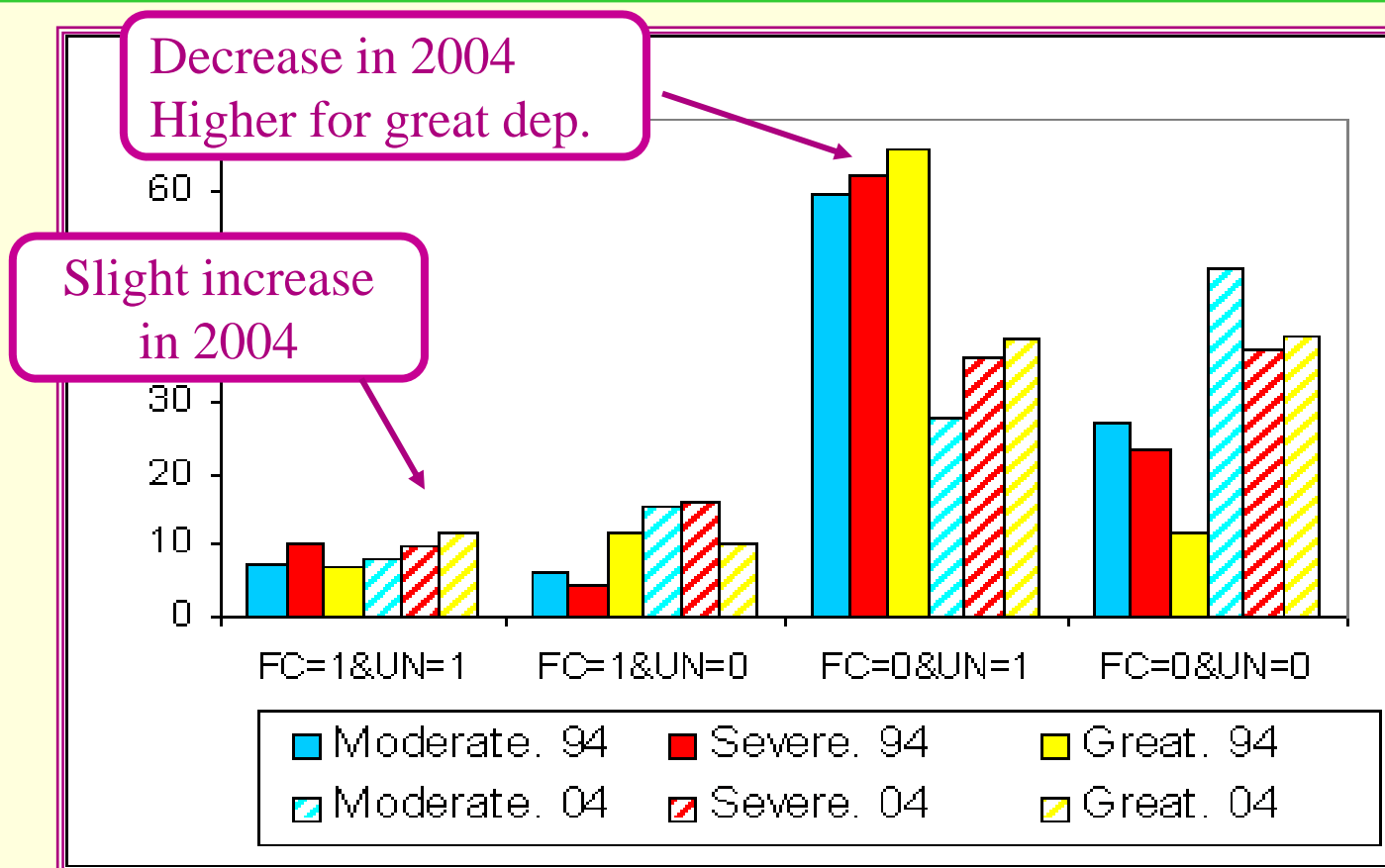
- Innovative approach for determining the dependency degree
 - ➔ Application of the Ranking Scale of Dependency (R. D. 504/2007, de 20 de abril)



Definition of Unmet Needs (UN)



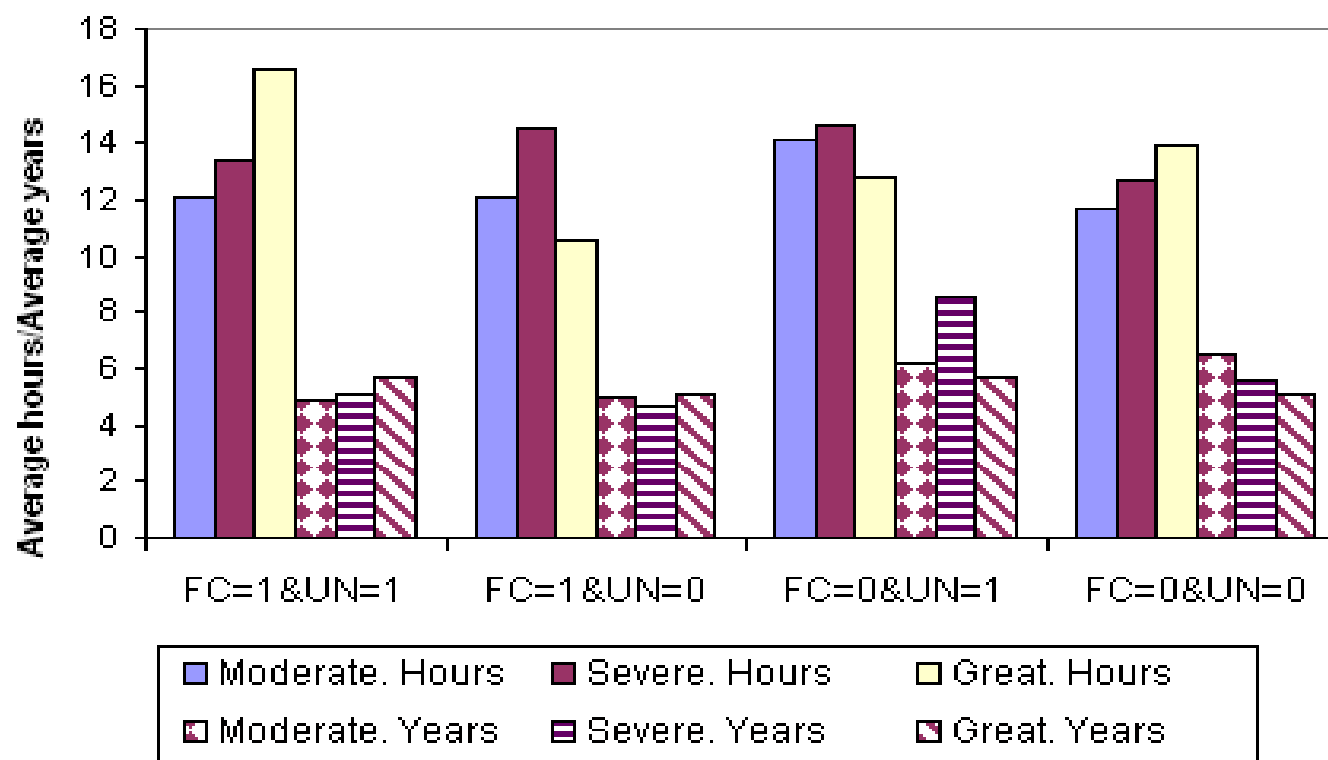
Descriptive statistics



Relation between FC and UN according to dependency degree
Comparison 1994/2004

Descriptive statistics

Average hours and years of informal caregivers who devote at least 21 hours/week, 2004



Descriptive statistics

	Daily caregiving hours 2004
FC=0&UN=0	7.5501
FC=0&UN=1	10.0705
FC=1&UN=0	8.2222
FC=1&UN=1	13.2303

- For the case in which the dependent **does not receive FC**, caregivers with UNs increase their caregiving hours by 33.38%.
- And when the dependent **receives FC**, caregivers with UNs devote 60.90% additional daily hours

- **Is this difference indicating an extra effort by caregivers to compensate for formal care deficiencies?**
- Self-selected group with regard to **observable characteristics**. → estimating caregiving hours which control for the relevant observable variables of each group.
- Self-selected with regard to **unobservable characteristics** (i.e., inadequacy of formal care for the disabilities suffered by the dependent individual), → OLS estimates will be inconsistent.

Double sample selection model

Relation between FC and UNs:

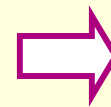
Bivariate probit

$$FC_i^* = X_i' \beta_1 + u_{1i}$$

$$UN_i^* = Z_i' \beta_2 + u_{2i}$$



(FC_i^*, UN_i^*) are unobservable



$$FC_i = \begin{cases} 1 & \text{si } FC_i^* > 0 \\ 0 & \text{otherwise} \end{cases}$$
$$UN_i = \begin{cases} 1 & \text{si } UN_i^* > 0 \\ 0 & \text{otherwise} \end{cases}$$

Double sample selection model

In the hours equation we must take into account



Possible outcomes for the selection process

		Unmet Needs (UN _i)	
		0	1
Formal care (FC _i)	0	S ₁	S ₂
	1	S ₃	S ₄

Define an equation for each subsample where we include the **selectivity terms** to correct the double selection problem

(Tunali, 1986; Ham):

$$\begin{aligned} \ln IH_{1i} &= W_{1i}'\gamma_1 + \delta_{11}\lambda_{11i} + \delta_{12}\lambda_{12i} + \varepsilon_{1i} \\ \ln IH_{2i} &= W_{2i}'\gamma_2 + \delta_{21}\lambda_{21i} + \delta_{22}\lambda_{22i} + \varepsilon_{2i} \\ \ln IH_{3i} &= W_{3i}'\gamma_3 + \delta_{31}\lambda_{31i} + \delta_{32}\lambda_{32i} + \varepsilon_{3i} \\ \ln IH_{4i} &= W_{4i}'\gamma_4 + \delta_{41}\lambda_{41i} + \delta_{42}\lambda_{42i} + \varepsilon_{4i} \end{aligned}$$

$$\begin{aligned} \lambda_{11} &= -\frac{\phi(\Pi_1)\Phi(-\Pi_2^*)}{S_1}; & \lambda_{12} &= -\frac{\phi(\Pi_2)\Phi(-\Pi_1^*)}{S_1} \\ \lambda_{21} &= -\frac{\phi(\Pi_1)\Phi(\Pi_2^*)}{S_2}; & \lambda_{22} &= \frac{\phi(\Pi_2)\Phi(-\Pi_1^*)}{S_2} \\ \lambda_{31} &= \frac{\phi(\Pi_1)\Phi(-\Pi_2^*)}{S_3}; & \lambda_{32} &= -\frac{\phi(\Pi_2)\Phi(\Pi_1^*)}{S_3} \\ \lambda_{41} &= \frac{\phi(\Pi_1)\Phi(\Pi_2^*)}{S_4}; & \lambda_{42} &= \frac{\phi(\Pi_2)\Phi(\Pi_1^*)}{S_4} \\ \Pi_1^* &= \frac{\Pi_1 - \rho\Pi_2}{\sqrt{1-\rho^2}}; & \Pi_2^* &= \frac{\Pi_2 - \rho\Pi_1}{\sqrt{1-\rho^2}} \\ \Pi_1 &= X_i'\beta_1, \Pi_2 = Z_i'\beta_2 \end{aligned}$$

Empirical specification: The dependent variable

- The variable “informal caregiving hours” (IC hours) records the number of daily caregiving hours devoted by the respondent caregiver.
 - In the 1994 survey, the number of caregiving hours is recorded in 4 intervals: less than 1, 1-2, 2-5 and more than 5 hours/day.
 - In the 2004 survey, the number of informal caregiving hours was recorded in the following way: less than one hour, 1-3, 3-5, 5-8 hours/day and more than 8 hours/day.
- Thus, we estimate **interval regressions with bivariate sample selection corrections.**
- Two estimation methods:
 - Two stages
 - ML

Empirical specification: explanatory variables

① Carerecipient's characteristics

Gender, sex, marital status, level of education, dwelling arrangements, degree of dependency, pathologies, type of benefit received, monthly household income

② Caregiver's characteristics

Gender, sex, level of education, marital status, number of caregiving years, permanent caregiver, wilful caregiver, kinship dependent-caregiver, good relation with dependent before the onset of caregiving tasks

③ Informal network:

Secondary caregivers, kinship primary-secondary caregiver, children living at household

④ Formal care

Private formal care

Social services: Home Care (coverage index, time devoted to personal care, **hours/week, cost/hour, copayment**), Day Centre (coverage index, % psychogeriatric places, **copayment**)

+ **Regional policy variables**

+ **Other Variables**

Size of municipality



Empirical specification: Identification

- To ensure the identification of the model, not only by the non-linearity of the selection correction terms, standard selection models require the existence of at least one exclusion restriction.
- However, for the case of double sample selection models, Tunalli (1986) states that it is necessary to impose additional restrictions to identify the selection terms.
 1. At least one variable of each selection equation must not be related to the unexplained hours component.
 2. At least one variable included in the FC equation must not appear in the UNs equation, and vice versa.
 3. these variables must not be included in the hours equations.

Bivariate probit model: Results

① Correlation coefficient → Negative

Dependent people who receive FC are less prone to suffer UN

Bigger effect in 2004

	1994	2004
ρ	-0.1222	-0.2456
	$\chi^2(1) = 4.77778 (0.0288)$	$\chi^2(1) = 18.057 (0.0000)$

② Marginal effects for binary variables → using the sample mean and the sample median

$$E[(FC_i = 0 \& UN_i = 1)_{Mental=1} - (FC_i = 0 \& UN_i = 1)_{Mental=0}] = \\ = \Phi_2(X_i'\beta, Z_i'\gamma; \rho)_{Mental=1} - \Phi_2(X_i'\beta, Z_i'\gamma; \rho)_{Mental=0}$$

Pathologies

	1994				2004			
	FC=0&UN=1		FC=1&UN=1		FC=0&UN=1		FC=1&UN=1	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Mental illness	0.4631	0.4543	0.0507	0.0496	0.4587	0.4501	0.0584	0.0508
Osteoarticular problems	-0.3013	-0.3242	-0.0358	-0.0406	0.1275	0.1296	-0.0027	0.0187

Almost constant for dementia

↑ osteoarticular problems

Bivariate probit model: Dependency variables

	1994				2004			
	FC=0&UN=1		FC=1&UN=1		FC=0&UN=1		FC=1&UN=1	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Degree of dependency								
No dependent	-0.1571	-0.1514	-0.0227	-0.0459	-0.0310	-0.0587	-0.0341	-0.0412
Moderate dependent	-0.1845	-0.2122	-0.0228	-0.0279	-0.0847	-0.0846	-0.0336	-0.0401
Severe dependent	-0.2560	-0.26269	0.1254	0.1348	-0.1163	-0.1264	0.2233	0.2390
Great dependent	-0.4701	-0.4722	0.2518	0.2493	-0.2210	-0.2652	0.3544	0.3513

① Great dependent:

↓ FC=0&UN=1 by 47.01% in 1994 and 22.10% in 2004.

② Moderate dependent:

Lower decrease in the FC=0&UN=1 than GD

Differences between dependency degrees have shortened.

③ Severe or Great dependent:

↑ FC=1&UN=1 by 12.54% and 25.18% in 1994 and has raised to 22.33% and 35.44, respectively, in 2004 → higher probability of both receiving FC and considering it is unsatisfactory.

④ Moderate dependency:

If they receive FC, lower prob. of not being satisfied

Bivariate probit model: Regional Policy Variables

	1994				2004			
	FC=0&UN=1		FC=1&UN=1		FC=0&UN=1		FC=1&UN=1	
	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error
Home Care								
Coverage index	-0.0458	-2.65	-0.1832	-2.81	-0.0514	-2.60	-0.1478	-2.58
Copayment							0.8535	3.01
Cost/hour			0.0181	2.41			0.0770	2.70
Hours/month			-0.0232	-2.41			-0.0273	-2.95
Time to personal care							-0.1071	-2.67
Day Centre								
Coverage index	-0.0346	-3.18			-0.2988	-2.78	-0.0742	-2.72
Copayment							0.8585	2.35
% psycogeriatric places					-0.1963	-2.39	-0.0501	-2.35

① Higher coverage index of Home Care/Day Centre

↓ FC=0&UN=1 & ↓ FC=1&UN=1

In 2004, the negative effect over:

→ FC=0&UN=1 is higher for Day Centre

→ FC=1&UN=1 is higher for Home Care

Bivariate probit model: Regional Policy variables

	1994				2004			
	FC=0&UN=1		FC=1&UN=1		FC=0&UN=1		FC=1&UN=1	
	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error
Home Care								
Coverage index	-0.0458	-2.65	-0.1832	-2.81	-0.0514	-2.60	-0.1478	-2.58
Copayment							0.0535	3.01
Cost/hour			0.8181	2.41			0.8778	2.70
Hours/month			-0.0232	-2.41			-0.0273	-2.95
Time to personal care							-0.1071	-2.67
Day Centre								
Coverage index	-0.0346	-3.18			-0.2988	-2.78	-0.0742	-2.72
Copayment							0.0505	2.35
% psychogeriatric places					-0.1963	-2.39	-0.0501	-2.35

② Home Care includes personal care and houseworking

More time devoted to personal care: ↓ FC=1&UN=1

→ High variability across regions:

→ Maximum: Navarra 80%

→ Minimum: Extremadura 20%

③ More hours/month ↓ FC=0&UN=1 ↓ FC=1&UN=1

→ High variability across regions:

→ Maximum: Galicia 25.14 hours/month

→ Minimum: Andalucía 8 hours/month

Bivariate probit model: Regional policy variables

	1994				2004			
	FC=0&UN=1		FC=1&UN=1		FC=0&UN=1		FC=1&UN=1	
	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error
Home Care								
Coverage index	-0.0458	-2.65	-0.1832	-2.81	-0.0514	-2.60	-0.1478	-2.58
Copayment			0.0181	2.41			0.0535	3.01
Cost/hour			-0.0232	-2.41			0.0770	2.70
Hours/month							-0.0275	-2.95
Time to personal care							-0.1071	-2.67
Day Centre								
Coverage index	-0.0346	-3.18			-0.2988	-2.78	-0.0742	-2.72
Copayment							0.0505	2.35
% psychogeriatric places					-0.1963	-2.39	-0.0501	-2.35

④ Cost/hour & copayment: ↑FC=1&UN=1 and ↑FC=0&UN=1

→ Cost/hour:

→ Maximum: Navarra 22.32 €/hour

→ Minimum: Extremadura 6.18 €/hour

→ Copayment Home Care

→ Maximum: 21% Galicia

→ Copayment Day Centre

→ Maximum: 40% Galicia

Informal hours equations: Selectivity terms

	1994				2004			
	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
Selectivity terms								
λ_{11}	-0.7416				0.3170			
λ_{12}	0.2352				-0.2348			
λ_{21}		1.5874				-0.9381*		
λ_{22}		5.4899***				0.2844		
λ_{31}			-1.0713				0.8656*	
λ_{32}			0.5549				-0.4169	
λ_{41}				-1.3434				0.4612
λ_{42}				-2.6421**				-1.2316***

FC \Leftrightarrow IC
Against
Substitution
Model

FC=0
UN=1

<

FC=1
UN=1

2004:

- $\lambda_{21} < 0$: FC=0&UN=1 more IH than FC=0&UN=0
- $\lambda_{31} > 0$: FC=1&UN=0 less IH than FC=1&UN=1
- $\lambda_{42} < 0$: FC=1&UN=1 more IH than FC=0&UN=1

Informal Caregiving Hours: Dependency Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Moderate. Level 1	-0.2180	0.0054	1.0301 ***	1.9169
Moderate. Level 2	0.5784	0.6181	1.3176 ***	1.8891 **
Severe. Level 1	0.4931	1.6739 ***	1.8758 ***	3.4032 **
Severe. Level 2	1.4201 ***	2.5008 ***	2.6425 ***	4.2650 **
Great. Level 1	1.8537 ***	2.8779 ***	2.7766 **	4.5977 **
Great. Level 2	2.0491 **	3.1479 ***	2.9504 **	4.6551 **
2004				
Moderate. Level 1	1.0486	0.9602	1.1760	1.1000
Moderate. Level 2	1.2337 *	1.6867 **	1.6328 **	2.0206 **
Severe. Level 1	1.0766	2.1611 ***	2.3083 **	4.2123 **
Severe. Level 2	1.8408 *	2.9701 **	3.2252 **	4.5809 **
Great. Level 1	1.9280 **	3.6492 **	3.6161 **	5.5684 **
Great. Level 2	2.1142 **	3.8000 *	3.6331 ***	5.6423 **

① Higher coefficients for FC=1&UN=1 as compared to FC=0&UN=1

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Moderate. Level 1	-0.2180	0.0054	1.0301 ***	1.9169
Moderate. Level 2	0.5784	0.6181	1.3176 ***	1.8891 **
Severe. Level 1	0.4931	1.6739 ***	1.8758 ***	3.4032 **
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2004				
Moderate. Level 1	1.0486	0.9602	1.1760	1.1000
Moderate. Level 2	1.2337 *	1.6867 **	1.6328 **	2.0206 **
Severe. Level 1	1.0766	2.1611 ***	2.3083 **	4.2123 **
Severe. Level 2	1.8408 *	2.9701 **	3.2252 **	4.5809 **
Great. Level 1	1.9280 **	3.6492 **	3.6161 **	5.5684 **
Great. Level 2	2.1142 **	3.8000 *	3.6331 ***	5.6423 **

② For the same dependency degree, informal caregivers devote more hours in 2004 than in 1994.

For example, a level 2 great dependent with FC and UN implied an increase of 4.65 hours/week in 1994 and 5.64 hours/week in 2004.

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Moderate. Level 1	-0.2180	0.0054	1.0301 ***	1.9169
Moderate. Level 2	0.5784	0.6181	1.3176 ***	1.8891 **
Severe. Level 1	0.4931	1.6739 ***	1.8758 ***	3.4032 **
Severe. Level 2	1.4201 ***	2.5008 ***	2.6425 ***	4.2650 **
Great. Level 1	1.8537 ***	2.8779 ***	2.7766 **	4.5977 **
Great. Level 2	2.0491 **	3.1479 ***	2.9504 **	4.6551 **
2004				
Moderate. Level 1	1.0486	0.9602	1.1760	1.1000
Moderate. Level 2	1.2337 *	1.6867 **	1.6328 **	2.0206 **
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Great. Level 1	1.9280 **	3.6492 **	3.6161 **	5.5684 **
Great. Level 2	2.1142 **	3.8000 *	3.6331 ***	5.6423 **

③ The distance in caregiving hours between moderate (level 2) and great dependence (level 2) has increased between both waves:

→ 2.76 hours/week in 1994

→ 3.62 hours/week in 2004

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Moderate. Level 1	-0.2180	0.0054	1.0301 ***	1.9169
Moderate. Level 2	0.5784	0.6181	1.3176 ***	1.8891 **
Severe. Level 1	0.4931	1.6739 ***	1.8758 ***	3.4032 **
Severe. Level 2	1.4201 ***	2.5008 ***	2.6423 ***	4.2650 **
Great. Level 1	1.8577 ***	2.7779 ***	2.7766 **	4.5577 **
Great. Level 2	2.0491 **	3.1479 ***	2.9504 **	4.6551 **
2004				
Moderate. Level 1	1.0486	0.9602	1.1760	1.1000
Moderate. Level 2	1.2337 *	1.6867 **	1.6328 **	2.0206 **
Severe. Level 1	1.0766	2.1611 ***	2.3083 **	4.2123 **
Severe. Level 2	1.8408 **	2.9701 **	3.2732 **	4.5809 **
Great. Level 1	1.9270 **	2.7492 **	3.6161 **	5.2384 **
Great. Level 2	2.1142 **	3.8000 *	3.6331 ***	5.6423 **

④ Difference between with/without UN

FC=0&UN=0 vs. FC=0&UN=1

1994 → 1.09 more hour/week

2004 → 1.68 more hour/week

FC=1&UN=1 vs. FC=1&UN=0

1994 → 1.70 more hour/week

2004 → 2.01 more hour/week

Informal Caregiving Hours: Kinship

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Kinship: Caregiver ⇒ Dependent				
Spouse	0.8342 ***	1.8930 ***	0.9583 **	2.6736 ***
Son/Daughter	0.5358 *	0.7555 *	0.6396 *	1.2598 **
Son/Daughter-in-law	-0.7244	1.2804 ***	0.9975	1.1083
2004				
Kinship: Caregiver ⇒ Dependent				
Spouse	1.4820 **	1.6098 ***	1.4977 *	3.3311 ***
Son/Daughter	1.2060 **	1.3657 **	1.2865 **	2.0212 **
Son/Daughter-in-law	1.0384	1.0313 **	2.5348 ***	2.0295 **

⑤ Kinship of caregiver with respect to dependent:

Existence of a gradient effect?

1994:

- Spouse always provide more CH
- Son/daughter in law: only for FC=0&UN=1

2004:

- Spouse provides less CH
- Son/daughter in law: significant in three cases
 - More CH than spouse and son/daughter when FC=1&UN=0

FC ⇔ IC
Complementary
Task-Specific

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Lives alone	-0.5280	-0.9844 ***	-0.4431	-1.6867 *
2004				
Lives alone	-1.4953 ***	-1.6636 ***	-1.2601	-2.0370 **

⑥ Living alone:

‡ Increase in the % of elder people living alone:

1994 → 24.95%

2004 → 30.05%

‡ Increase in the % of caregivers who invest more than 20 min. in displacement time

1994 → 29.26%

2004 → 24.29%

‡ The number of caregiving hours decreases if UN=1, with a greater effect if FC=1:

1994 → -0.98 and -1.68 hours

2004 → -1.66 and -2.04 hours

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Number of caregiving years				
2-5 years	0.4908	0.3774	0.6252	-0.7706
6-10 years	0.8497 *	0.8343 **	-0.6927	0.7948
More than 10 years	0.7834 * →	1.4007 ***	0.1237	-0.0015
2004				
Number of caregiving years				
2-4 years	1.1320 **	1.1335	1.1839	1.2358
5-12 years	1.0667	1.2015	1.2634	1.5757 **
More than 12 years	1.3260 →	1.4044 **	1.2901	1.6666

⑦ Number of caregiving years:

→ Increase in caregiving hours (around 1.4) when FC=0&UN=1 and the number of caregiving years is greater than 10 (or 12 for 2004).

→ “Career in caregiving” (Aneshensel et al., 1995)

Career sequence: 3 stages

⇒ Acquisition role

⇒ Enactment role

⇒ Disengagement role

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Good previous dependent-caregiver relationship	0.7972 *	0.8364 **	1.9250 ***	0.9966 **
2004				
Good previous dependent-caregiver relationship	0.8312	1.2786 **	1.0091	1.4095 **

⑧ Previous relationship caregiver ⇔ dependent:

→ In 1994: increased the amount of caregiving hours in all situations

→ In 2004:

⇒ We only observe a significant effect for

FC=0&UN=1 and FC=1&UN=1

⇒ Although the amount of care devoted has increased.

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Children under 18 living at home	-0.0247	-0.0516 ***	-0.4929	-0.2033 ***
2004				
Children under 18 living at home	-1.0045	-1.1553 ***	-1.1165	-1.4201 ***

⑨ Children under 18 living at household:

→ May represent an obstacle for caregiving tasks when unmet needs are present.

→ For the situation FC=1&IN=1, having young children decreased the number of caregiving hours:

⇒ 1994: -0.2 hours

⇒ 2004: -1.42 hours

Informal Caregiving Hours: Results

	FC=0 UN=0	FC=0 UN=1	FC=1 UN=0	FC=1 UN=1
1994				
Receives help from other family member	0.0420	-3.0017 ***	-3.0569 ***	-3.8728 ***
2004				
Receives help from other family member	-1.0142	-3.0501 **	-1.0579	-3.9654 **

⑩ Receiving help from other family members:

→ The number of caregiving hours decreases for both waves by 3 hours when FC=0&UN=1 and nearly 4 hours when FC=1&UN=1.

→ However, we found that one person tends to provide all informal care. In 2004:

- ⇒ 57.71% do not receive help from the family
- ⇒ 20.15% receive help from 1 family member
- ⇒ 14.63% receive help from 2 family members
- ⇒ 7.71% receive help from 3 family members

Predicted number of IC hours

- Wives provide more care than daughters for the national average
- Significant differences by Autonomous Communities related to the provision of social services

	FC=0 UN=0		FC=0 UN=1		FC=1 UN=0		FC=1 UN=1	
	Daughter	Wife	Daughter	Wife	Daughter	Wife	Daughter	Wife
Andalucía	6.986	10.145	7.661	11.416	9.137	10.811	7.525	11.416
Aragón	5.796	9.401	6.224	11.629	4.986	8.856	3.372	11.629
Asturias	4.403	7.072	4.430	9.252	6.377	6.869	3.300	9.252
Baleares	4.705	13.130	5.143	14.373	9.810	12.183	7.133	14.373
Canarias	6.537	9.102	7.404	9.090	8.594	12.037	5.761	9.090
Cantabria	6.266	7.066	8.007	9.004	4.412	4.340	8.786	9.004
C. Mancha	6.579	8.682	7.510	9.327	7.797	10.128	9.128	9.327
C. León	5.911	9.052	6.027	9.293	5.020	8.002	5.474	9.293
Cataluña	5.469	7.974	6.333	9.326	5.097	6.763	4.590	9.326
C. Valenciana	6.429	9.244	6.813	10.047	9.200	11.066	7.968	10.047
Extremadura	5.566	8.891	7.643	12.186	6.964	8.374	3.425	12.186
Galicia	6.444	8.836	6.593	9.824	8.556	9.286	6.805	9.824
Madrid	7.095	8.613	5.318	8.066	6.240	7.328	7.308	8.066
Murcia	5.620	8.468	6.713	9.804	6.807	7.754	7.910	9.804
Navarra	4.517	8.919	23.757	17.219	7.116	10.143	3.597	17.219
País Vasco	5.976	7.289	5.654	7.573	5.778	6.889	6.770	7.573
ESPAÑA	6.301	9.083	7.067	10.097	7.614	9.433	6.704	11.502

(a) Caregiver: dependent's wife, aged 50 years and older (11.17% of the sample)

(b) Caregiver: dependent's daughter, aged 30-49 years (22.47% of the sample)

The decomposition of the informal caregiving hours differential

Table 7. Oaxaca decomposition of the informal caregiving differential. 2004

	(FC=1, UN=0) vs. (FC=0, UN=0)			(FC=0, UN=1) vs. (FC=0, UN=0)	
log IH (FC=1, UN=0)	1.018		log IH (FC=0, UN=1)	1.053	
	(10.4345)			(11.3093)	
log IH (FC=0, UN=0)	1.003		log IH (FC=0, UN=0)	1.003	
	(10.0617)			(10.0617)	
Total Difference	0.016		Total Difference	0.051	
difference in Z's	3.579	50.11%	difference in Z's	-1.8232	-37.53%
difference in β 's	-0.120	-1.68%	difference in β 's	-0.3425	-7.05%
difference in λ_1	-1.340	-18.76%	difference in λ_1	-0.2375	-4.89%
difference in λ_2	-2.103	-29.45%	difference in λ_2	2.4544	50.53%
	(FC=1, UN=1) vs. (FC=1, UN=0)			(FC=1, UN=1) vs. (FC=0, UN=1)	
log IH (FC=1, UN=1)	1.107		log IH (FC=1, UN=1)	1.107	
	(11.3093)			(11.3093)	
log IH (FC=1, UN=0)	1.018		log IH (FC=0, UN=1)	1.053	
	(10.4345)			(11.3093)	
Total Difference	0.089		Total Difference	0.054	
difference in Z's	-5.680	-40.57%	difference in Z's	-7.9103	-37.53%
difference in β 's	0.269	1.92%	difference in β 's	1.2211	-7.05%
difference in λ_1	-1.277	-9.12%	difference in λ_1	7.4401	-4.89%
difference in λ_2	6.776	48.39%	difference in λ_2	-0.6964	50.53%

Average hours per week between brackets

Conclusions

- The estimation results show a negative correlation between both the probability of receiving formal care and the probability of having unmet needs, and a significant selection bias of formal care and unmet needs on the number of caregiving hours.
- For both waves the number of caregiving hours increases with the presence of unmet needs, and is even greater when some formal care is received, refuting the substitution model, according to which the provision of formal care produces a decrease in the number of informal caregiving hours.
- For the Spanish case, it seems that formal and informal caregiving are not competing forces. Instead, informal care develops a compensatory and complementary role with respect to formal care.
- We need more data to assess the trade-off between caregiver and carereceiver's welfare. Independent of what macroeconomic figures will show, we should question any reform that casts doubts on the future of many families.



THANKS FOR YOUR ATTENTION

Extra: Ranking Scale of Dependency

➤ Case A: No cognitive impairment, intellectual disability or mental illness:

➤ 10 activities and 51 tasks

Activity			
1. Eating and drinking	2	ACTIVITY 1	
2. Personal hygiene	2	Identifying different foods	0.25
3. Washing oneself	1	Cutting the food in pieces	0.20
4. Other personal care	1	Using knife, fork and spoon	0.30
5. Dressing	1	Taking a glass and drinking	0.25
6. Keeping's one health	NA		
7. Changing body postures	12		
8. Moving inside home	16	ACTIVITY 10	
9. Moving outside home	N	Cooking	0.55
10. Houseworking	N	Shopping for food	0.25
	10	Cleaning the house	0.20
		Washing the clothes	0.10

Resolución de 29 de junio de 2010, de la Secret
Acuerdo del Consejo Territorial del Sistema para
baremo de valoración de la situación de depend
NA = not applicable

Ranking Scale of Dependency

- Case B: **There exists** cognitive impairment, intellectual disability or mental illness:
 - 11 activities and 59 tasks

Activity	Age			
	3-6	7-10	11-17	18 and +
1. Eating and drinking	15.1	10.9	10.9	10.0
2. Personal hygiene	10.6	7.6	7.6	7.0
3. Washing oneself	12.1	8.7	8.7	8.0
4. Other personal care	NA	2.0	2.0	2.0
5. Dressing	17.5	12.0	12.0	12.0
6. Keeping's one health	NA	12.0	12.0	12.0
7. Changing body postures	3.0	2.0	2.0	2.0
8. Moving inside home	18.3	13.0	13.0	13.0
9. Moving outside home	NA	14.0	14.0	14.0
10. Houseworking	NA	NA	NA	NA
11. Taking decisions	23.4	10.0	10.0	10.0
	100.0	100.0	100.0	100.0

ACTIVITY 11	
Deciding about daily meals	0.20
Having hygiene habits	0.10
Deciding personal displacements	0.10
Relating to known people	0.20
Relating to unknown people	0.10
Managing money	0.10
Planning own schedule	0.15
Using public services	0.05

Resolución de 29 de junio de 2010, de la Secretaría General de Políticas Sociales, de acuerdo con el Acuerdo del Consejo Territorial del Sistema para la Autonomía y Atención a la Dependencia, por el que se establece el baremo de valoración de la situación de dependencia establecido en el artículo 14 de la Ley 39/2006, de 14 de diciembre, de Promoción Social y Atención a las personas en situación de dependencia.
 NA = not applicable

Ranking Scale of Dependency

➤ Additionally, for each task:

Coefficient	Degree of support
0.90	Supervision A 3rd person prepares the elements to perform the activity
0.90	Partial physical activity A 3rd person has to participate in the activity
0.95	Maximum physical activity A 3rd person has to substitute the individual in the activity
1	Special support The individual has behavioral problems that hinder the provision of the service

➤ And finally:

$$\text{Score} = \sum \text{Weight of the task performed with difficulty} * \text{Degree of supervision} * \text{Weight of the corresponding activity}$$

Ranking Scale of Dependency

- Classification in three dependency degrees:
 - ➊ **Moderate**: needs help for DLA one a day
 - ➋ **Severe**: needs help two or three times per day
 - ➌ **Great**: needs help for DLA several times per day
- Two levels of supervision inside each degree:
 - Level 1**: can perform the activity by himself
 - Level 2**: requires some degree of support

Dependency degree	Points
No dependent	0-24
Moderate dependent. Level 1	25-39
Moderate dependent. Level 2	40-49
Severe dependent. Level 1	50-64
Severe dependent. Level 2	65-74
Great dependent. Level 1	75-89
Great dependent Level 2	90-100

Ranking Scale of Dependency

		Dependency Law	Informal Support Survey	
		score	1994	2004
No dependency		<25	30.93%	35.79%
Moderate	Level 1	25-39	22.10%	18.28%
	Level 2	40-49	11.65%	11.43%
Severe	Level 1	50-64	16.52%	16.09%
	Level 2	65-74	9.61%	9.24%
High	Level 1	75-89	8.83%	8.24%
	Level 2	90-100	0.36%	0.93%

- Slight decrease in moderate dependency level 1
- Increase in the percentage of individuals without any degree of dependency → effect of the increase in the number of healthy life years at birth, from 67.7 in 1996 to 70.2 in 2003 (Eurostat. Health Indicators)

Ranking Scale of Dependency

Comparison of the estimated degrees of dependency with the White Book of Dependency				
	DDHSS (1999)		Informal Support Survey (1994)	
	65 and more years ^(a)	%	65 and more years	%
Great	141.409	9.91%	149	9.16%
Severe	304.085	20.80%	442	27.17%
Moderate	514.396	36.06%	542	33.31%
Total	1.426.432 ^(b)		1.927	
	Forecasts for 2005 from DDHSS (1999)		Informal Support Survey (2004)	
	65 and more years ^(a)	%	65 and more years	%
Great	163.334	15.39%	137	9.45%
Severe	292.105	27.52%	365	25.19%
Moderate	371.112	34.96%	438	30.23%
Total	1.061.404 ^(b)		1.449	

- **High degree of consistency** between the classification obtained from Informal Support Survey (1994, 2004) and the Disabilities, Deficiencies and Health Status Survey (1999).
- The disparity for high dependency (15.39% vs. 9.45%) may be attributable to the fact that the forecasts for 2005 include the percentage of elderly people who are institutionalized.

