

# Socio Economic Factors Shaping Older People Health Disparities in Latin-America.

## *The Case Of Chile*

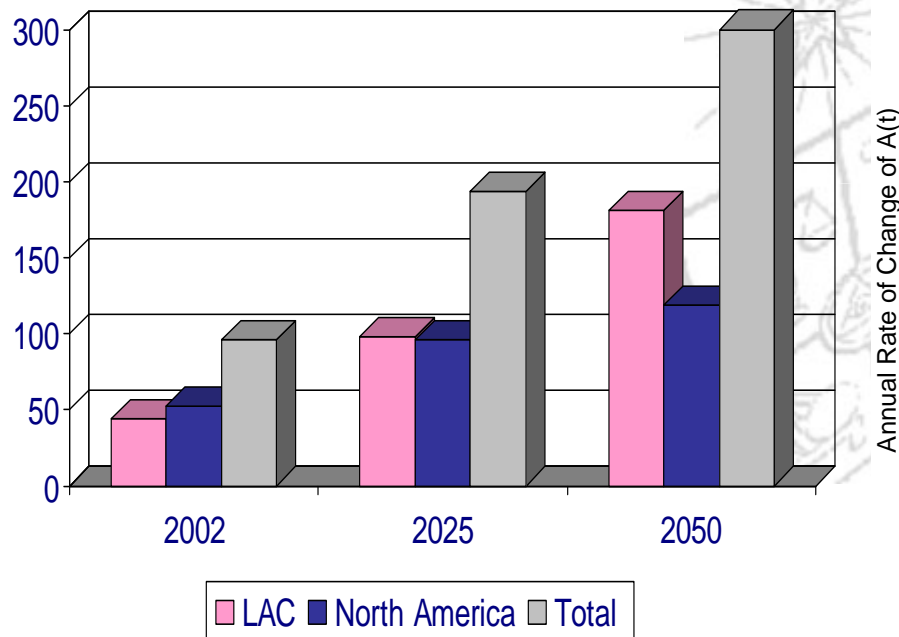
Prof. Cecilia Albala  
INTA/Universidad de Chile

*22nd REVES Meeting. Havana May 2010*



# Aging in Latin America is characterized by unprecedented speed and massiveness

AMERICAS: Population Aging  
2002 – 2050 (in millions)



Aging of LA & Europe

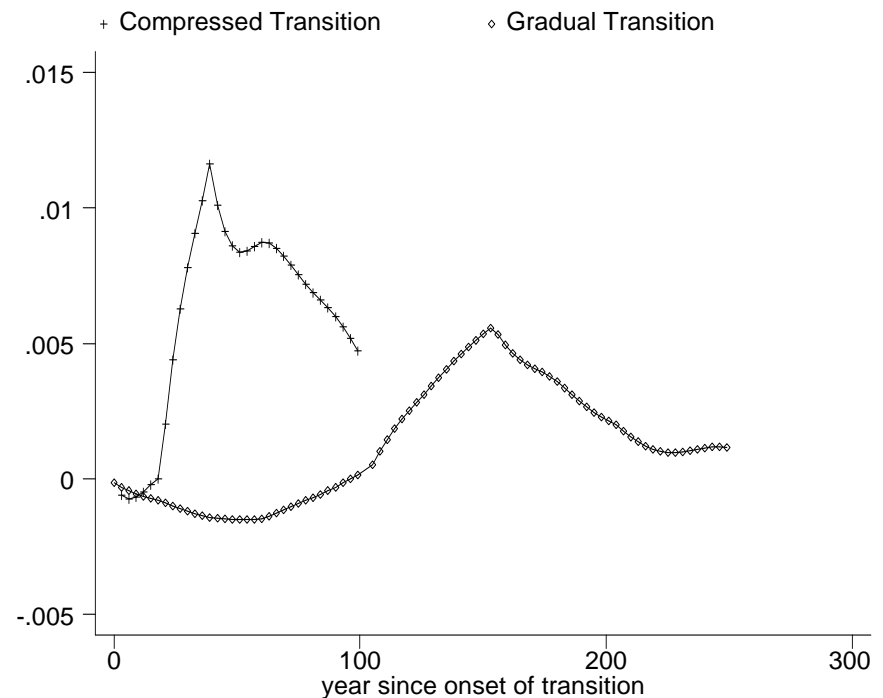


Figure 2a: Speed of Aging in Two Demographic Regimes

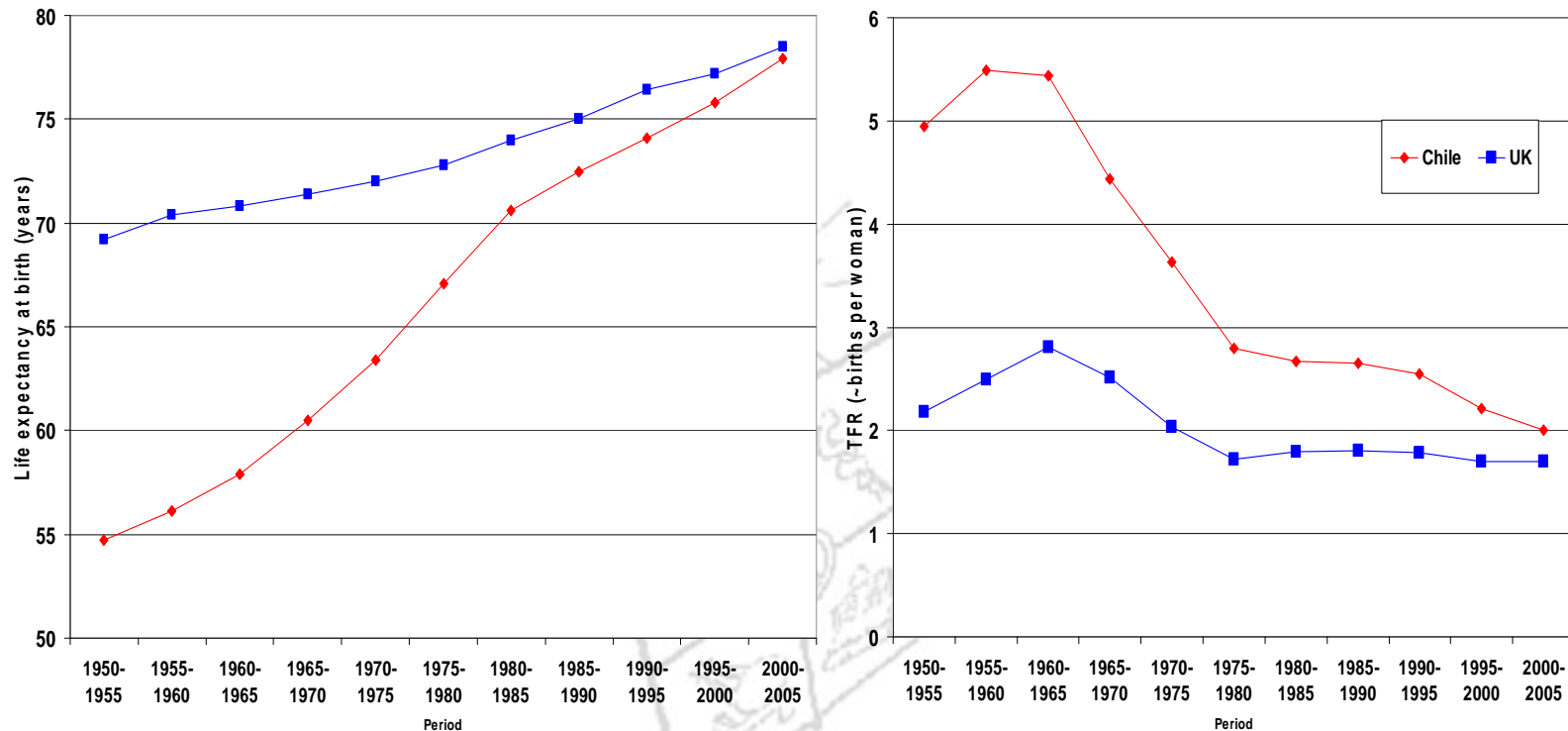


UN World Population Ageing 1950-2050

Ref. Palloni et al 2003



## Trends in fertility (TFR) and mortality Chile and the UK, 1950-2005.



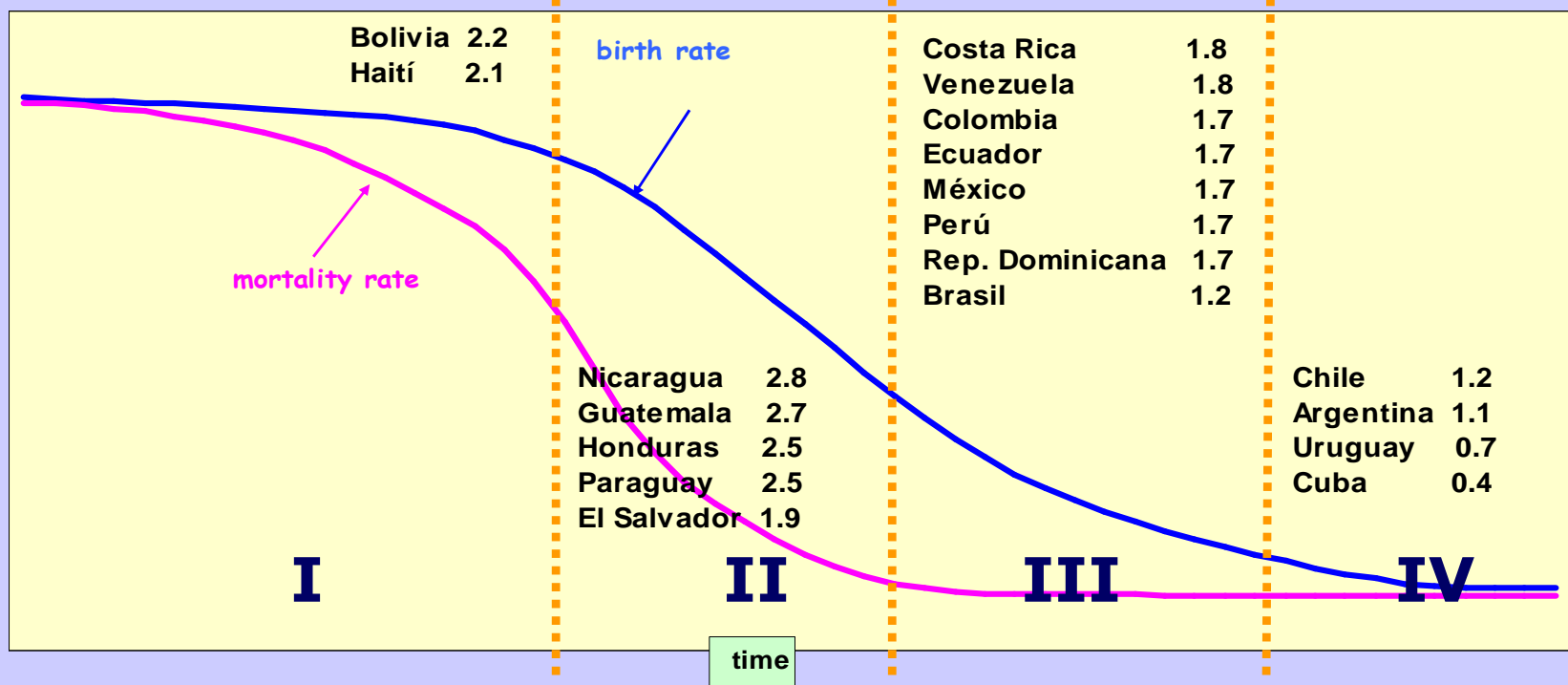
Source: Emily Grundy, UN 2006.

In Chile, low rates of fertility and mortality were achieved much more rapidly than in the now developed world.



# Demographic transition in Latin America

Latin American countries according stage of demographic transition and annual pop growth % 2000-2005



Ref. Bravo J. CELADE 2002

## Socioeconomic characteristics of selected Latin American countries

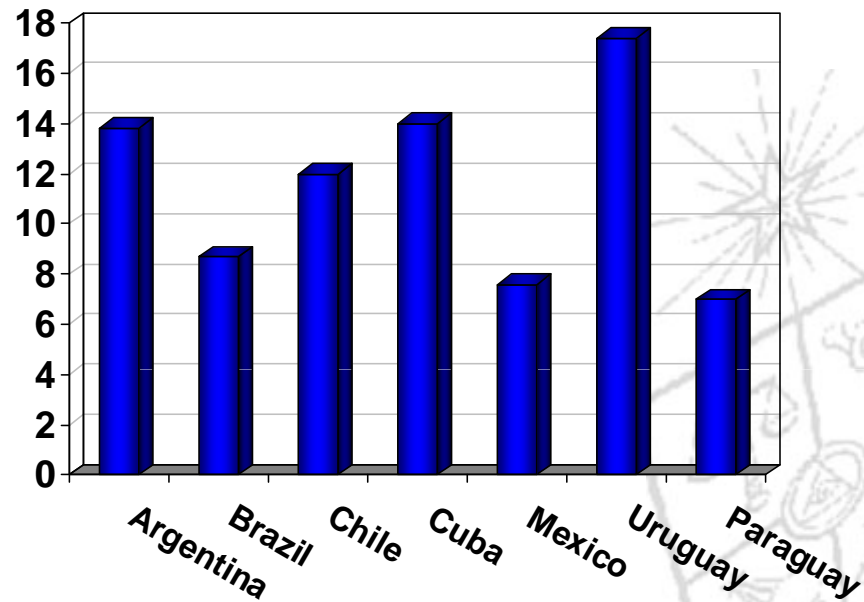
	Argentina	Brazil	Chile	Mexico	Paraguay	Uruguay
HDI (ranking)						
1990	0.81 (38)	0.72 (70)	0.79 (40)	0.80(46)	0.72 (95)	0.81 (46)
2008	0.86 (46)	0.81 (70)	0.87 (40)	0.85(53)	0.75 (98)	0.86 (47)
GDP US\$ppp						
1990	<b>5170</b>	<b>5100</b>	<b>4500</b>	<b>5990</b>	<b>2920</b>	<b>4880</b>
2007	<b>12990</b>	<b>9370</b>	<b>12590</b>	<b>12580</b>	<b>4380</b>	<b>11040</b>
H20/L20 2000-2005	<b>17.9</b>	<b>21</b>	<b>15.8</b>	<b>12.8</b>	<b>25.8</b>	<b>10.1</b>
% Urban pop						
1990	<b>87</b>	<b>75</b>	<b>83</b>	<b>72</b>	<b>49</b>	<b>89</b>
2006	<b>90</b>	<b>85</b>	<b>88</b>	<b>77</b>	<b>59</b>	<b>92</b>
Drinking water % 2006	<b>96</b>	<b>91</b>	<b>97</b>	<b>95</b>	<b>77</b>	<b>100</b>
% Sanitation 2006	<b>91</b>	<b>77</b>	<b>94</b>	<b>81</b>	<b>70</b>	<b>100</b>
% Literacy ≥15 2000-05	<b>97.2</b>	<b>88.6</b>	<b>95.7</b>	<b>92.4</b>	<b>93.5</b>	<b>98</b>

Source: WHO. World Health Statistics 2008. Part 2 Global Indicators

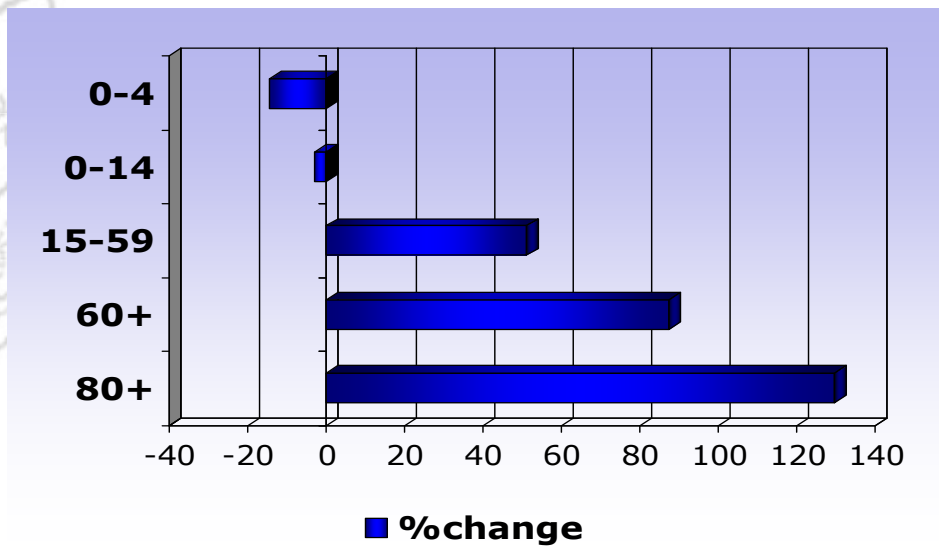
## Demographic characteristics of selected Latin American countries

	Argentina	Brazil	Chile	Mexico	Uruguay	Paraguay
IMR						
1990	<b>24</b>	<b>48</b>	<b>18</b>	<b>38</b>	<b>33</b>	<b>22</b>
2006	<b>14</b>	<b>19</b>	<b>8</b>	<b>18</b>	<b>19</b>	<b>13</b>
TFR 1990	<b>2.8</b>	<b>2.5</b>	<b>2.6</b>	<b>3.4</b>	<b>2.5</b>	<b>4.5</b>
2006	<b>2.3</b>	<b>2.3</b>	<b>2.0</b>	<b>2.2</b>	<b>2.2</b>	<b>3.2</b>
Mortality rate 15-60						
Men						
1990	<b>198</b>	<b>272</b>	<b>196</b>	<b>215</b>	<b>173</b>	<b>195</b>
2006	<b>162</b>	<b>230</b>	<b>98</b>	<b>154</b>	<b>123</b>	<b>164</b>
Women						
1990	<b>103</b>	<b>150</b>	<b>98</b>	<b>120</b>	<b>99</b>	<b>98</b>
2006	<b>86</b>	<b>121</b>	<b>60</b>	<b>89</b>	<b>101</b>	<b>88</b>
Tot LEB	<b>75</b>	<b>72</b>	<b>78</b>	<b>76</b>	<b>75</b>	<b>75</b>
Women	<b>78</b>	<b>75</b>	<b>81</b>	<b>78.4</b>	<b>79</b>	<b>78</b>
Men	<b>72</b>	<b>68</b>	<b>75</b>	<b>73.5</b>	<b>72</b>	<b>72</b>
Dependency ratio						
1994	<b>63</b>	<b>61</b>	<b>57</b>	<b>69</b>	<b>60</b>	
2006	<b>57.3</b>	<b>51.3</b>	<b>48.5</b>	<b>56.0</b>	<b>59.6</b>	<b>65.2</b>

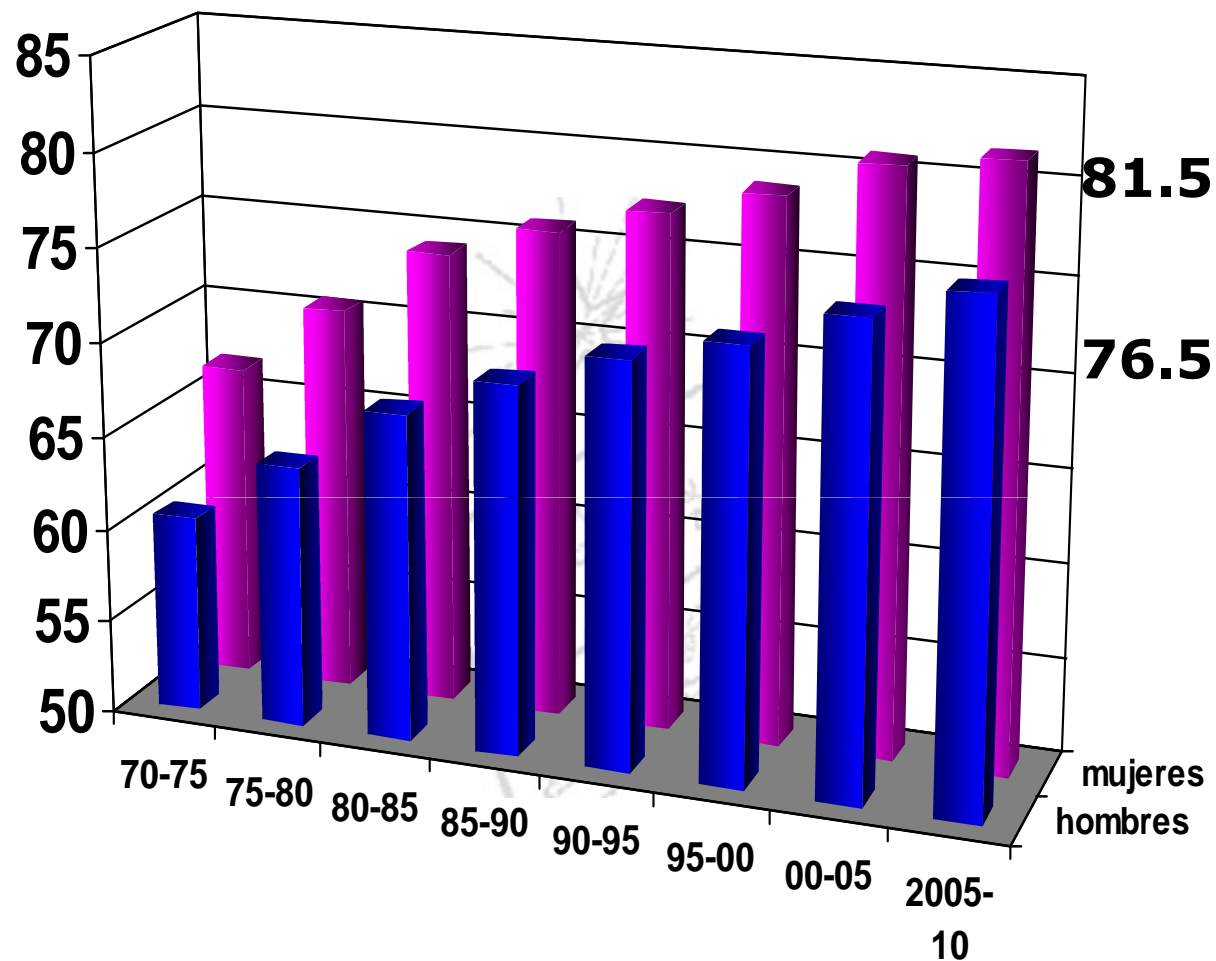
**% population  $\geq 60y$  selected  
LA countries 2005**



**Population Change (%) by groups  
of age . Chile 1990-2010**



## Life Expectancy at birth Chile 1970-2010



FUENTE: *INE-CELADE. Chile, Estimaciones y proyecciones de población por sexo y edad. Total país 1950-2050.*



## *Mean family size has decreased*

		mean	Q1	Q5
<b>Argentina</b>	1986	3.5	4.2	2.9
	1999	3.3	4.7	2.6
<b>Brazil</b>	1987	3.9	4.7	3.2
	1999	3.6	4.4	2.9
<b>Chile</b>	1987	4.2	5.0	3.4
	1999	3.9	4.7	3.1
<b>Mexico</b>	1984	5.0	6.6	3.5
	1999	4.1	6.1	3.5
<b>Uruguay</b>	1986	3.4	4.5	2.9
	1999	3.2	4.6	2.3
<b>Guatemala</b>	1999	4.8	6.3	3.5

Ref. Arriagada I. 2004

# ***Aging and Health***

Aging is accompanied by gradual deterioration of physical and mental health with body composition changes, altered immune function, cognitive function decline and increasing Chronic and degenerative diseases

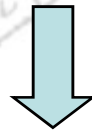


## ***Functional Limitations***

The mobility and mental function are the elements that best define the autonomy, independence and social contact



## ***Disability***



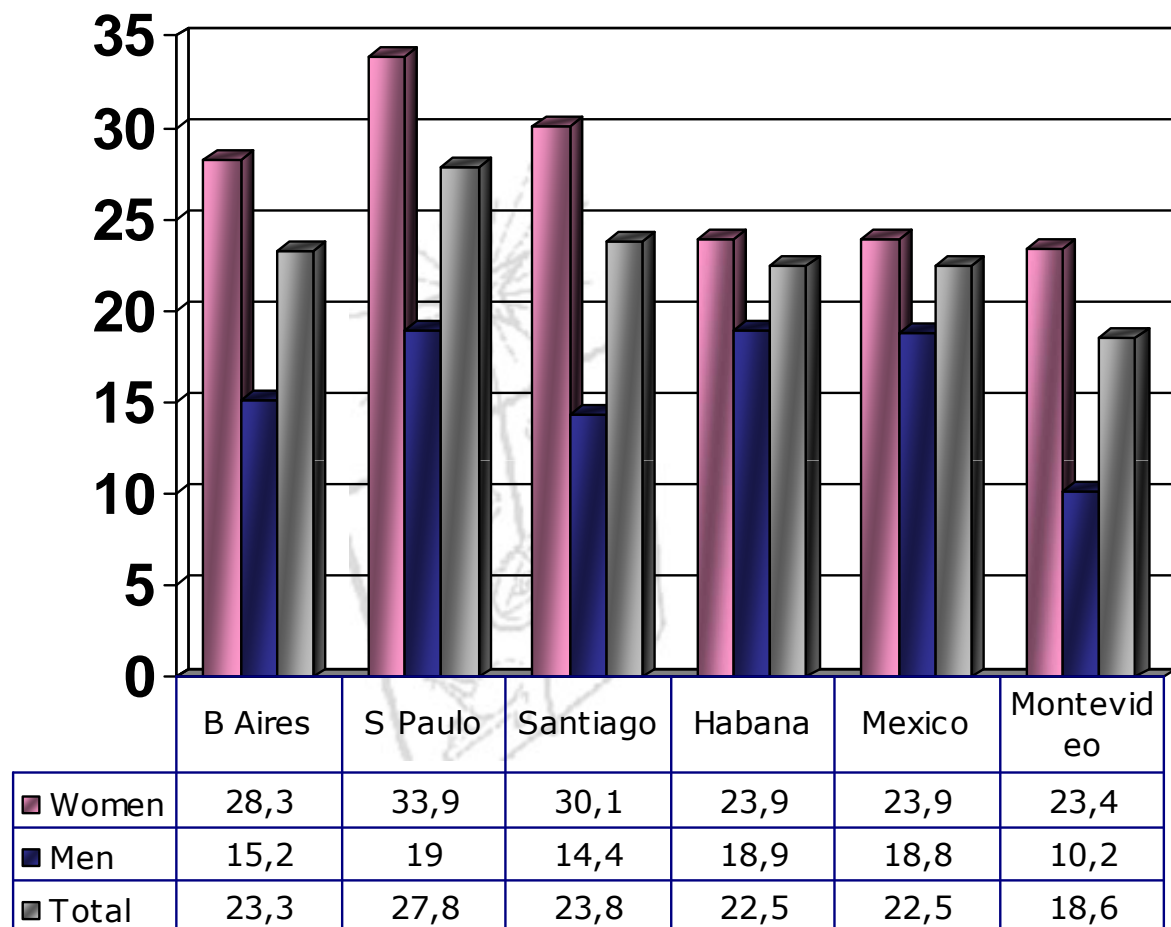
## ***Dependence***

The resulting decline in HLE determine an increase in demand for care and services with the subsequent escalation of health costs.

## ***Prevalence (%) Of Chronic Diseases In The Elderly National Health Survey. Chile 2003***

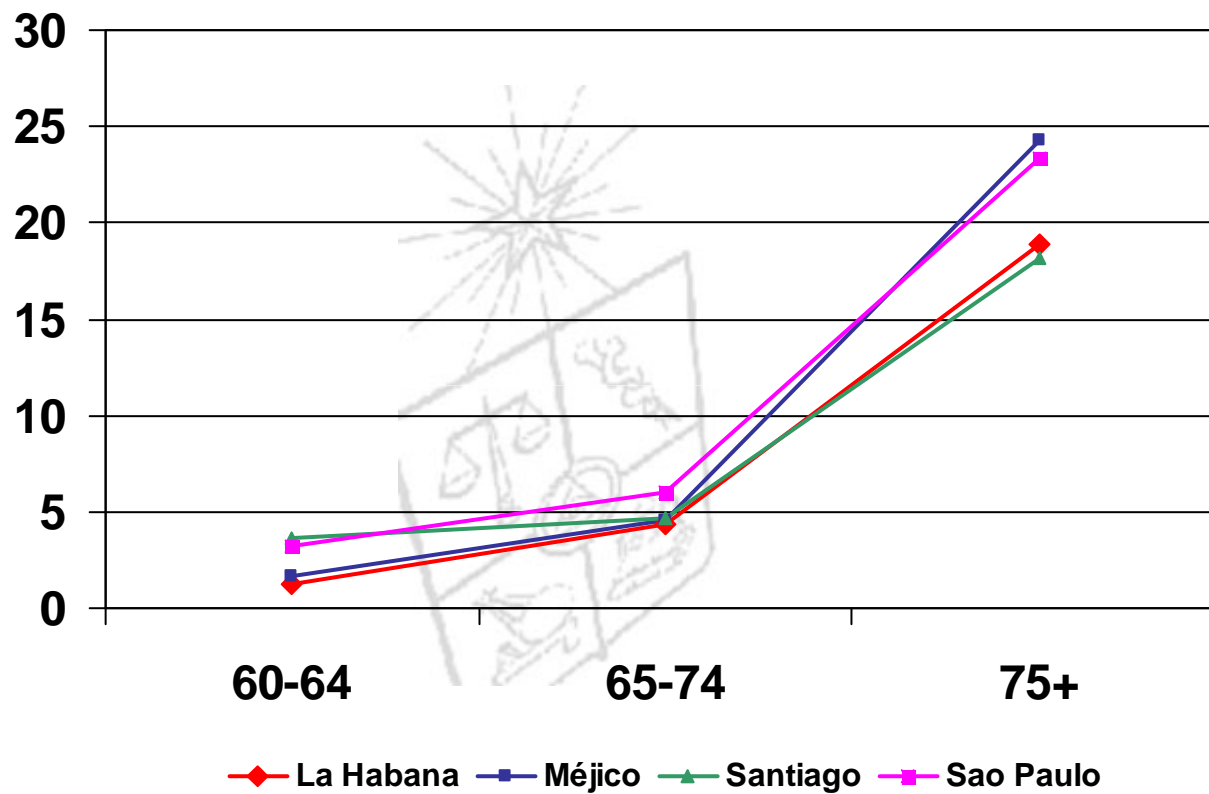
	Men	Women
<b>Hypertension</b>	74.6	81.8
<b>Metabolic Syndrome</b>	47.2	48.7
<b>Muscle skeletal disorders</b>	39.8	56.8
<b>Diabetes</b>	15.8	14.8
<b>Chronic respiratory Disease</b>	31.3	30.6
<b>Hearing impairment</b>	94.5	88.7
<b>Possible CHD</b>	21.4	31
<b>Obesity</b>	27.8	29.8

# Prevalence of functional limitation. 6 Latin American cities. The SABE project. 2000.

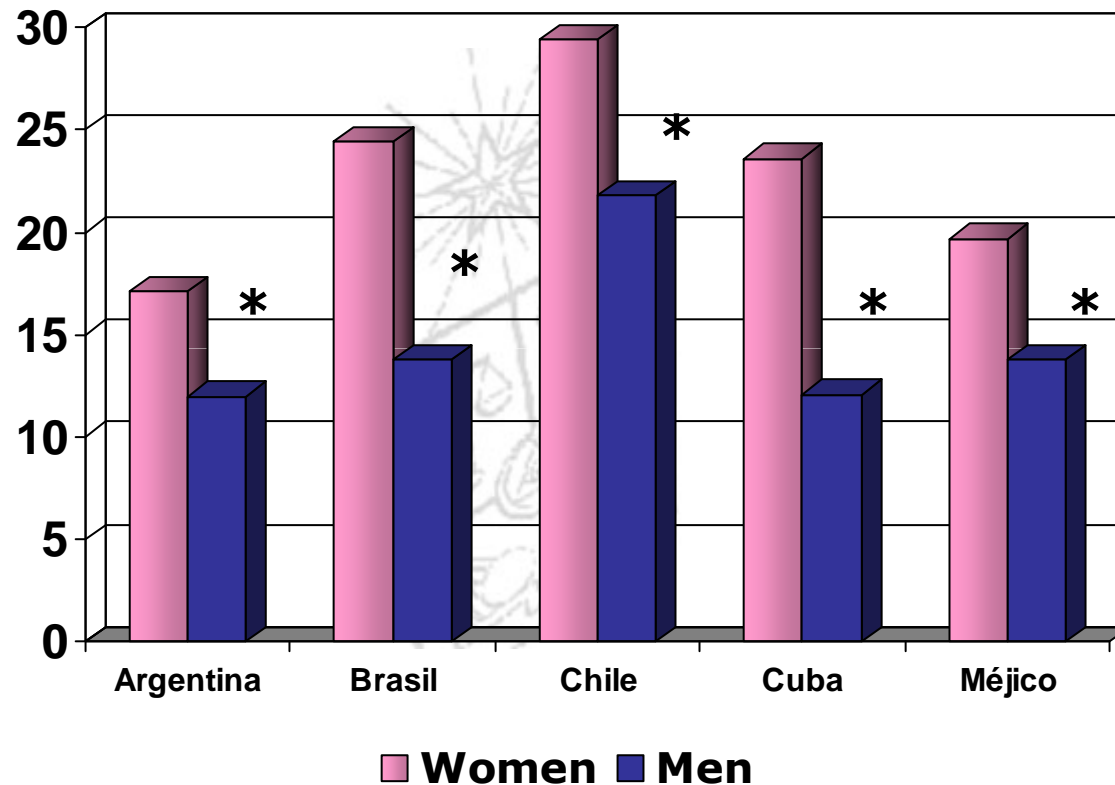


\* 1 ADL and/or 2 IADL and/or 3 mobility items with limitation

## Cognitive Impairment by Age in 4 Latin American Cities. The SABE Project



# Prevalence of of depression symptoms\*\*. 5 Latin American cities. The SABE Project. 2000



\*diferences between men & women  $p < 0.001$

\*\* GDS-15. score  $\geq 5$



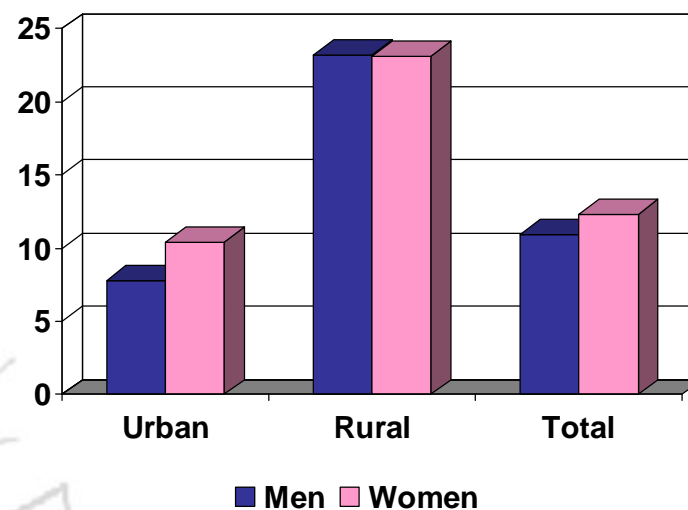
**Total Life Expectancy. Active life expectancy  
& unhealthy years by gender  
Santiago SABE Sample 2000-2005\***

Age	HALE (ES)	Unhealthy years (ES)	TLE Years	% LE in Healthy state
<b>MEN</b>				
<b>60</b>	<b>15.3</b>	<b>6.4</b>	<b>21.7</b>	<b>70.5</b>
<b>70</b>	<b>9.7</b>	<b>5.4</b>	<b>15.1</b>	<b>64.4</b>
<b>80</b>	<b>5.7</b>	<b>4.1</b>	<b>9.8</b>	<b>58.1</b>
<b>WOMEN</b>				
<b>60</b>	<b>12.4</b>	<b>12.0</b>	<b>24.4</b>	<b>50.7</b>
<b>70</b>	<b>8.2</b>	<b>9.5</b>	<b>17.8</b>	<b>46.3</b>
<b>80</b>	<b>4.3</b>	<b>7.3</b>	<b>11.6</b>	<b>36.8</b>

**\*MSLT IMACH 0.96**



## Unable to read and write 2010



## Years of schooling by gender Chile 2000-2010

	<i>MEN</i>		<i>Women</i>	
	<b>2000</b>	<b>2010</b>	<b>2000</b>	<b>2010</b>
<b>none</b>	7.5	6,6	10	7,7
<b>1-8</b>	69	56,1	71.4	61,6
<b>9-12</b>	14.1	32.4	13.8	26.7
<b>&gt;12</b>	9.4	5	4.8	4

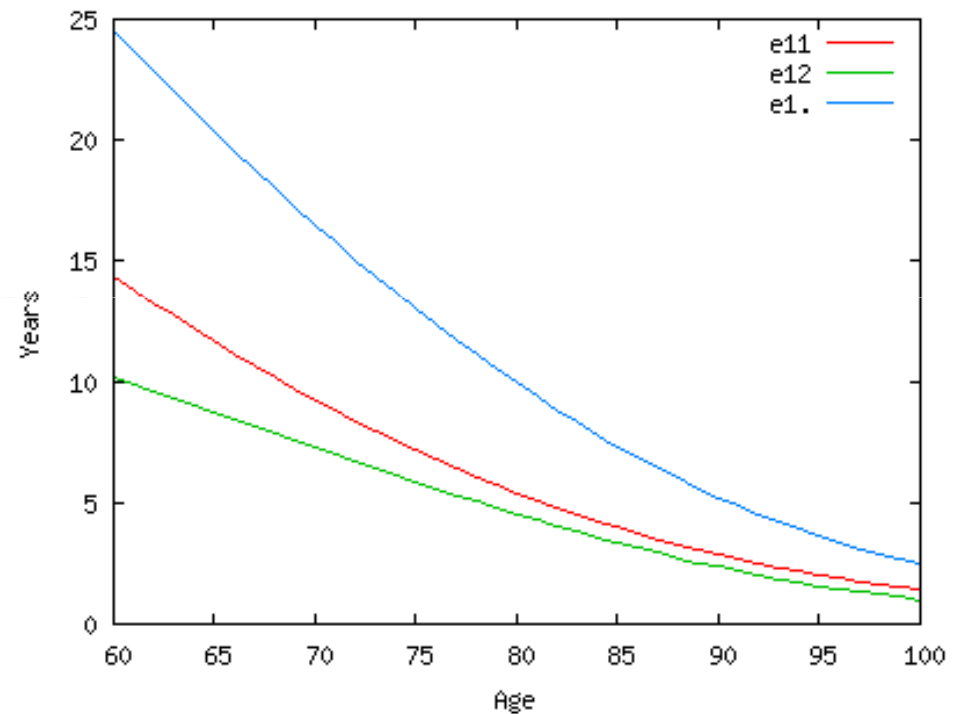
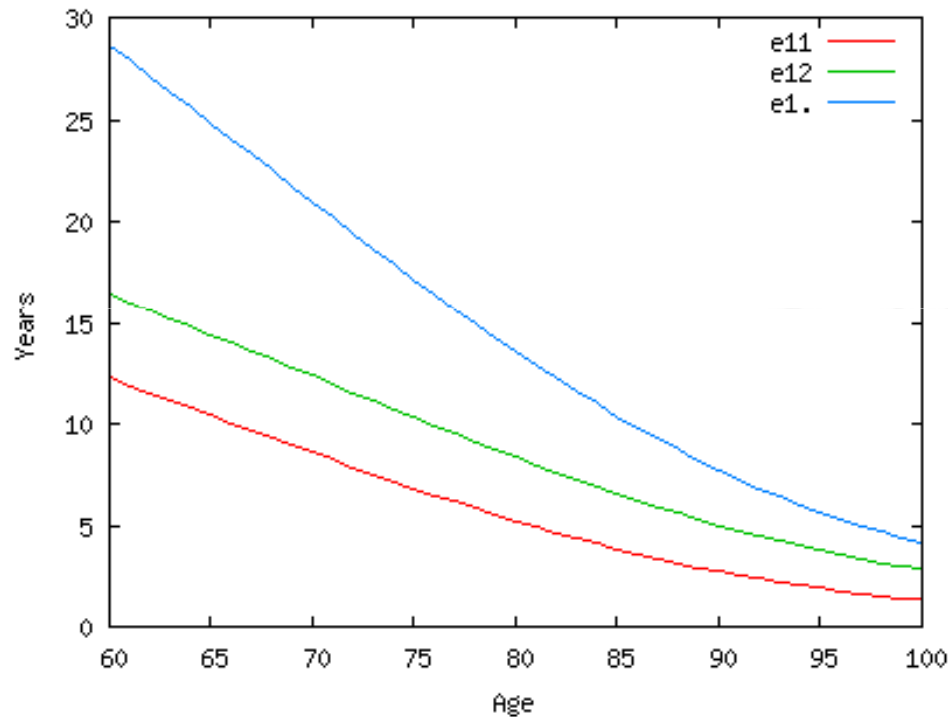




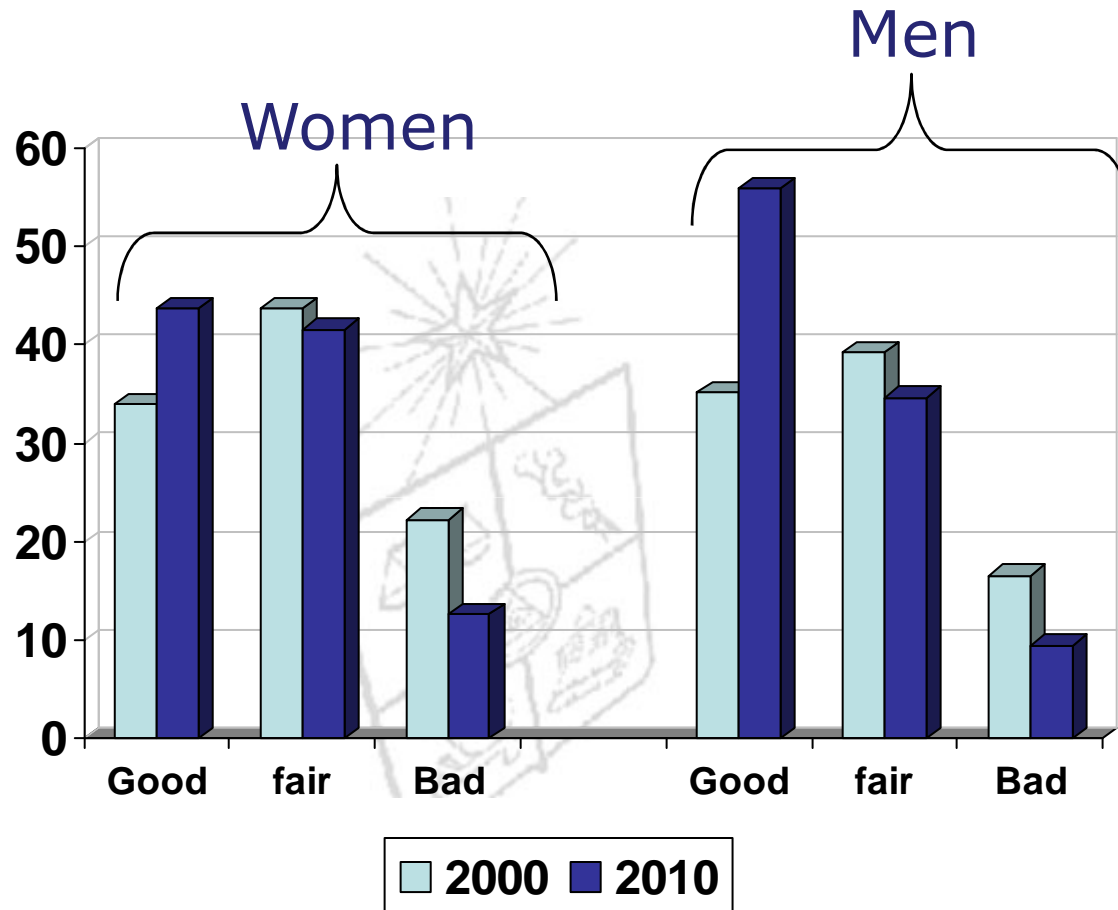
# Total Life Expectancy & Healthy Life Expectancy by years of education

**$\leq 8y$  schooling**

**$> 8y$  schooling**

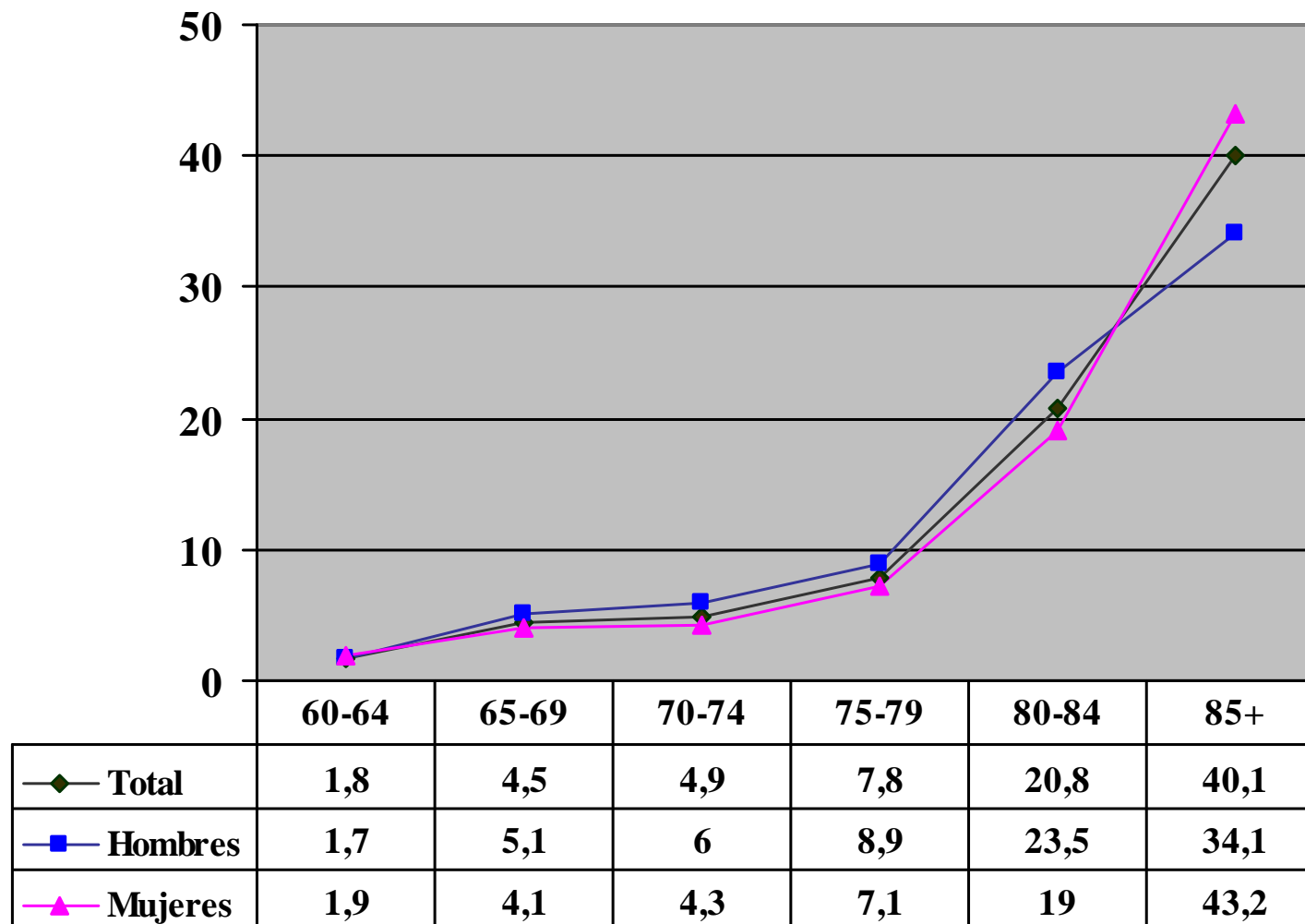


# Selfperception of health 2000-2010

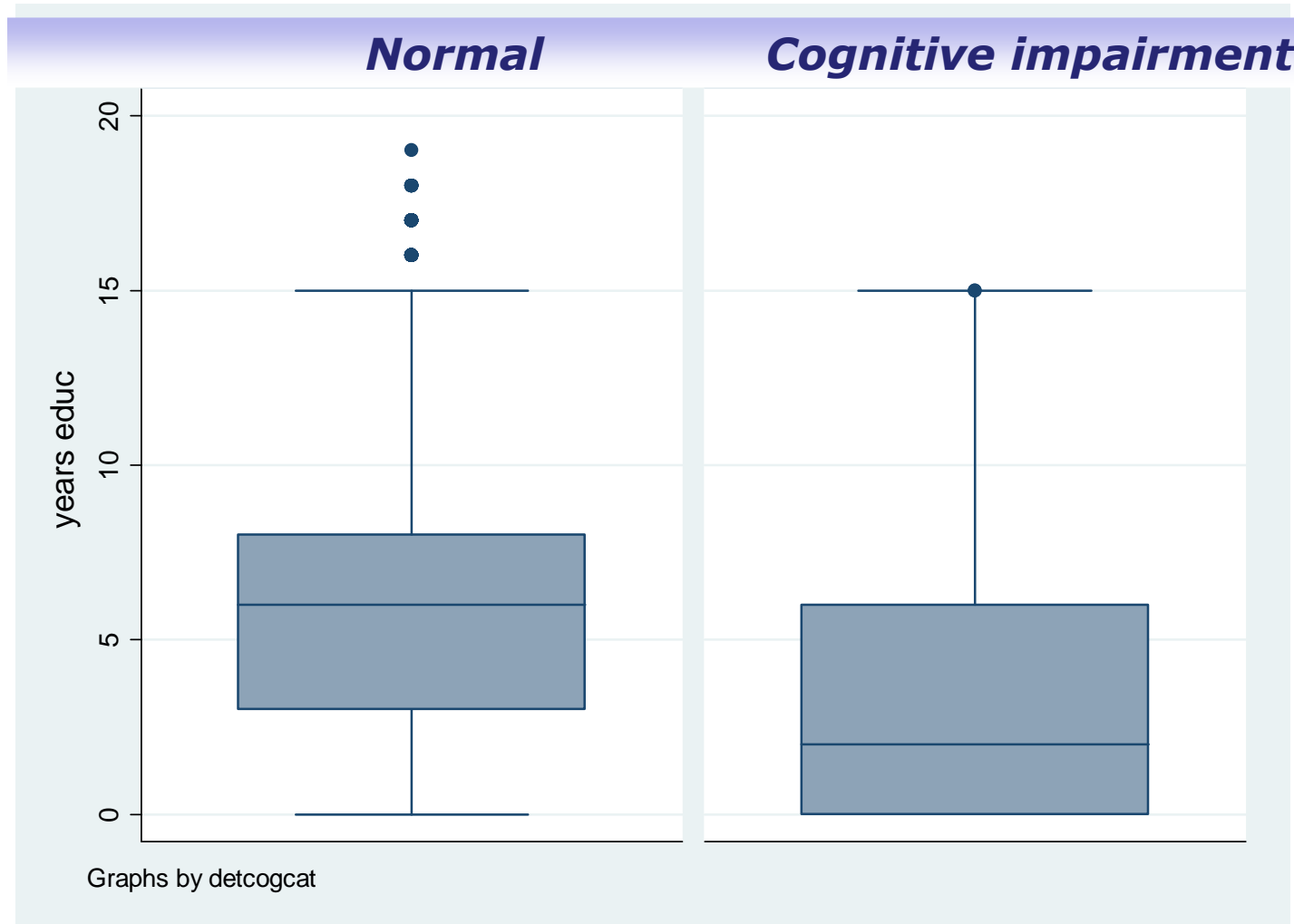


Source 2000 SABE; 2010 ENADEAM

## Prevalence of cognitive impairment by age and gender



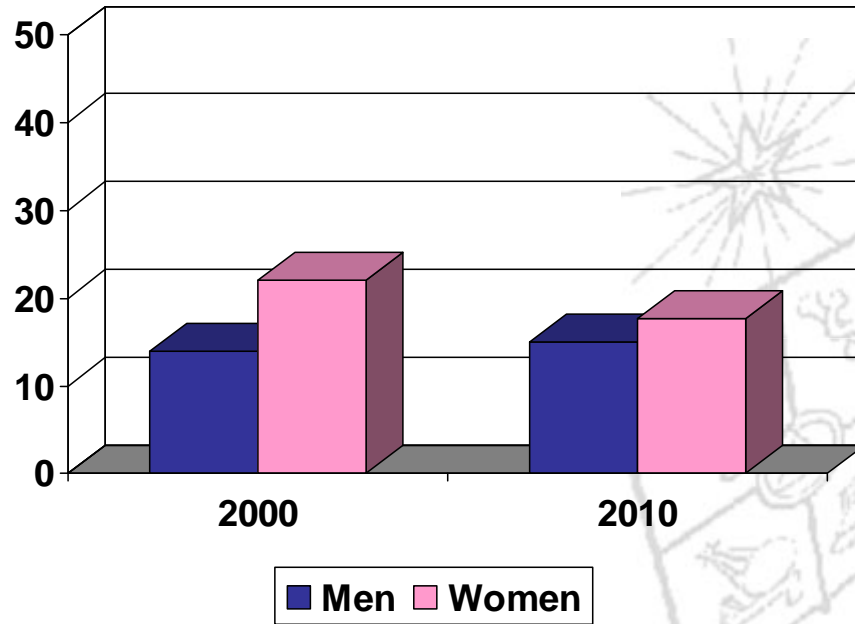
# Cognitive impairment by years of education



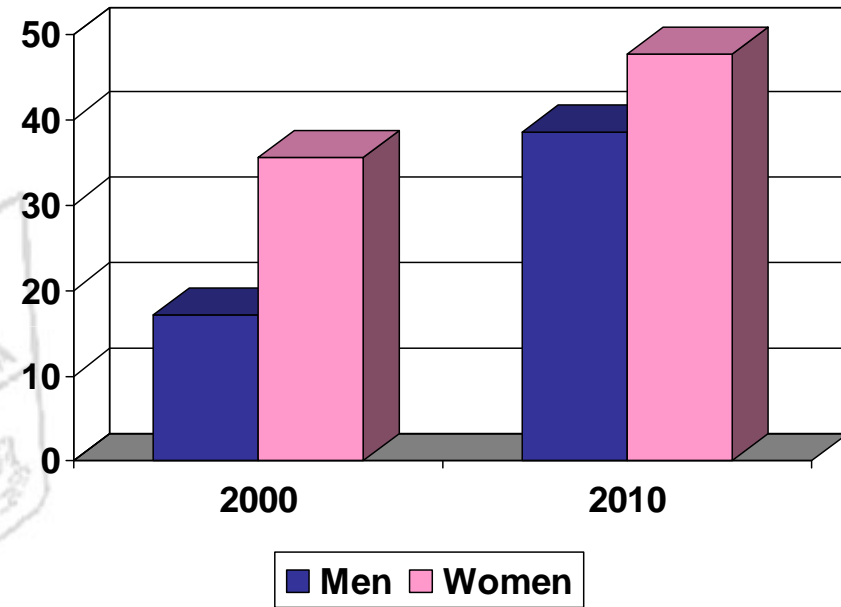
Graphs by detcogcat

# Functional Limitations

## ADL

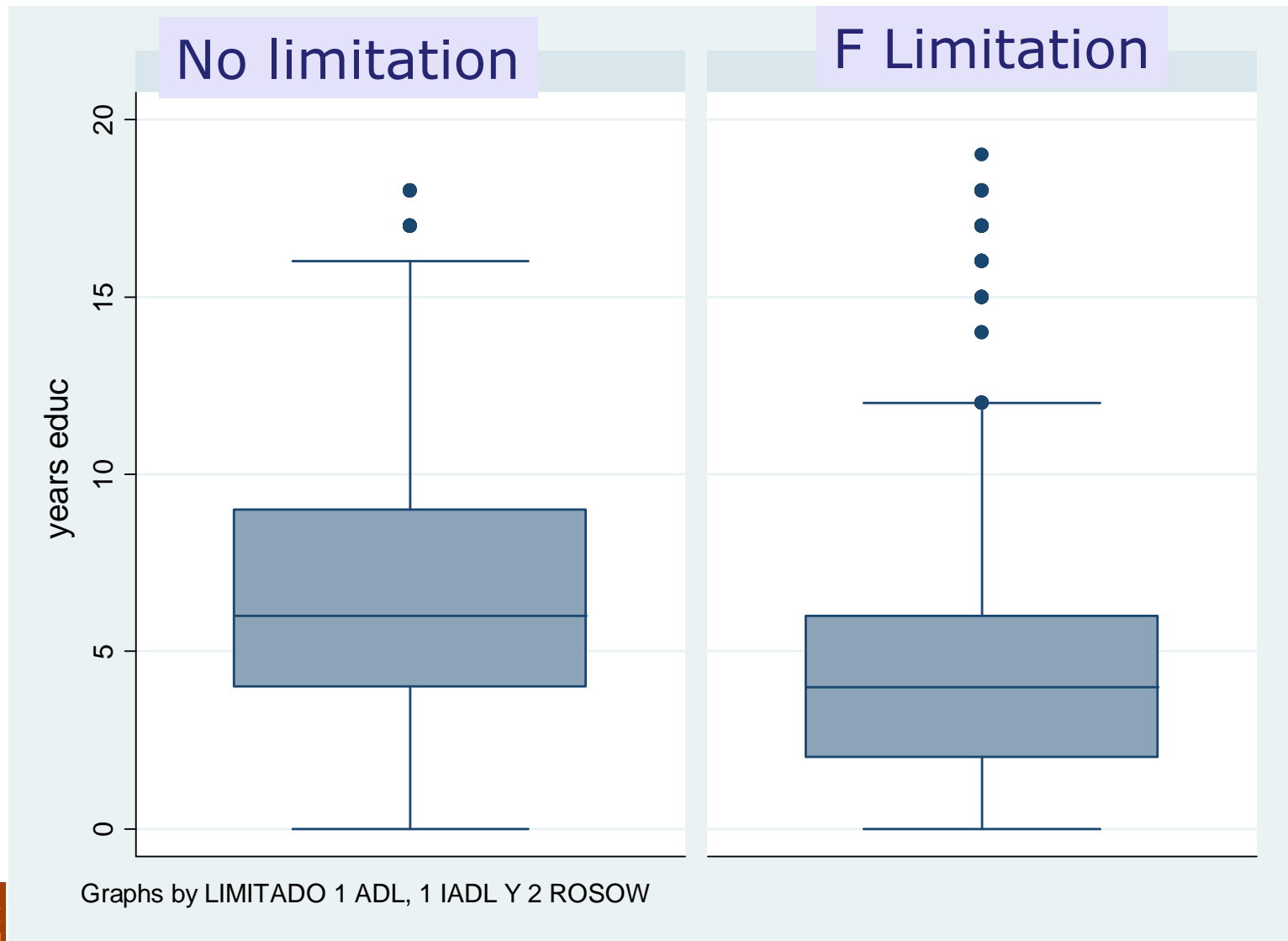


## IADL

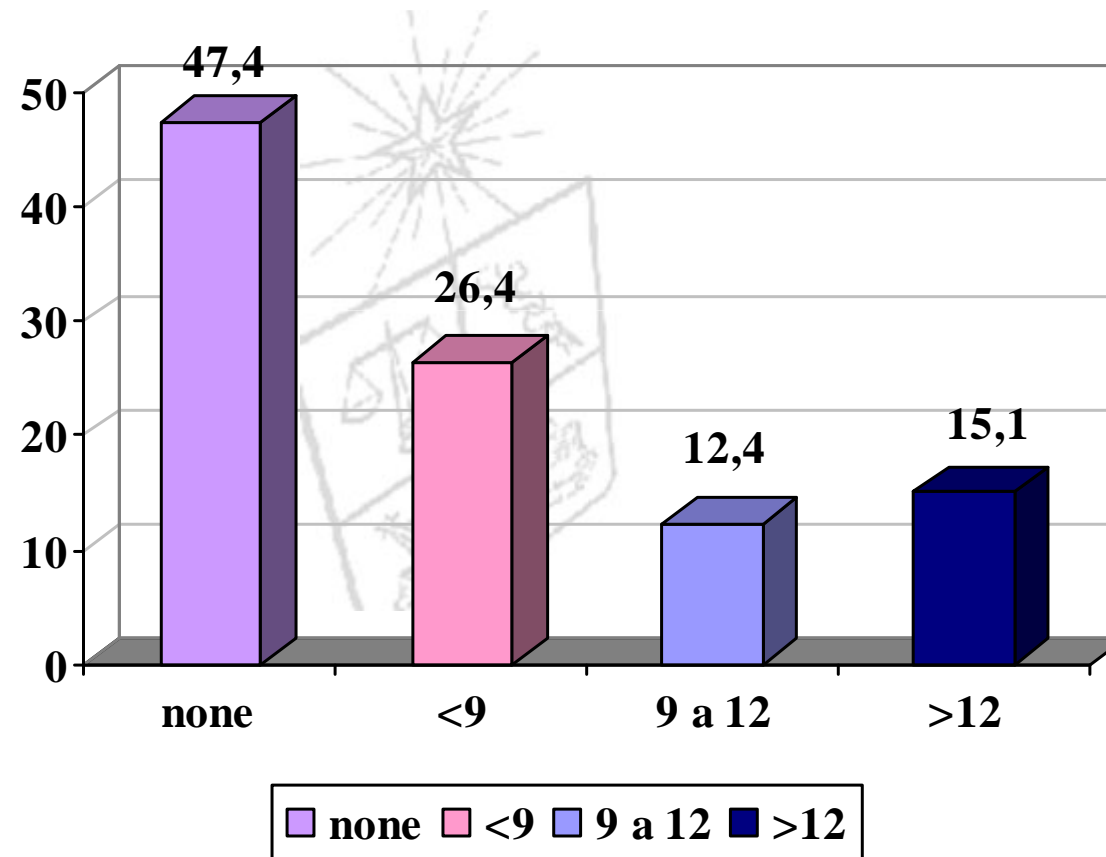


Source: 2000 SABE, 2010 ENADEAM

# Functional limitation by years of education



## *Prevalence of functional dependency by years of education*

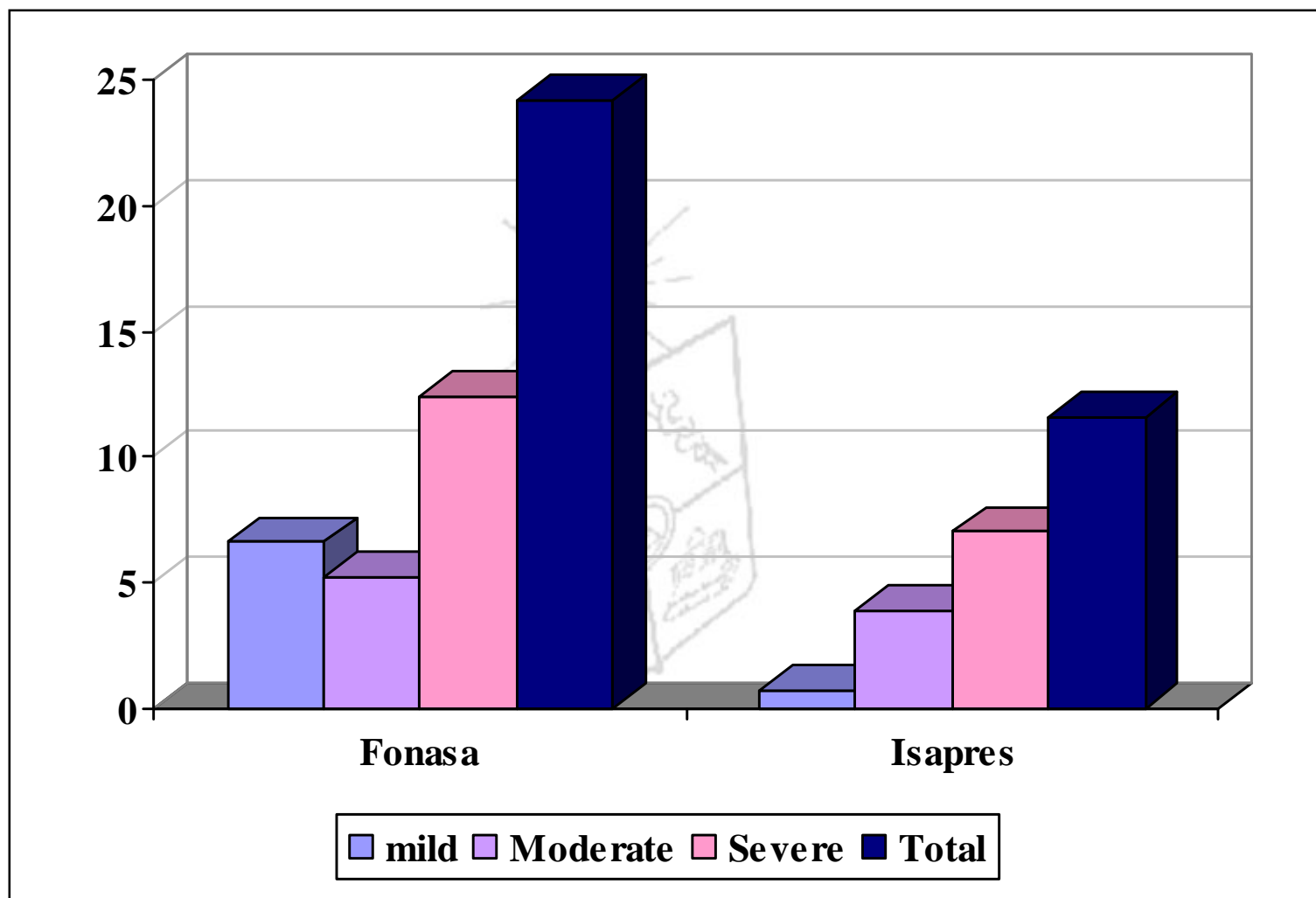


## Association of Dependency with chronic diseases adjusted by age, education and gender.

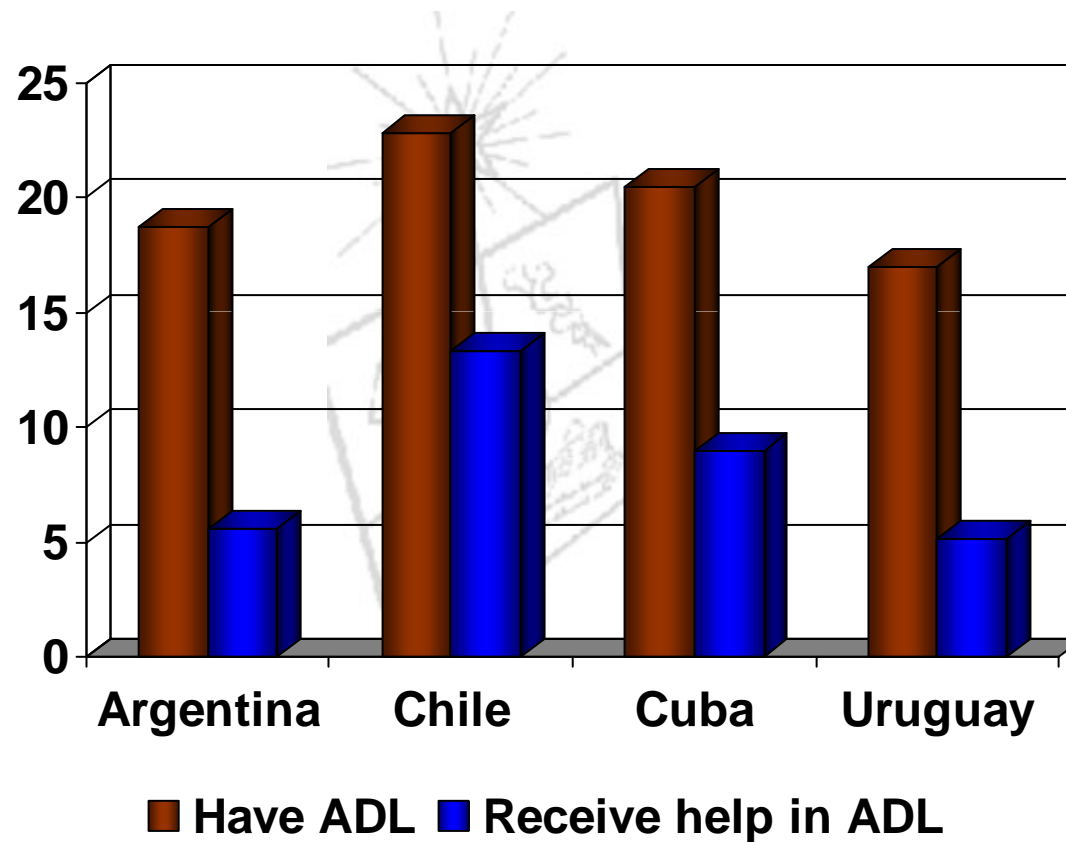
Dependency	OR	95% CI	p
≤8y schooling	0,62	0,475-0,831	0,001
9-12 y schooling	0,38	0,271- 0,527	<0,001
>12 y schooling	0,26	0,135-0,517	<0,001
Hypertension	1,16	0.956 - 1.413	0,131
Diabetes	1,53	1.241 - 1.880	<0,001
Depression	3,43	2.866 - 4.113	<0,001
stroke	1,83	1.448 - 2.311	<0,001
age	1,09	1.077- 1.105	<0,001
gender	0,94	0.785- 1.134	0,535



## Prevalence of dependency by health system



## *Proportion (%) of elders reporting to have & proportion to Receive help in ADL*



## ***Socio- demographic characteristics of care givers***

	Argentina N=198	Chile N=360	Cuba N=489	Uruguay N=208
% female	91.7	83.6	82.4	85.7
Mean age (DS)	51 (13.8)	53.8 (17)		46.1 (14.5)
Kinship				
% Spouse	14.4	13.2	13.6	17.5
% Children	48.2	55.1	56.4	43.5
%Grand children	8.7	6.9	8.0	10.7
%Relatives	4.6	9.6	13.6	9.7
%No relatives	5.1	6.9	6.9	7.9
% Live same home	64.4	77.1	85.2	78.6
% Neighbourhood	22.7	15.5	12.4	15.7
% live same city	12.4	6.6	1.8	

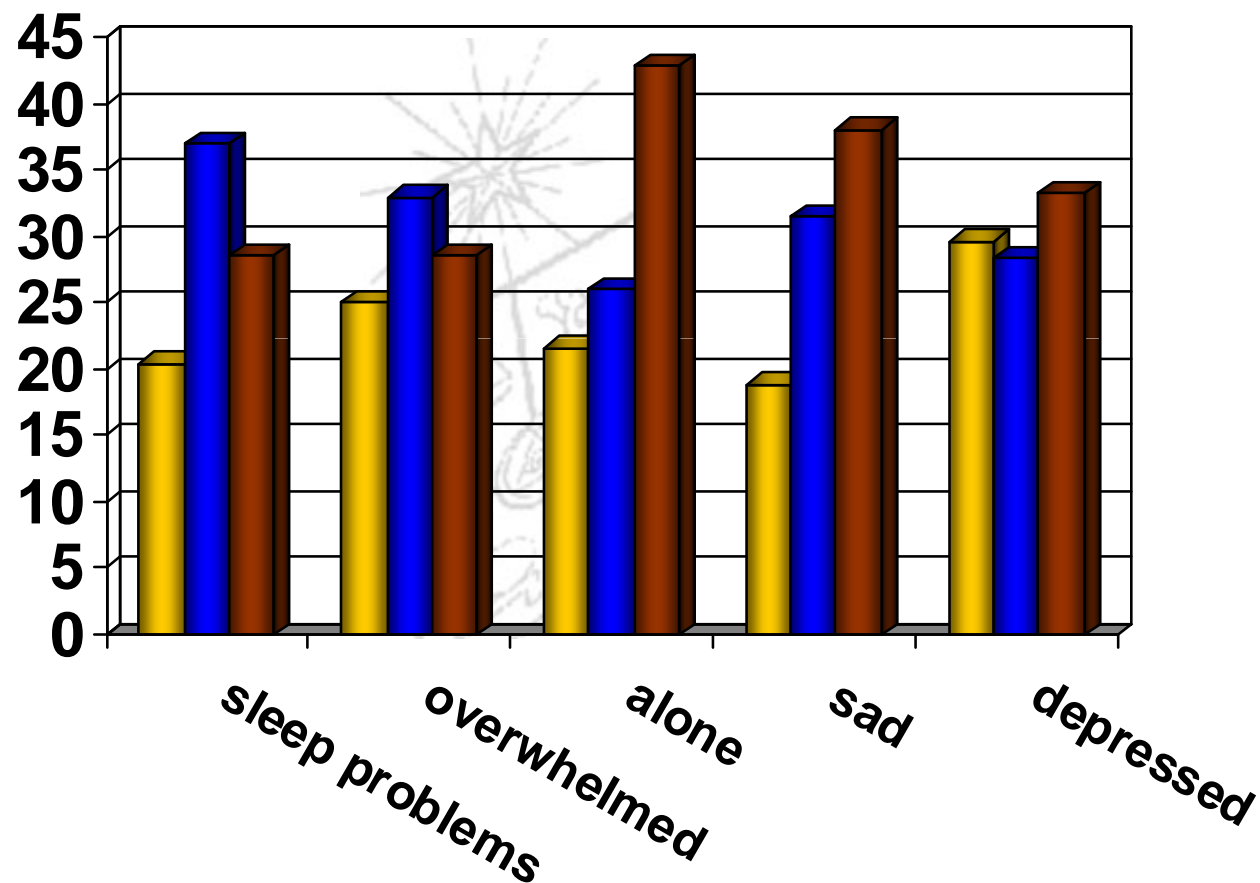
# *characteristics of care giving*

	<b>Argentina N=198</b>	<b>Chile N=360</b>	<b>Cuba N=489</b>	<b>Uruguay N=208</b>
Paid help	19.0	8.3	1.5	10.7
Duration of care				
<1y	15.7	12.0	10.3	19.5
1-2y	23.6	28.0	25.2	27.6
3-4y	12.6	15.2	18.5	13.8
≥5y	48.2	44.8	46.0	39.1
Periodicity of care				
All days	63.4	64.9	88.4	69.5
1-2 days	22.8	20.5	6.7	19.0
3-6	13.8	10.7	4.9	11.5



# *The burden of care-giver*

■ Argentina ■ Chile ■ Uruguay



## Most probably care giver is

- ❖ a women, >50y, the daughter
- ❖ Lives in the same home , has been  $\geq 5$  years as the main care-giver
- ❖ Self-perception of health no good
- ❖ Feel Overwhelmed, depressed, alone
- ❖ Feel that the it's Role is not recognised and complains not receiving help enough.
- ❖ have no money enough to overcome the care-giving





# What can be done?

- ❖ Recognize the role and value of family caregivers
- ❖ Build into primary health care practice regular assessment of caregiver's health and needs
- ❖ Develop experience and evaluate interventions to support family caregivers
- ❖ Review and revise all legislation regarding family caregivers: focus on the 'new demands'
- ❖ Build the capacity for home care services and design programs to meet the needs of the 'older family'



# Summary

- ❖ **The Aging process in Latin America is characterized by unprecedented speed and massiveness**
- ❖ **Aging in LA region is associated with increased health problems and inequities by gender and SES**
- ❖ **Ministries of health in LA face significant potential increased demand for services and health-care budget**
- ❖ **Countries have limited resources to devote to the care of older people in poor health**
- ❖ **Interventions needed to enhance health of older people**





# *What happens in Chile?*



## *Trends in Limitations in ADL in high-income countries*

Years	Place	Population	Sample size	Indicator	Annual change (age adjusted)
1997/98-2005/06	EEUU	60-69	Nat. Health Int. Survey	Unable or restricted in ADL	<b>-0,31%</b> (p value n.s.)
1987-2001	The Netherlands	>55	2708-3474	≥1ADL	Men <b>-4,57%</b> Women <b>-4,29%</b> (p value 0.05)
1993-1999	Spain	>64	1283	≥1ADL	<b>-9,54%</b> (p value 0,05%)
1991/92-2002/03	France	>65	5000	Disability	<b>-5,50%</b> (p value -)
1993-2002	Japan	>66	1786-2391	≥1ADL/IADL	<b>-3,99%</b> (p value 0.00)

Source: Christensen NEJM 2009

*Research suggests that ageing processes are modifiable and that people are living longer without severe disability.*

# ***Social security reform in Chile***

## ***Pensions***

- ❖ **Aimed to securing universal access to pensions for life.**
- ❖ **Changes the pension system from the family to the individual, allowing women to get their own pension instead of depending on husband's pension.**
- ❖ **Creates a maternity bonus for each child, which increases the personal pension funds**

## ***Support for the caregiver***

- ❖ **providing support to homebound older people and their care givers**
- ❖ **This initiative involves the delivery of financial support to families looking after an elderly. Moreover, this ensures the status and quality of care at home by providing support and health technical assistance to caregivers.**



# Health Reform in Chile


## AUGE

- ❖ Explicit guarantees for access and opportunity for good quality treatment of 60 diseases within defined timescale
- ❖ Legally binding guarantees
- ❖ Many diseases impact older people




# *The Health Program for the Older People in Chile*

- ❖ To promote healthy ageing and address the effects of inequalities
  - ❖ Actions
    - ❖ health promotion
    - ❖ disease prevention
    - ❖ curative care
    - ❖ linked to public programs on equity and poverty alleviation
  - ❖ Interventions
- 



The Programme of Complementary Food for the Elderly (PACAM) provides a nutritional supplement to older people since 1998

- ❖ *Distributes Crema Años Dorados and Bebida Lactea to NHS beneficiaries aged 70+ years*
- ❖ *PACAM targets nutritional vulnerability and micronutrient deficiency*
- ❖ Recommended serving size provides 20% of energy and 50% of micronutrient requirements

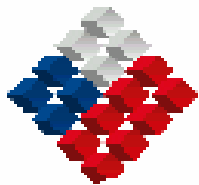


***Cost-effectiveness evaluation of a nutrition supplement and an exercise programme for older people in Chile: the CENEX study [ISRCTN48153354]***

**AIM**

To evaluate the cost-effectiveness of a nutrition supplementation programme and a physical exercise intervention for older people of low to medium socio-economic status living in Santiago

***INTA. University of Chile  
LSHTM  
Ministry of Health***



**welcome**trust

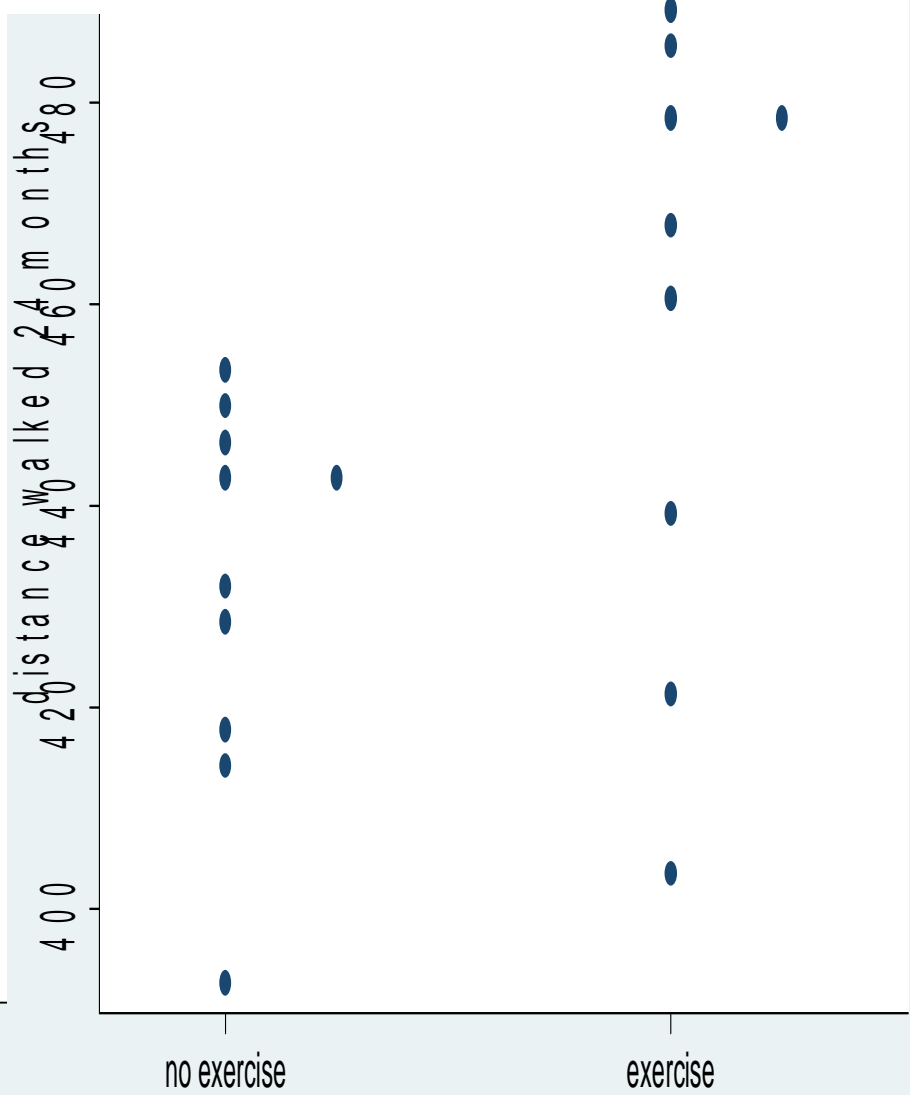
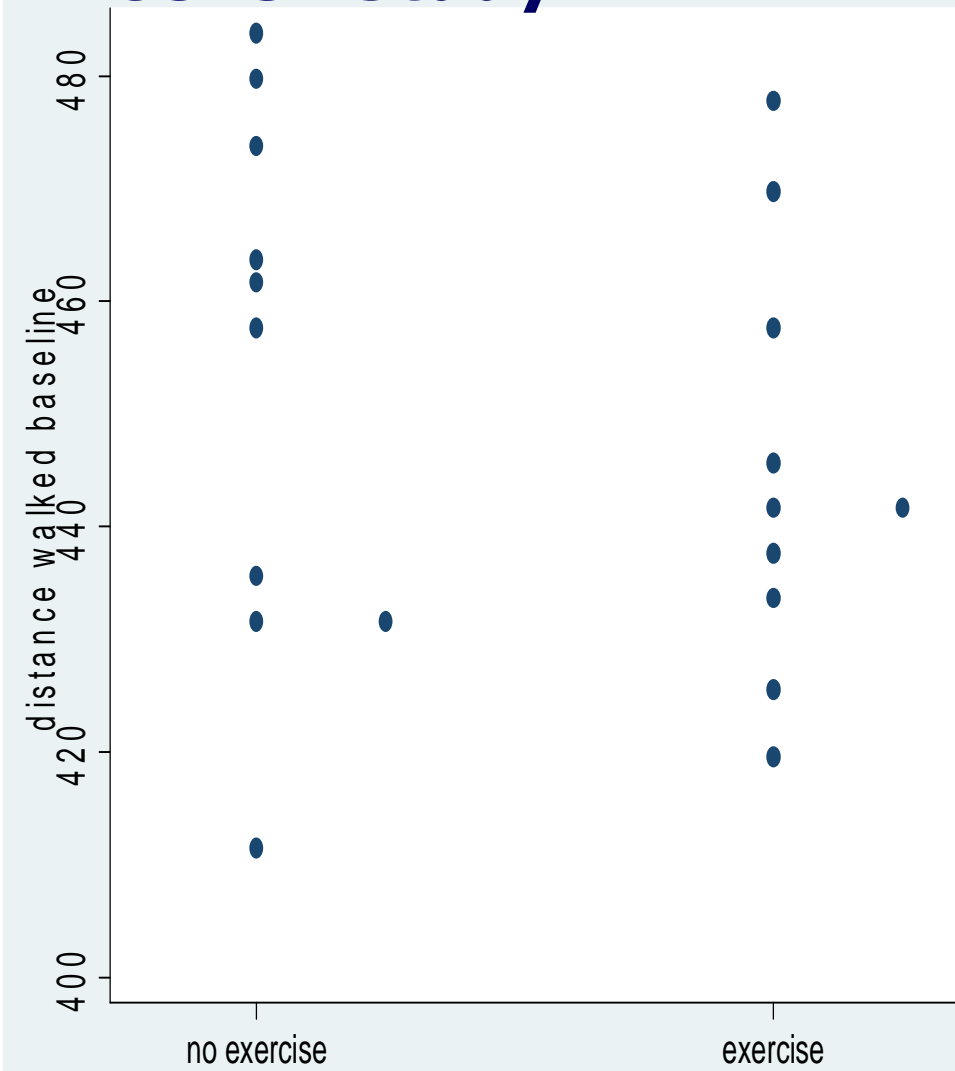


# CENEX study design

- ❖ Cluster factorial RCT over 24 months
- ❖ PACAM vs. exercise vs. both vs. none
- ❖ n=2800 from 28 clusters
- ❖ Aged 65.0-67.9 years at baseline
- ❖ Exercise: community-based, twice-weekly resistance training exercise programme



# Baseline and 24m walking capacity en 10 cluster Cenex Study



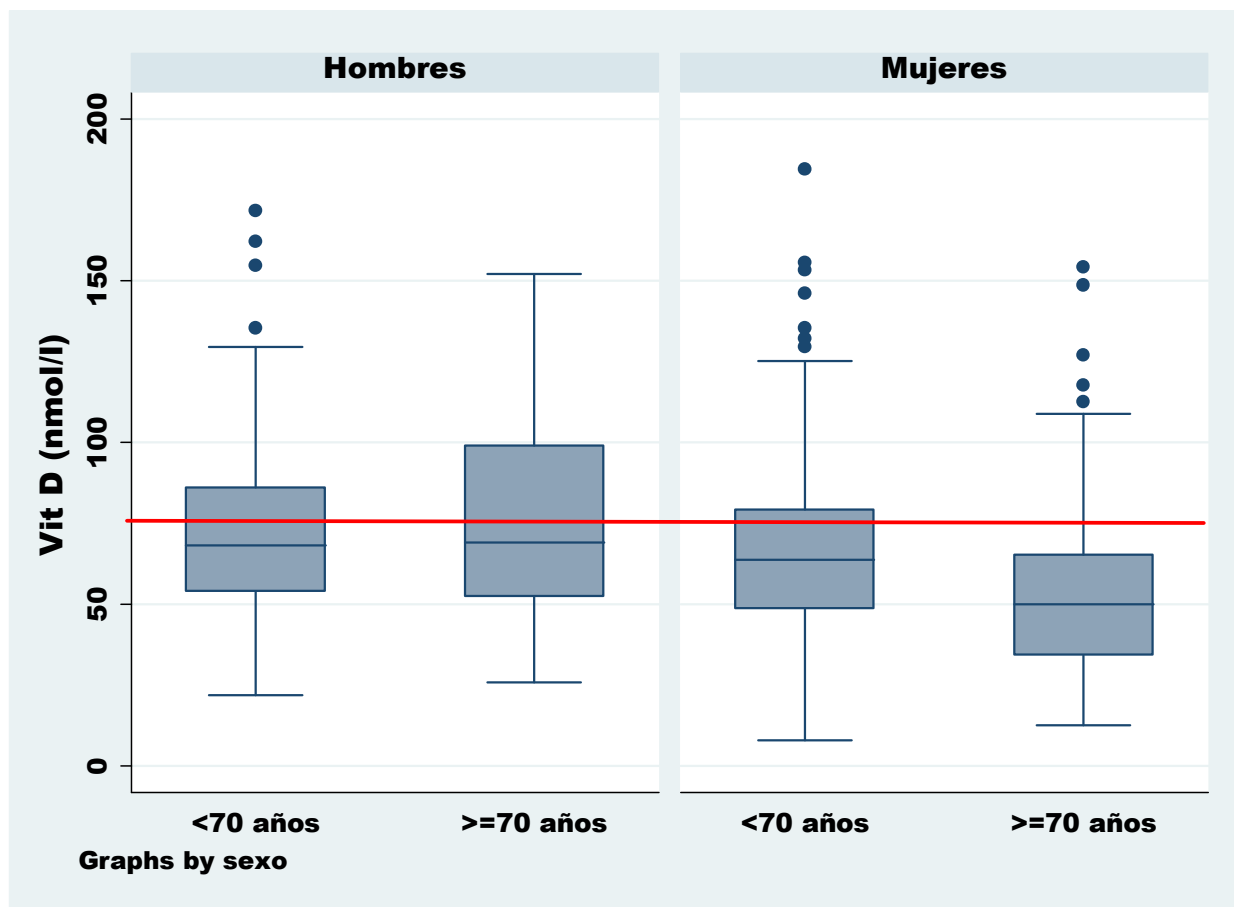
## TUG in control and Physical activity groups

TUG	AF N=786			Control N=746		
	Basal	24 meses	Dif	Basal	24 meses	Dif
≥10 seg	38,55	34,99	-3,56*	43,57	47,45	+3,88*
<10 seg	61,45	65,01		56,43	52,55	

$P < 0.05$

# Plasma Vit D by gender and age

**Trevalence of Deficit Vit D (<75nmol/L)  
60,6% men 71,5% women**



## Effectiveness of PACAM for vit D deficiency

	<b>PACAM</b>	<b>Physical Activity</b>	<b>PACAM+PA*</b>	<b>Control</b>
<b>Basal Median (IQR)</b>	<b>73,5 (55,7-91,6)</b>	<b>64,6 (51,1-77,5)</b>	<b>67,0 (53,6-79,9)</b>	<b>62,5 (50,4-78,1)</b>
<b>24 months</b>	<b>63,2 (46,2-82,4)</b>	<b>60,4 (44,0-81,8)</b>	<b>71,1 (52,7-97,3)</b>	<b>56,3 (36,5-70,6)</b>
<b>difference</b>	<b>-15,5 (28,3-3,7)</b>	<b>-1,8 (19,5-23,8)</b>	<b>6,6 (12,2-27,3)</b>	<b>-9,5 (24,4-6,6)</b>

\*p<0,05

Ref Estudio CENEX



# ***CONCLUSION***

The process of population ageing in developing countries has important economic and social consequences.

These societies are getting older faster than developed nations, but in a context of poverty, unequal economic distribution and gender inequity.

Health problems associated with ageing involve important class and gender differentials

To face these challenges, timely and integral social policies of pensions, housing and health care are required.