

SUNFRAIL - Reference Sites
Network for Prevention and Care
of Frailty and Chronic Conditions
in community dwelling persons
of EU Countries"



Centro Nazionale di Epidemiologia,
Sorveglianza e Promozione della Salute

Understanding and Detecting Pre-frailty - The Passi Argento (Silver Steps)

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Background information about Silver Steps (PDA)

PDA in the contest of the Italian population surveillance

- ✿ coordinated by the Italian National Institute of Health and supported by the Centre for Disease Control (CCM) of the Ministry of Health
- ✿ collaboration with the regional health authorities and their local health units (LHU 146)
- ✿ the 20 Italian regions comprise from 1 to 22 LHUs (total population ranges from 40,000 up to more than 1 million)
- ✿ federal (theoretically) approach to the population health objectives: at government level equal Essential Levels of Care (ELC) are established for all Italian citizens, then Regions are autonomous to achieve them according to (sometimes) very different regional health systems



PDA: the surveillance system



Almost 13 million over64 in 20 regions



- **24.129** interviews in **18** Regions and in the PA of Trento
- Of which **16** have a regional representativeness of the over64 population conditions while **3** (Friuli Venezia Giulia, Marche e Lombardia) **only for the LHU level**
- Totally, **116** (out of 146) **LHU participated** and **37** also with a representative sample for the LHU level
- More than **1.000** personnel belonging to the RHS but also from the welfare system, NGO and Universities, collected, analyzed and communicated the data and the information





Areas covered by PDA

Over64 health aspects covered by PDA

1. Wellbeing and independent living

- IADL, ADL
- QoL
- Unhealthy days
- Life satisfaction

3. Participation

- Lifelong learning
- Employment
- Social activities
- Being a “resource”





2. Risk factors, health conditions, care

- “Lifestyles”
- hypertension and NCD
- depression symptoms
- social isolation index
- access to health care
- use of medicines
- help for daily living
- influenza immunization
- heat wave protection

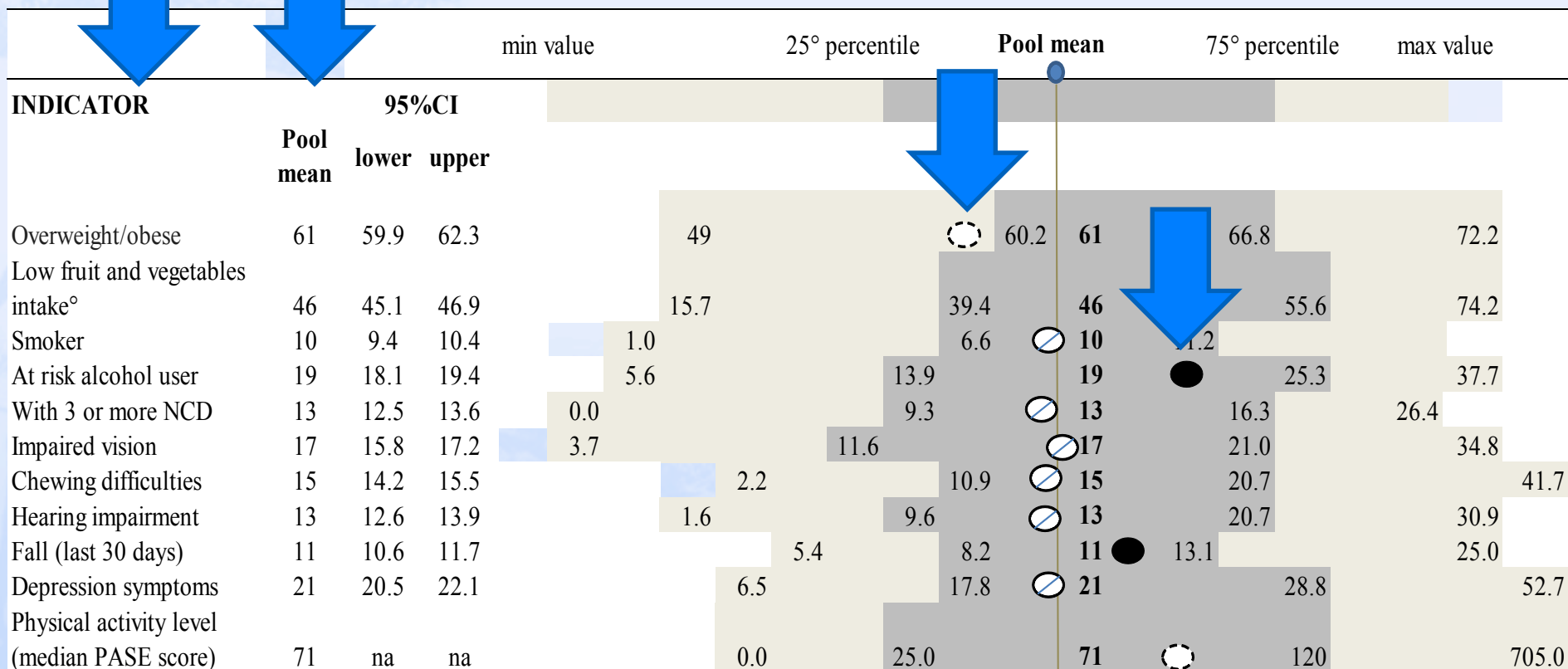
4. Living environment

- access to services
- housing conditions
- borough safety

PDA areas similar to the Active Ageing Index's

 Employment	 Participation in Society	 Independent, Healthy and Secure Living	 Capacity and Enabling Environment for Active Ageing
Employment Rate 55-59	Voluntary activities	Physical exercise	Remaining life expectancy at age 55
Employment Rate 60-64	Care to children and grandchildren	Access to health services	Share of healthy life expectancy at age 55
Employment Rate 65-69	Care to older adults	Independent living	Mental well-being
Employment Rate 70-74	Political participation	Financial security (three indicators)	Use of ICT
		Physical safety	Social connectedness
		Lifelong learning	Educational attainment
Actual experiences of active ageing		Capacity to actively age	

Comparing LHU and regions

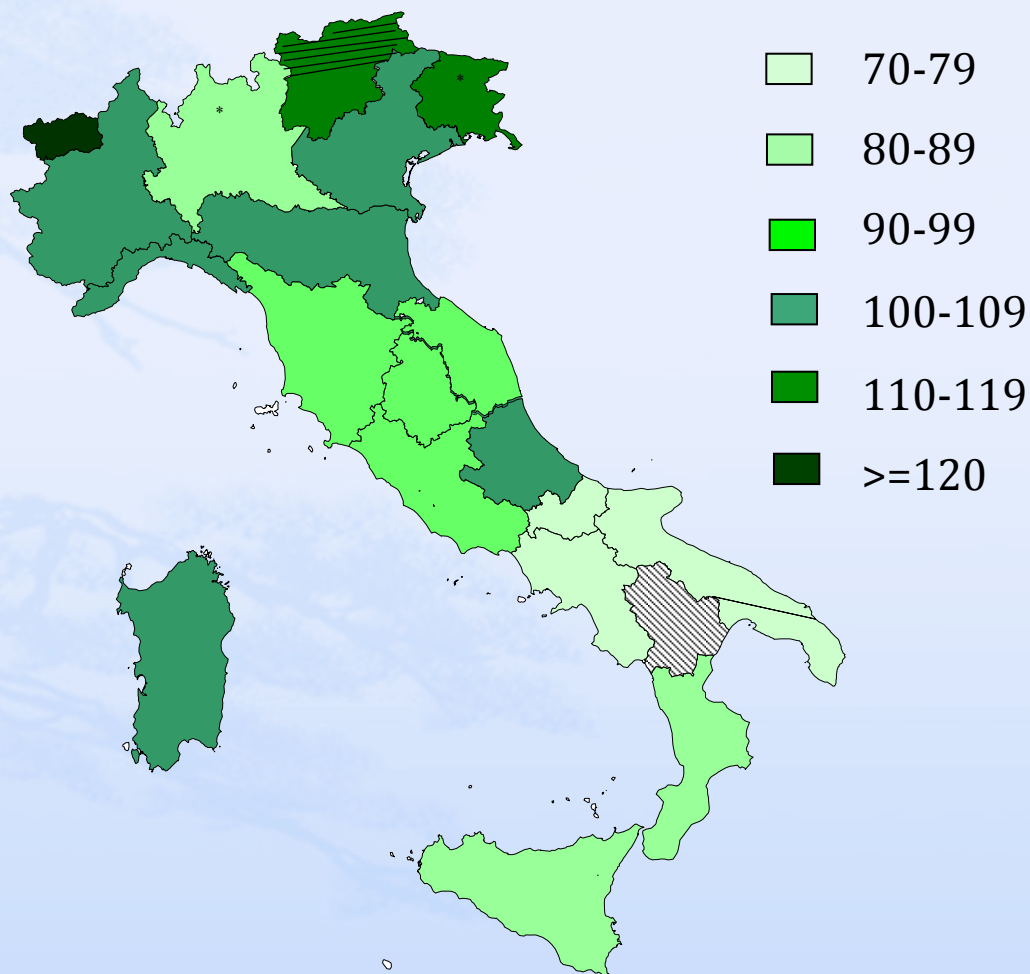


○ Value not significantly different from the pool mean

● Value significantly worse than the pool mean

○ Value significantly better than the pool mean

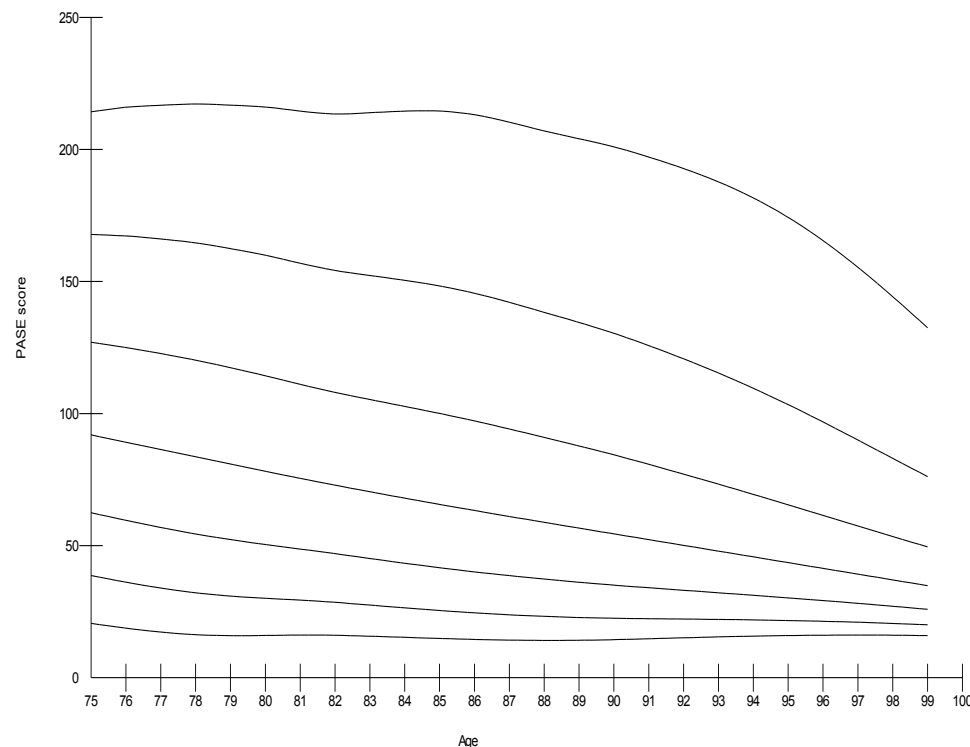
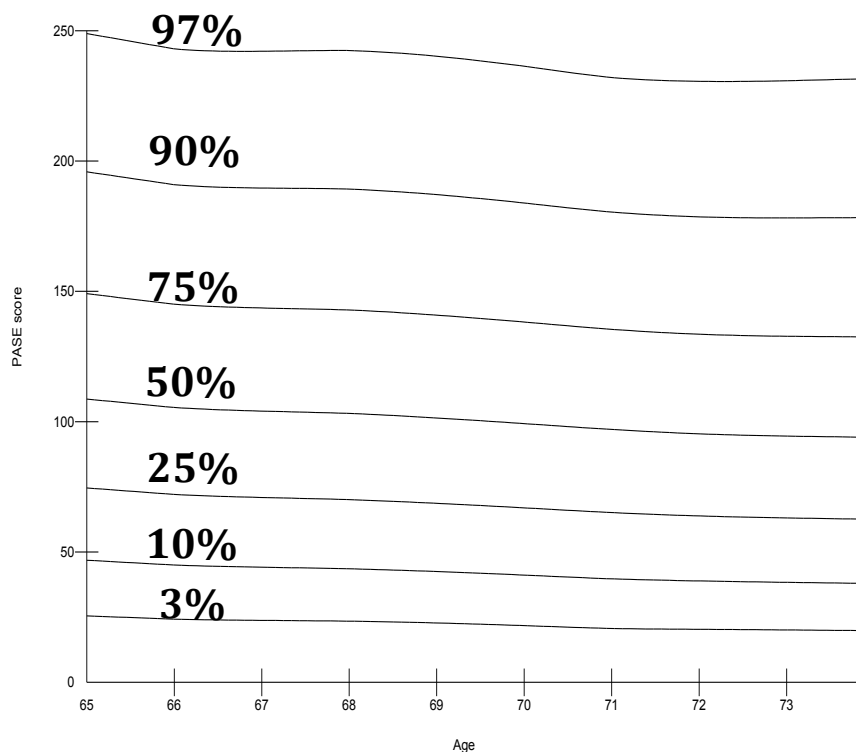
Standardized PASE score, by age and gender (n=16,704)



Percentiles of physical activity (PASE score, by age and gender)

65-74 years

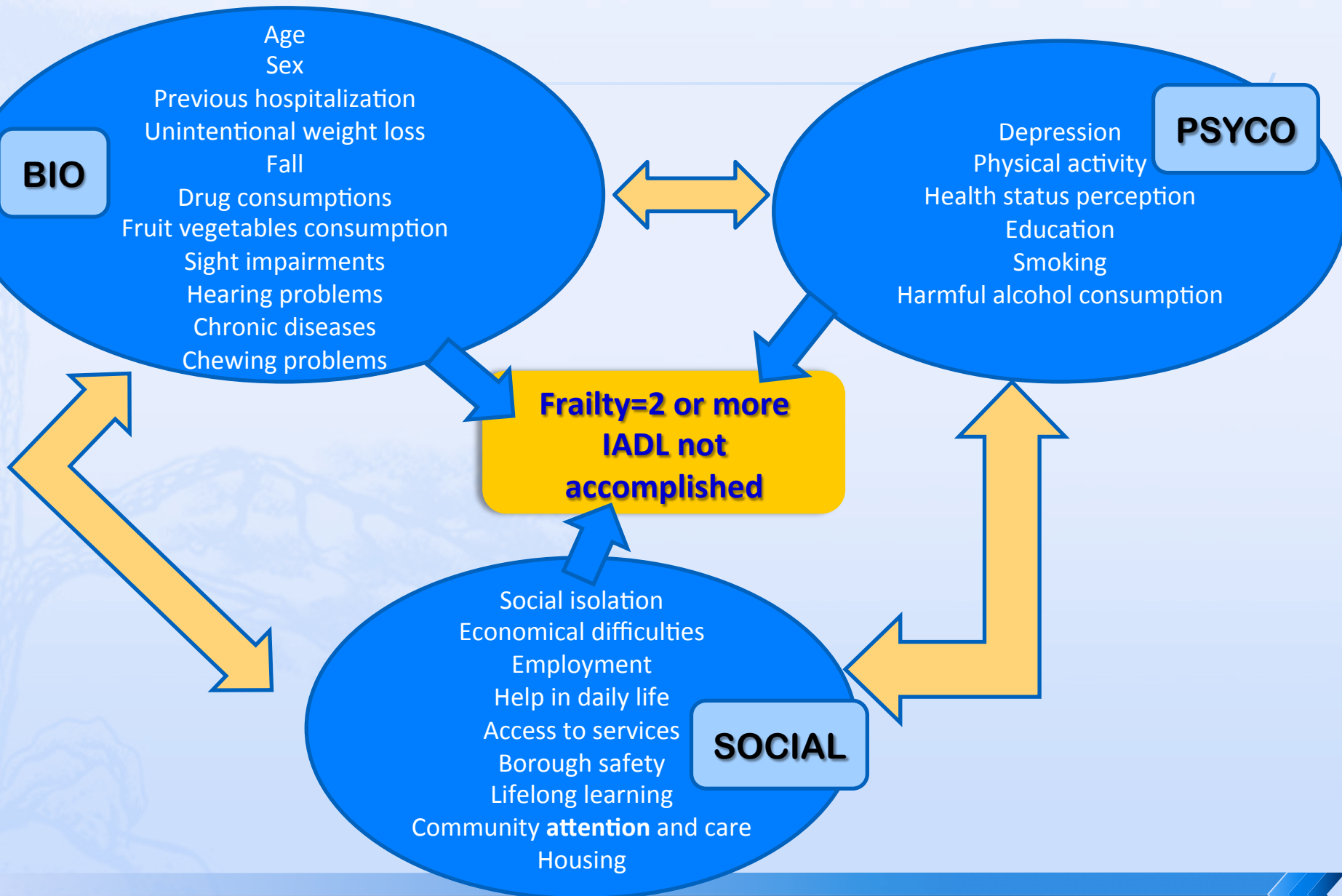
75 and more



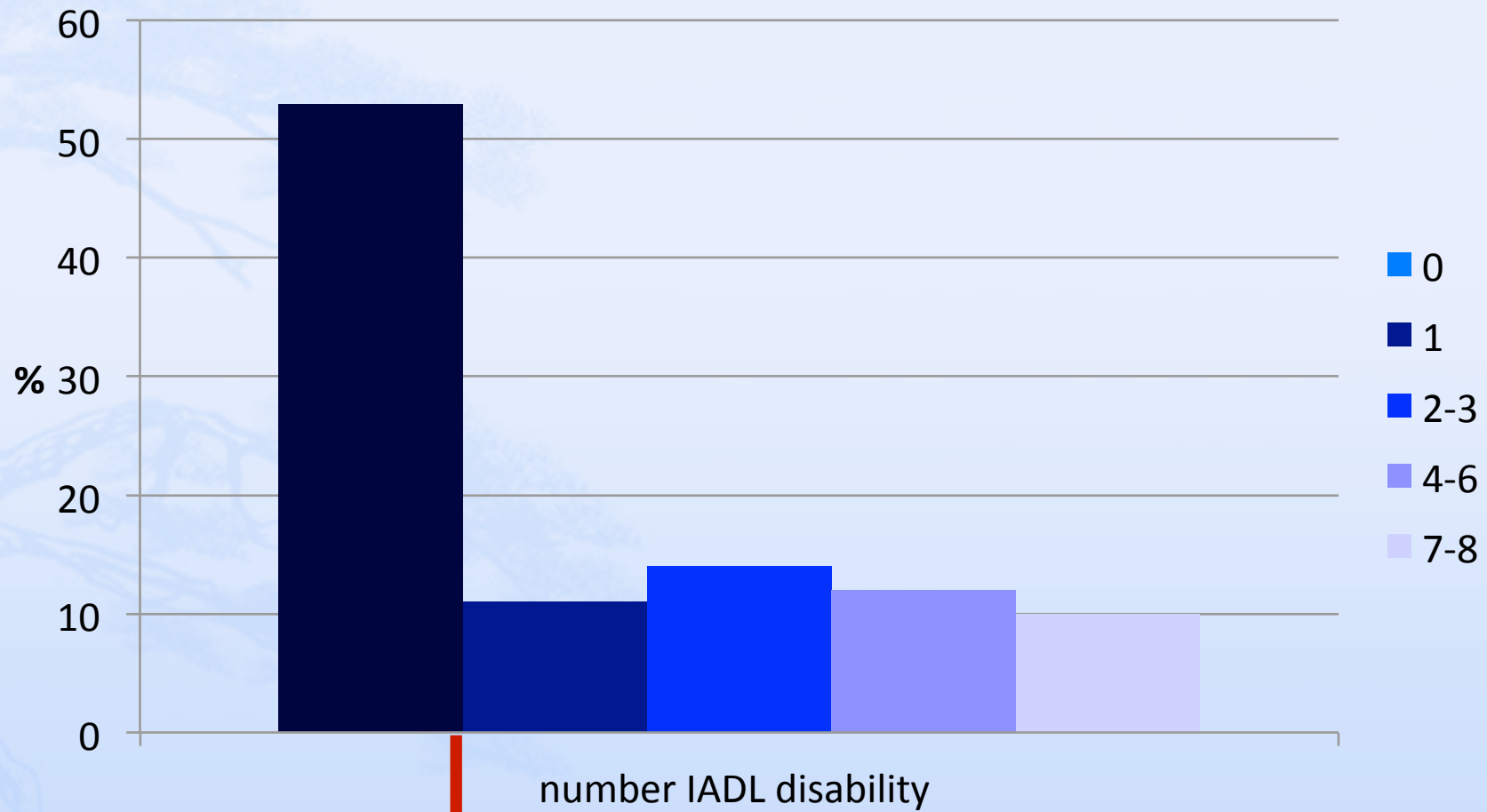


One possible hypothesis on frailty with the PDA data

A Bio-Psyco-Social framework for Frailty

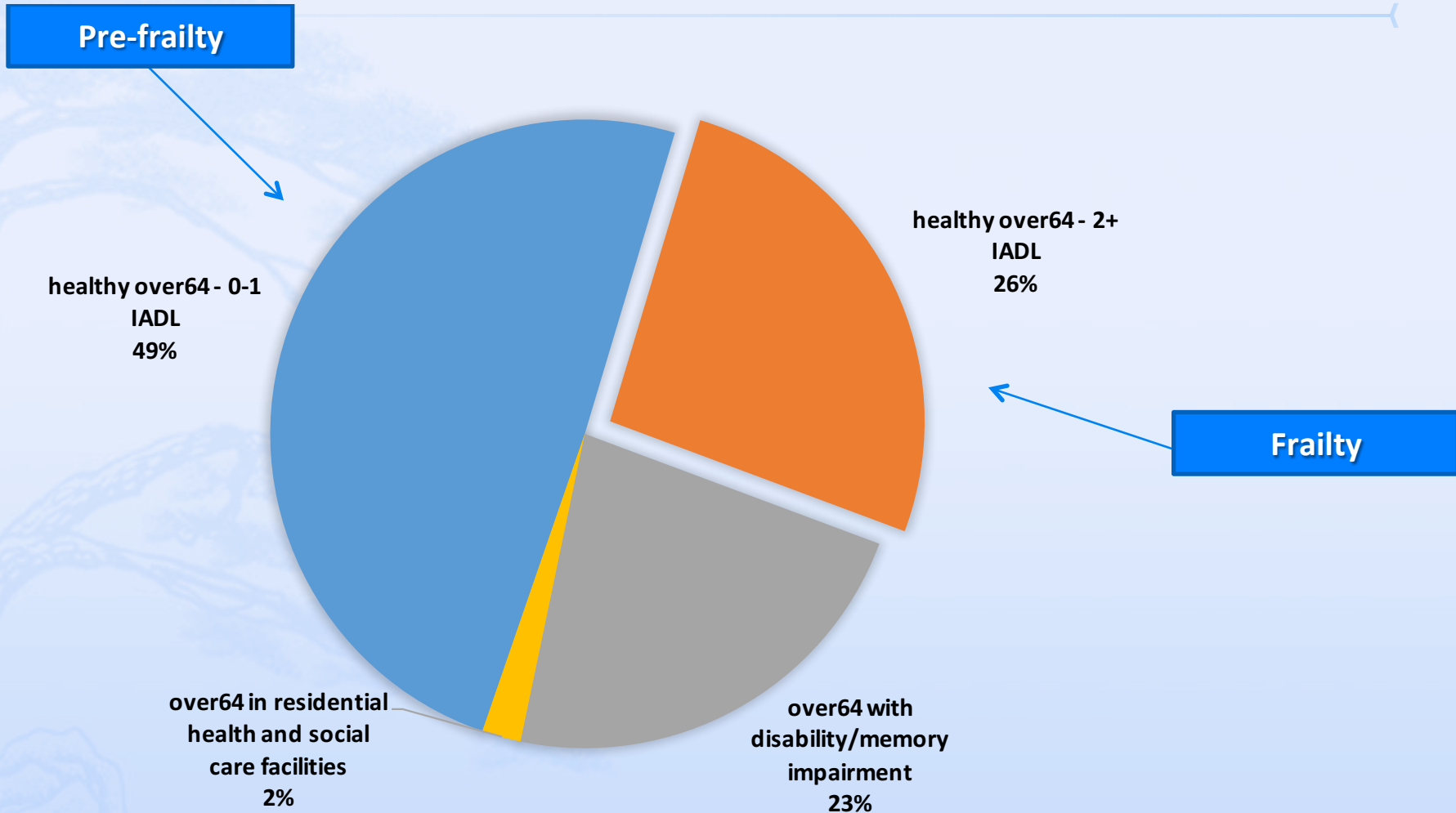


IADL: outcome of the bio-psyco-social approach to ageing

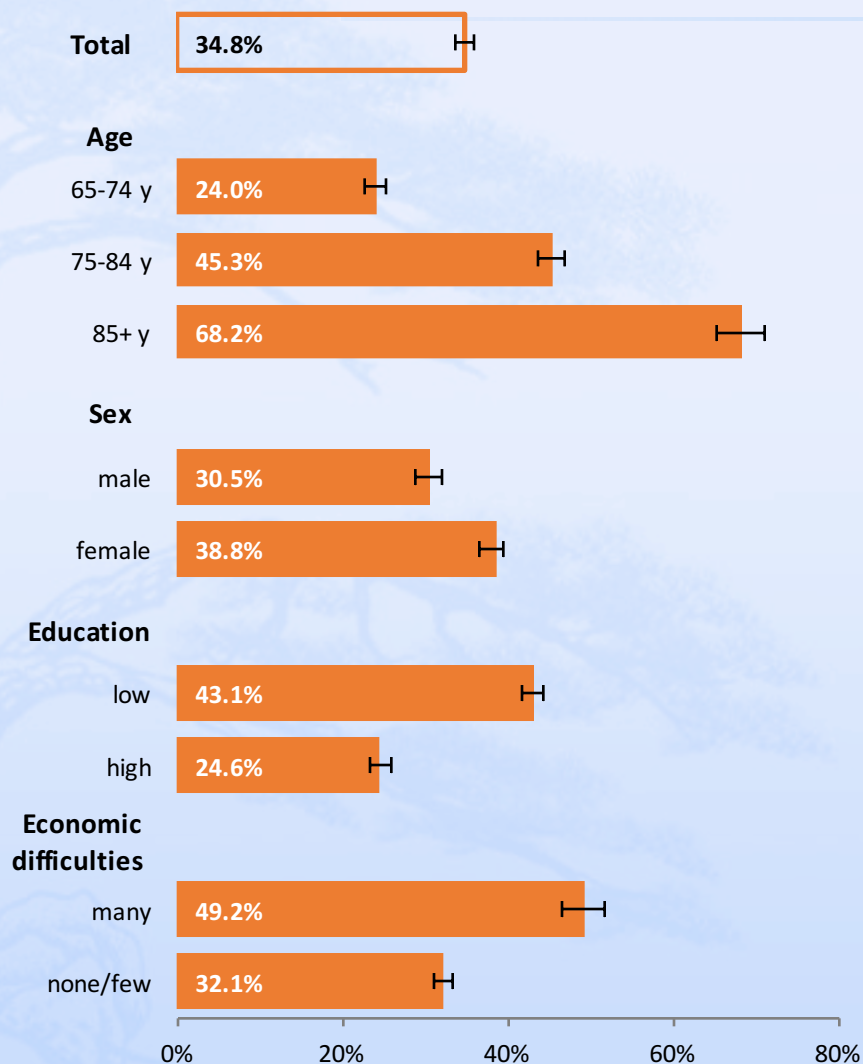


(1 or no disability in IADL) **Pre-frailty** ← → **Frailty** (2 or more disabilities in IADL)

Distribution of over64 population

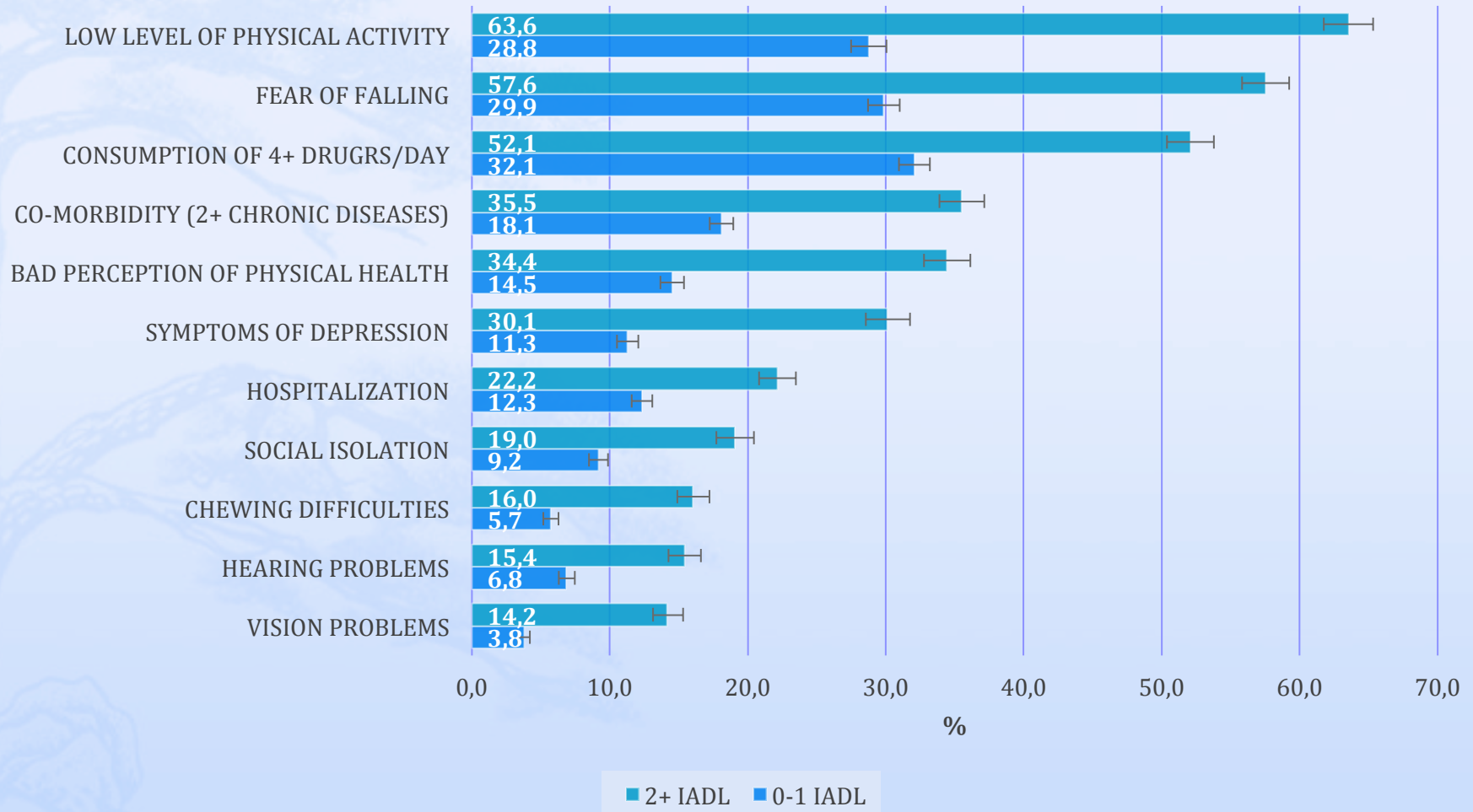


Prevalence of frails (2+ IADL) by socio-demographic variables (n=17,906)



The percentages were calculated excluding from the analysis elderly with disabilities, memory impairment or living in residential and social care facilities

Are frails (2+ IADL) and pre-frails (0-1 IADL) different?



Predictors for frailty (2 or more IADL) (n=13,105)

		Adj OR ^a	95% CI		p-value
Age	65-74 y	1			
	75-84 y	1.87	1.71	2.05	<0.001
	85+ y	3.58	3.06	4.18	<0.001
Low level of physical activity ^b	no	1			
	yes	3.27	3.00	3.56	<0.001
Fear of falling	no	1			
	yes	1.77	1.62	1.93	<0.001
Vision problems	no	1			
	yes	1.76	1.50	2.07	<0.001
Educational level	high	1			
	low	1.74	1.59	1.91	<0.001
Chewing difficulties	no	1			
	yes	1.68	1.45	1.95	<0.001
Symptoms of depression	no	1			
	yes	1.50	1.32	1.69	<0.001
Bad perception of physical health	no	1			
	yes	1.42	1.27	1.59	<0.001
Daily drugs uptake	less than 4 drugs	1			
	4 or more drugs	1.37	1.25	1.50	<0.001
Hearing problems	no	1			
	yes	1.33	1.15	1.53	<0.001
Social isolation ^c	no	1			
	yes	1.32	1.16	1.51	<0.001
Co-morbidity (2+ chronic diseases) ^d	no	1			
	yes	1.27	1.15	1.40	<0.001
Hospitalization	no	1			
	yes	1.25	1.12	1.41	<0.001

Predictors for frailty, disability for 2 or more IADL by age groups

65-74 years (n=7,438)		75-84 years (n=4,704)		85+ years (n=963)	
	Adj Odds Ratios		Adj Odds Ratios		Adj Odds Ratios
Low level of physical activity	3.25	Low level of physical activity	3.22	Low level of physical activity	4.07
Vision problems	2.29	Fear of falling	1.75	Chewing difficulties	1.84
Fear of falling	1.85	Low educational level	1.74	F vs M	1.84
Low educational level	1.75	Chewing difficulties	1.66	Low educational level	1.75
Symptoms of depression	1.74	Bad perception of physical health	1.56	Symptoms of depression	1.66
Chewing difficulties	1.72	Vision problems	1.53	Hearing problems	1.63
Bad perception of physical health	1.43	Co-morbidity (2+ chronic diseases)	1.37	Fear of falling	1.56
Social isolation	1.39	Hearing problems	1.35	Consumption of 4+ drugs/day	1.42
Consumption of 4+ drugs/day	1.39	Consumption of 4+ drugs/day	1.35		
M vs F	1.35	Social isolation	1.33		
Co-morbidity (2+ chronic diseases)	1.26	Hospitalization	1.27		
Hearing problems	1.22	F vs M	1.28		
Hospitalization	1.20	Symptoms of depression	1.25		

The logistic regression models above were built through the stepwise selection method (backward-selection, significance level of 0.1). In each model the odds ratios were adjusted by all the variables visible in the corresponding columns. All the odds ratios resulted statistically significant ($p < 0.05$).

Final considerations: challenges for frailty/pre-frailty definitions

- ✿ Set up on bio-psyco-social features
- ✿ Mainly focusing on function (and not on age)
- ✿ Pre-frailty and frailty: progressive conditions
- ✿ Difficult defining pre-frailty if frailty is not well defined
- ✿ Useful for LHU operational definition of pre-frailty and/or a risk profile for frailty
- ✿ Data need to be collected by phone interviews
- ✿ Action oriented: useful for loco regional health systems and several community settings
- ✿ System friendly: elderly, his/her family, elderly social centers, home visitors, social and health professionals, specialized health professionals
- ✿ Internal consistency
- ✿ A “good” level of sensitivity and specificity in order to ensure both efficiency and ethical approach

Thank you for the attention!

