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# IMPACTO EPIDEMIOLOGICO DE LA COMORBILIDAD EN EL ADULTO MAYOR



# Impacto de la Comorbilidad en la Calidad de Vida

- Calidad de vida es un concepto subjetivo que cubre todos los aspectos de la vida, **según lo experimenta el individuo**.
- El concepto calidad de vida tiene componentes fisiológicos, médicos, psicológicos, éticos, sociales, familiares, religiosos y políticos.
- Recordemos que el término salud en Geriátrica es integral y quintuple: Bio-Psico- Social, funcional y espiritual. Pero más que con la presencia o no de enfermedad, lo está con la posibilidad de **autonomía funcional o con el grado de dependencia**.



# Impacto de la Comorbilidad y los Costos Generales de Salud

- In the Medicare program, 10% of beneficiaries account for 70% of medical expenditures.

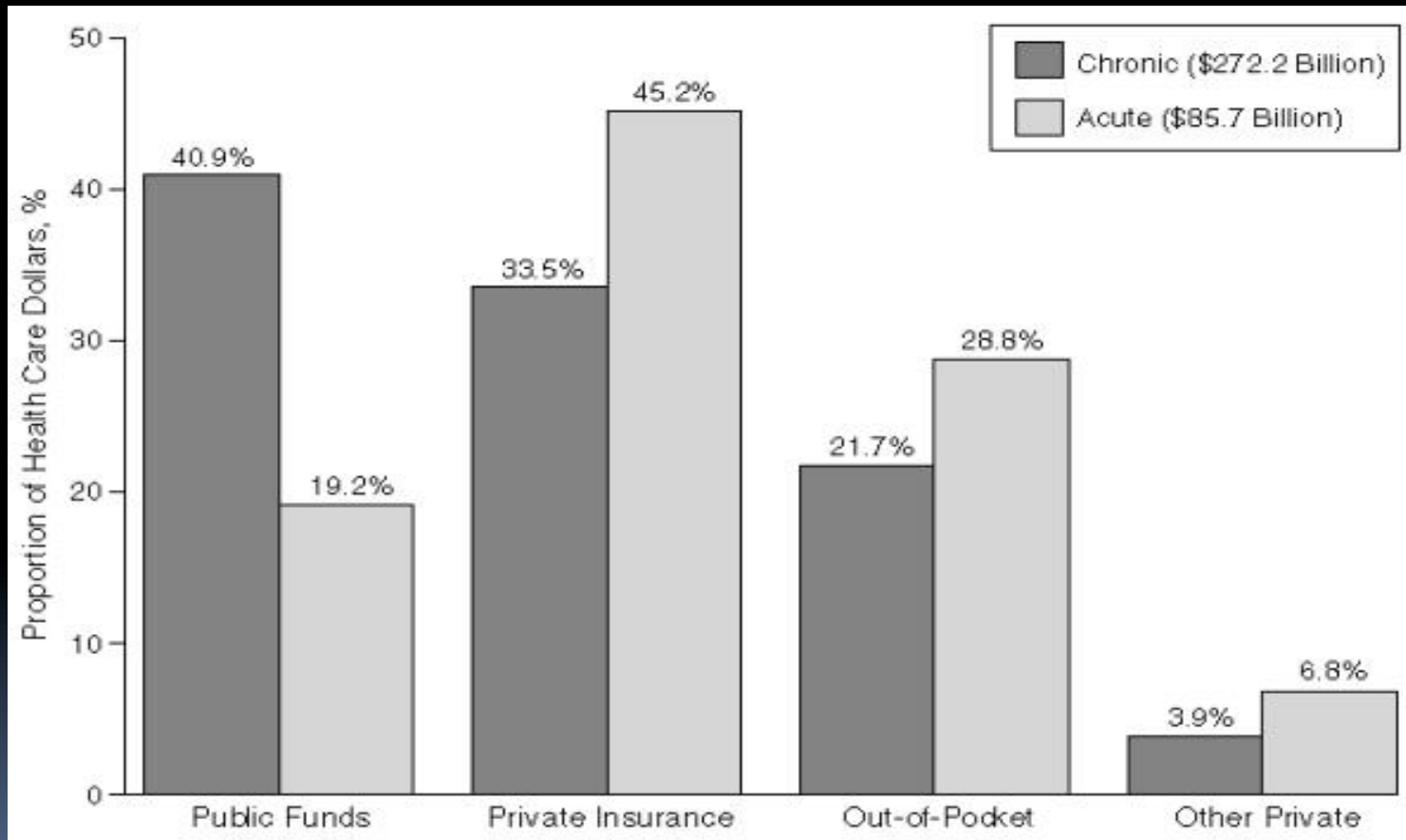
Health Care Financing Administration; February 1995:chart PS-11

- Persons with activity limitations due to chronic conditions represented 17% of the general population in 1987, but accounted for 47% of medical expenditures.

Medical Expenditures for People With Disabilities in the United States, 1987



# Proportion of health care dollars for persons with acute vs chronic conditions, by payer, 1987



**Table 2. Summary of Chronic Disease Prevalence and Annual Costs by Age Group**

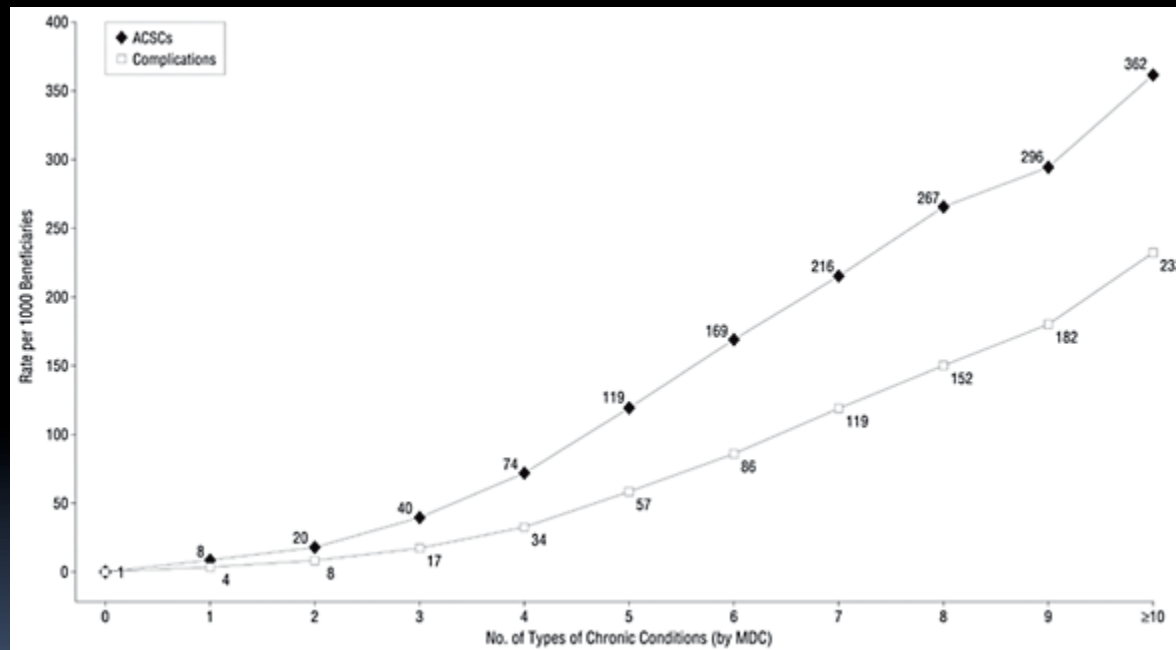
No. of Chronic Conditions*	Age Group, y										Total	
	65-69		70-74		75-79		80-84		≥85		% Beneficiaries	Mean Expenditures, \$
	% Age Group	Mean Expenditures, \$	% Age Group	Mean Expenditures, \$	% Age Group	Mean Expenditures, \$	% Age Group	Mean Expenditures, \$	% Age Group	Mean Expenditures, \$		
0	25.7	195	18.9	203	15.2	205	12.6	222	12.2	303	18.0	211
1	20.4	999	18.0	1073	16.0	1175	14.9	1271	15.0	1579	17.3	1154
2	22.2	2055	22.5	2186	21.6	2348	20.9	2677	21.0	3284	21.8	2394
3	16.0	4227	18.7	4328	19.9	4597	20.4	4997	20.4	5929	18.8	4701
≥4	15.7	14 109	21.9	13 774	27.3	13 857	31.2	13 975	31.4	14 282	24.1	13 973
Overall age group	100.0	3609	100.0	4548	100.0	5424	100.0	6160	100.0	6660	100.0	5015

\*Mean number of chronic conditions for age groups were as follows: 65-69 years, 1.88; 70-74 years, 2.25; 75-79 years, 2.52; 80-84 years, 2.71; ≥85 years, 2.71; and total group, 2.34.

*Jennifer L. Arch Intern Med. 2002;162:2269-2276*



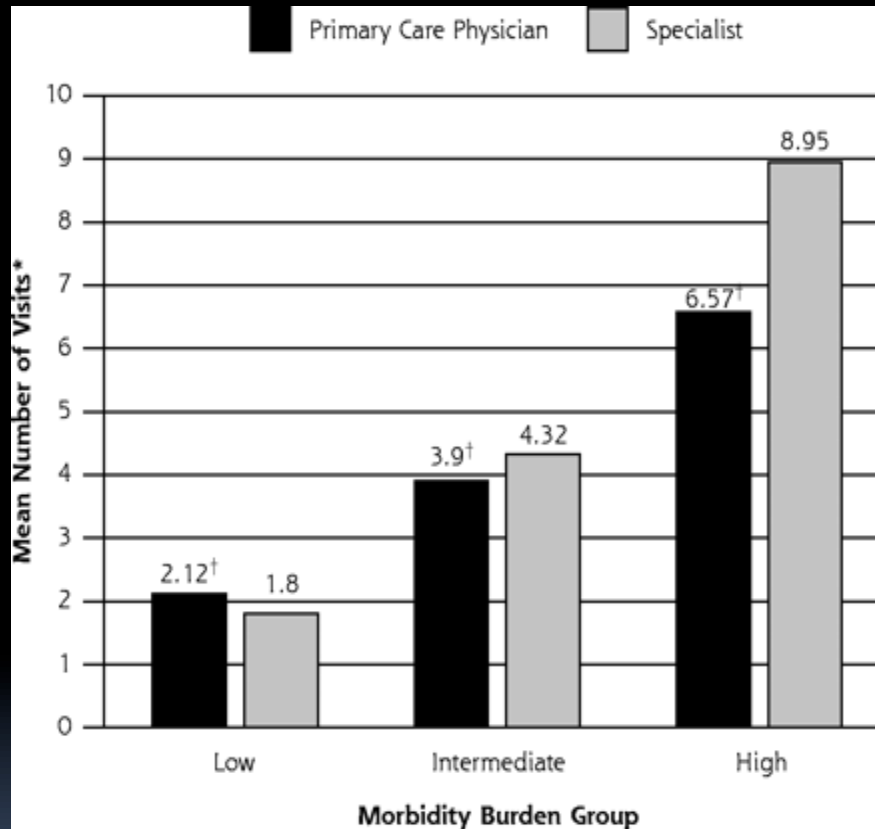
Inpatient hospitalizations associated with avoidable events. ACSCs indicates ambulatory care sensitive conditions; MDC, major diagnostic category



Jennifer L. Arch Intern Med. 2002;162:2269-2276



# Comorbilidad y Consultas Médicas



**Average number of primary care and specialist physician visits for patients for comorbid conditions, in adults aged 65 years and older, by morbidity burden. Ann Fam Med. 2005 May-Jun;3(3):215-22**



# Direct and Indirect Costs of Persons With Chronic Conditions. 1990

	Amount, \$ Billions	% Distribution
<b>Total</b>	<b>659.5</b>	<b>...</b>
Direct costs	425.2	100.0
Medical care		
Hospital care	167.0	39.3
Physician services	104.7	24.6
Prescriptions	24.3	5.7
Other professional	24.0	5.6
Home health	20.7	4.9
Dental services	16.7	4.0
Medical equipment	7.8	1.8
Emergency services	6.7	1.6
Institutional care		
Nursing home care†	53.3	12.5
Indirect costs	<b>234.2</b>	<b>100.0</b>
Morbidity costs	72.9	31.1
Mortality costs	161.3	68.9

\*Mortality costs discounted at 4%. Numbers and percentages may not total precisely due to rounding.

†Data from Letsch et al.<sup>29</sup>(p19[Table 14])





# Proportion of Medical Care Services Used by Persons With Chronic Conditions. 1987

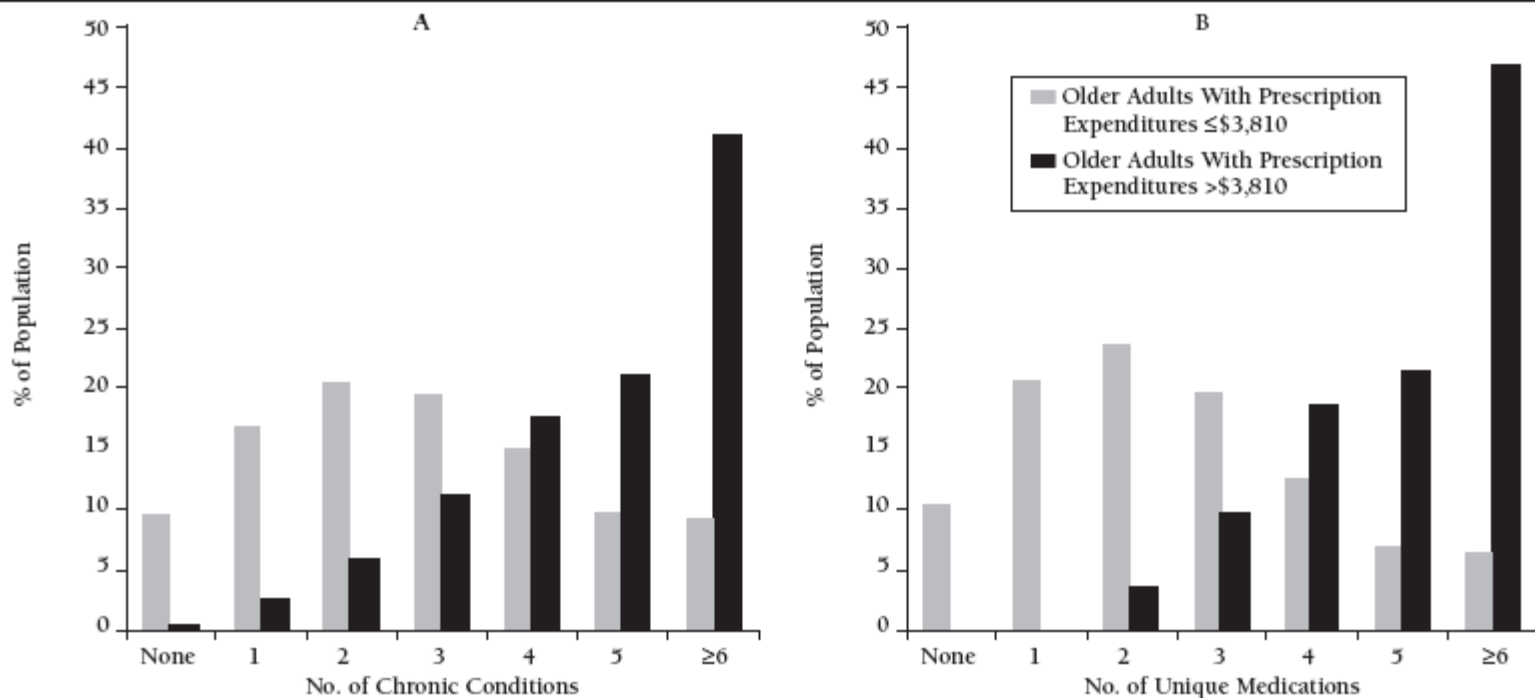
Persons with chronic conditions, %	45.8
Services used by persons with chronic conditions, %	
Home care visits	96.1
Prescription drug use (No. of prescriptions)	83.3
Hospital days	79.9
Visits to other professionals	70.3
Hospital admissions	68.6
Physician visits	66.0
Emergency department visits	55.1



# Comorbilidad y Uso de fármacos

## Characteristics of Older Adults Who Meet the Annual Prescription Drug Expenditure Threshold for Medicare Medication Therapy Management Programs

**FIGURE 1** Number of Self-Reported Chronic Conditions (A) and Unique Prescription Medications (B) Obtained Over the Year (2002 or 2003) for Older Adults by Amount of Prescription Expenditure



**Characteristics of Older Adults Who Meet the Annual Prescription Drug Expenditure Threshold for Medicare Medication Therapy Management Programs**

**TABLE 1** Study Population Characteristics by Amount of Prescription Drug Expenditure

Characteristic	Overall	Older Adults With Prescription Expenditures ≤\$3,810	Older Adults With Prescription Expenditures >\$3,810	P Value*
Years of education, mean (±SE)†	11.8 (±0.1)	11.8 (±0.1)	11.2 (±0.2)	<0.001
>12 years, %	33.5	34.1	28.0	0.001
12 years, %	34.2	34.4	31.8	
<12 years, %	32.3	31.5	40.2	
Total income (\$, mean ±SE)	22,809 (±467)	23,221 (±495)	18,733 (±715)	<0.001
Overall health§				<0.001
Excellent/very good, %	37.5	39.6	17.3	
Good, %	32.9	33.2	30.1	
Fair, %	20.0	18.8	31.6	
Poor, %	9.7	8.5	21.1	
Mental health§				<0.001
Excellent/very good, %	51.5	53.1	35.5	
Good, %	33.9	33.4	39.6	
Fair, %	10.6	9.8	18.6	
Poor, %	4.0	3.8	6.3	
Limitations§				
IADL help, %	20.5	18.6	39.3	<0.001
ADL help, %	11.8	10.4	24.9	<0.001
Physical/functional limitations, %	47.9	45.1	75.4	<0.001
Cognitive limitation, %	17.0	15.8	29.2	<0.001
Vision/hearing problems, %	29.9	28.8	39.9	<0.001
Mean BMI (±SE)‡	26.6 (±0.1)	24.5 (±0.1)	28.3 (±0.3)	<0.001
Underweight or normal (BMI <25), %	40.5	41.6	29.8	<0.001
Overweight (BMI 25-29), %	37.9	38.0	36.9	
Obese (≥30), %	20.4	20.4	33.3	



# Comorbid Anxiety Disorders in Depressed Elderly Patients

**TABLE 2. Lifetime and Current Comorbid Anxiety Disorders in Elderly Patients With Depressive Symptoms or Major Depressive Disorder in Primary Care and Psychiatric Settings**

Diagnosis	All Patients (N=182)		Primary Care Settings				Psychiatric Settings				Analysis $\chi^2$ (df=3) p <sup>a</sup>	
			Patients With Depressive Symptoms (N=66)		Patients With Major Depressive Disorder (N=36)		Outpatients With Major Depressive Disorder (N=40)		Inpatients With Major Depressive Disorder (N=40)			
	N	%	N	%	N	%	N	%	N	%		
One or more anxiety disorders												
Lifetime	64	35.2	26	39.4	16	44.5	5	12.5	17	42.5	11.83	0.008
Current	42	23.1	12	18.2	11	30.6	3	7.5	16	40.0	13.95	0.003
Two or more anxiety disorders												
Lifetime	13	7.1	5	7.6	6	16.7	2	5.0	0	0.0	8.30	0.04
Current	8	4.4	1	1.5	5	13.9	2	5.0	0	0.0	10.90	0.01
Panic disorder												
Lifetime	30	16.5	9	13.6	6	16.7	4	10.0	11	27.5	4.99	0.17
Current	17	9.3	2	3.0	4	11.1	1	2.5	10	25.0	17.03	0.001
Social phobia												
Lifetime	14	7.7	6	9.1	5	13.9	3	7.5	0	0.0	5.46	0.14
Current	12	6.6	4	6.1	5	13.9	3	7.5	0	0.0	6.02	0.11
Specific phobia												
Lifetime	26	14.3	14	21.2	8	22.2	1	2.5	4	10.0	9.24	0.03
Current	16	8.8	6	9.1	5	13.9	1	2.5	4	10.0	3.22	0.36
Agoraphobia <sup>b</sup>												
Lifetime	5	2.8	2	3.0	1	2.8	0	0.0	2	5.0	1.91	0.59
Current	4	2.2	1	1.5	1	2.8	0	0.0	2	5.0	2.53	0.46
Obsessive-compulsive disorder												
Lifetime	4	2.2	0	0.0	1	2.8	2	5.0	1	2.5	3.01	0.39
Current	3	1.7	0	0.0	1	2.8	2	5.0	0	0.0	4.79	0.19
Post-traumatic stress disorder												
Lifetime	3	1.7	1	1.5	2	5.6	0	0.0	0	0.0	4.70	0.20
Current	1	0.6	0	0.0	1	2.8	0	0.0	0	0.0	4.05	0.26

<sup>a</sup> To correct for multiple observations, a significance level of p<0.003 was used.

<sup>b</sup> Without panic disorder.



# Comorbilidad y aspectos sociales en los ancianos

**TABLE 2. ODDS RATIOS FOR REDUCED LEVELS OF PHYSICAL, PSYCHOLOGICAL, COGNITIVE, AND SOCIAL FUNCTIONING IN 1994 ACCORDING TO WHETHER THERE WAS SUSTAINED ECONOMIC HARDSHIP BETWEEN 1965 AND 1983.**

MEASURE ASSESSED AND NO. OF TIMES INCOME WAS <200% OF POVERTY LEVEL*	ADJUSTED FOR AGE AND SEX		ADJUSTED FOR AGE, SEX, AND RISK FACTORS†		ADJUSTED FOR AGE, SEX, AND PREVALENT DISEASES‡	
	ODDS RATIO (95% CI)§	P VALUE	ODDS RATIO (95% CI)§	P VALUE	ODDS RATIO (95% CI)§	P VALUE
<b>Reduced physical functioning</b>						
Difficulty with IADL (n = 1116)						
1	1.41 (0.94-2.13)	0.10	1.29 (0.85-1.97)	0.24	1.34 (0.88-2.05)	0.17
2	1.62 (0.95-2.75)	0.08	1.42 (0.82-2.47)	0.21	1.23 (0.70-2.17)	0.47
3	3.38 (1.49-7.64)	0.003	2.64 (1.14-6.28)	0.03	2.93 (1.24-6.92)	0.01
Difficulty with ADL (n = 1124)						
1	1.49 (0.85-2.59)	0.16	1.39 (0.78-2.47)	0.26	1.37 (0.77-2.44)	0.29
2	1.85 (0.95-3.61)	0.07	1.66 (0.83-3.33)	0.16	1.43 (0.70-2.92)	0.32
3	3.79 (1.32-9.81)	0.01	2.86 (1.00-8.24)	0.05	2.95 (1.02-8.58)	0.05
Difficulty with Nagi performance scale (n = 1108)						
1	1.47 (0.93-2.31)	0.10	1.31 (0.81-2.11)	0.27	1.38 (0.85-2.23)	0.53
2	2.54 (1.50-4.30)	<0.001	2.33 (1.33-4.08)	0.002	2.05 (1.16-3.62)	0.01
3	2.88 (1.20-6.94)	0.02	1.93 (0.77-4.88)	0.16	2.45 (0.93-6.48)	0.07
<b>Reduced psychological functioning</b>						
DSM-III-R criteria for clinical depression (n = 1120)						
1	1.01 (0.58-1.76)	0.96	0.97 (0.55-1.71)	0.92	0.97 (0.55-1.69)	0.91
2	1.72 (0.91-3.29)	0.10	1.68 (0.87-3.23)	0.12	1.54 (0.81-3.00)	0.19
3	3.24 (1.32-7.89)	0.01	2.58 (1.01-6.59)	0.05	3.20 (1.28-8.02)	0.01
Depressive symptoms (n = 1121)						
1	1.75 (1.13-2.70)	0.01	1.65 (1.05-2.59)	0.03	1.72 (1.10-2.68)	0.02
2	4.02 (2.48-6.54)	<0.001	4.00 (2.40-6.62)	<0.001	3.83 (2.31-6.46)	<0.001
3	4.56 (2.07-10.07)	<0.001	3.42 (1.48-7.93)	0.004	3.89 (1.68-9.00)	0.002
Cynical hostility (n = 1081)						
1	2.14 (1.52-3.00)	<0.001	2.05 (1.45-2.90)	<0.001	2.15 (1.52-3.03)	<0.001
2	3.24 (2.10-5.04)	<0.001	3.07 (1.96-4.80)	<0.001	3.16 (2.01-4.96)	<0.001
3	5.09 (2.40-10.86)	<0.001	4.11 (1.87-9.06)	<0.001	4.69 (2.17-10.13)	<0.001
Lack of optimism (n = 1090)						
1	1.48 (1.05-2.09)	0.02	1.35 (0.95-1.92)	0.09	1.41 (1.00-2.03)	0.05
2	2.27 (1.46-3.52)	<0.001	2.08 (1.32-3.26)	0.003	2.05 (1.31-3.23)	0.002
3	5.68 (2.73-11.83)	<0.001	4.32 (2.02-9.24)	<0.001	5.52 (2.59-11.73)	<0.001
<b>Reduced cognitive functioning</b>						
Cognitive difficulties (n = 1116)						
1	1.19 (0.74-1.90)	0.47	1.19 (0.74-1.92)	0.47	1.16 (0.72-1.87)	0.55
2	2.28 (1.35-3.86)	0.002	2.25 (1.31-3.87)	0.003	2.13 (1.23-3.69)	0.007
3	4.60 (2.06-10.32)	<0.001	3.77 (1.62-8.77)	0.002	4.14 (1.79-9.61)	<0.001
<b>Reduced social functioning</b>						
Social isolation (n = 1108)						
1	0.95 (0.65-1.38)	0.79	0.91 (0.62-1.33)	0.63	0.96 (0.66-1.40)	0.84
2	1.33 (0.82-2.15)	0.25	1.31 (0.80-1.93)	0.69	1.27 (0.78-2.08)	0.34
3	1.56 (0.68-3.57)	0.29	1.19 (0.50-2.80)	0.69	1.42 (0.61-3.04)	0.42

\*IADL denotes independent activities of daily living, ADL activities of daily living, and DSM-III-R *Diagnostic and Statistical Manual of Mental Disorders* (third edition, revised).

†The risk factors were the number of periods subjects were in the highest quartiles of body-mass index and alcohol consumption and the lowest quartile of physical activity and the number of pack-years of smoking.

‡Prevalent diseases consisted of heart trouble, chest pain, hypertension, stroke, diabetes, asthma, chronic bronchitis, breathing difficulties, back pain, arthritis, and cancer.

§The reference group is the subjects with no history of economic hardship. CI denotes confidence interval.

Lynch N Engl J  
Med 337:1889,  
December 25, 1997



# Chronic Disease, Functional Status Causes of Disabilities Among Noninstitutionalized Older People in Spain

- Cerebrovascular diseases, depression/anxiety disorders, and diabetes were the conditions more clearly related to disability. On the other hand, a large proportion of subjects attribute their disabilities to osteoarthritis and old age.

*Valderrama-Gama. The Journals of Gerontology  
Series A: Biological Sciences and Medical  
Sciences 57:M716-M721 (2002)*



# Comorbilidad y Calidad de Vida

(Multimorbidity and quality of life in primary care: a systematic review)

- Un meta-análisis que revisa 7 estudios cuyo objetivo final es evaluar como impacta la comorbilidad la calidad de vida, encontró lo siguiente:
  - **1. En todos se afecta la calidad de vida**
  - 2. Ninguno valoró el impacto de la comorbilidad psiquiátrica.
  - 3. No se analizó el grado de alteración funcional que producían las enfermedades.



# Aspectos no estudiados que impactan al adulto mayor

- Comorbilidad y Síndromes demenciales
- Comorbilidad y iatrogenia médica
- Comorbilidad y otros Síndromes Geriátricos:
  - Incontinencia Urinaria y/o fecal
  - Síndromes de inmovilidad
- Comorbilidad y Cuidados durante la transición
- Comorbilidad y Parkinson
- Comorbilidad y Osteoporosis





# Conclusión

- Comorbilidad afecta:
  1. Costos Generales de Salud
  2. Mayores Hospitalizaciones
  3. Mayores demandas de consulta
  4. Eleva consumo de fármacos
  5. Afecta el desempeño funcional y calidad de vida
  6. Se asocia a mayor morbilidad psiquiátrica
  7. Se requieren estudios que determinen el impacto de otras enfermedades crónicas de alta prevalencia e incidencia.

