

Social isolation, loneliness and multimorbidity in Portuguese older adults: findings from the EPIPorto cohort

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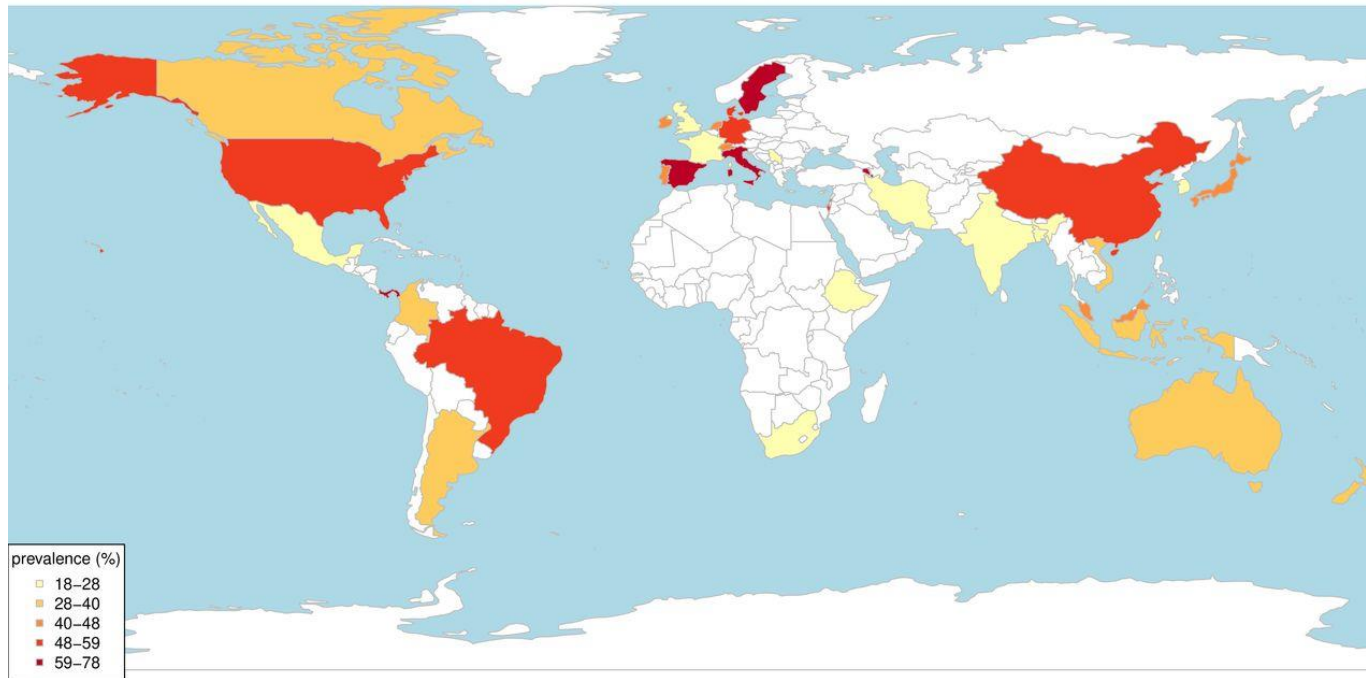
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Background

By 2050, population aged ≥ 60 and over will nearly double (2.1 billion) → rise in chronic conditions



Global prevalence of multimorbidity across different countries (3)

Increased prevalence of multimorbidity:
 ≥ 2 chronic conditions

Global prevalence on adults aged ≥ 60
years: 51%

High heterogeneity in multimorbidity
measurement

- How many conditions?
- What type of conditions?
- (...)

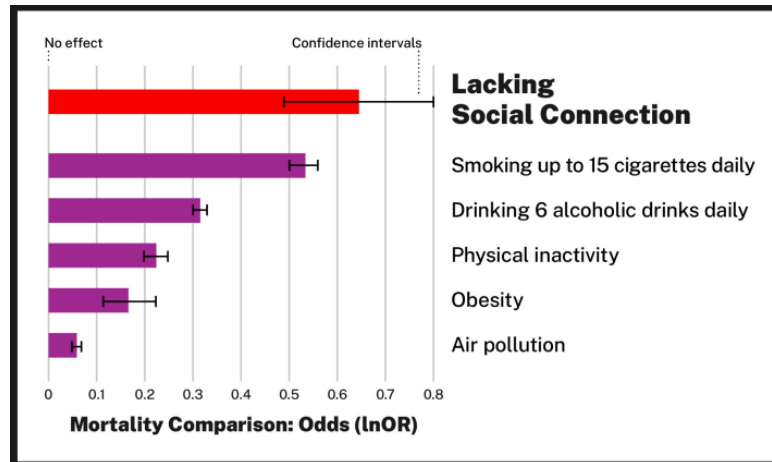
Background

The World Health Organization recognizes **social isolation and loneliness** as determinants of health

Social Isolation: The objective absence of social contact with other people or with society.



Loneliness: It refers to the feeling that the individual's social network is smaller or of inferior quality than what he would like, independently on the number of people part of their life.



5. World Health Organization. (n.d.). Social isolation and loneliness. WHO

6. Coyle CE, Dugan E. Social isolation, loneliness and health among older adults. J Aging Health. 2012;24:1346–63 (<http://dx.doi.org/doi:10.1177/0898264312460275>).

7. United States. Public Health Service. Office of the Surgeon General. (2023, May). Our Epidemic of Loneliness and Isolation: The U.S. Surgeon General's Advisory on the Healing Effects of Social Connection and Community. Department of Health and Human Services, Washington, DC.

Background

However, they often present mixed findings:

Health outcomes	Social Isolation	Loneliness	Study
Cardiovascular disease	X	✓	Valtorta et al., 2018 ^a (8)
Acute myocardial infarction	✓	✓	Hakulinen et al., 2018 (9)
Stroke	✓	✓	Hakulinen et al., 2018 (9)
Psychological health	X	✓	Hong et al., 2023 (10)
Mortality	✓	X	Hong et al., 2023 (10)



Objective: To better understand the independent association of social isolation and loneliness with different measures of MM among Portuguese older adults, following an international Delphi consensus on multimorbidity research.

8. Valtorta, N. K., M. Kanaan, S. Gilbody, and B. Hanratty. 2018a. Loneliness, social isolation and risk of cardiovascular disease in the English Longitudinal Study of Ageing.

9. Hakulinen C, Pulkki-Råback L, Virtanen M, et al Social isolation and loneliness as risk factors for myocardial infarction, stroke and mortality: UK Biobank cohort study of 479 054 men and women

10. Hong JH, Nakamura JS, Berkman LF, Chen FS, Shiba K, Chen Y, et al. Are loneliness and social isolation equal threats to health and well-being? An outcome-wide longitudinal approach.

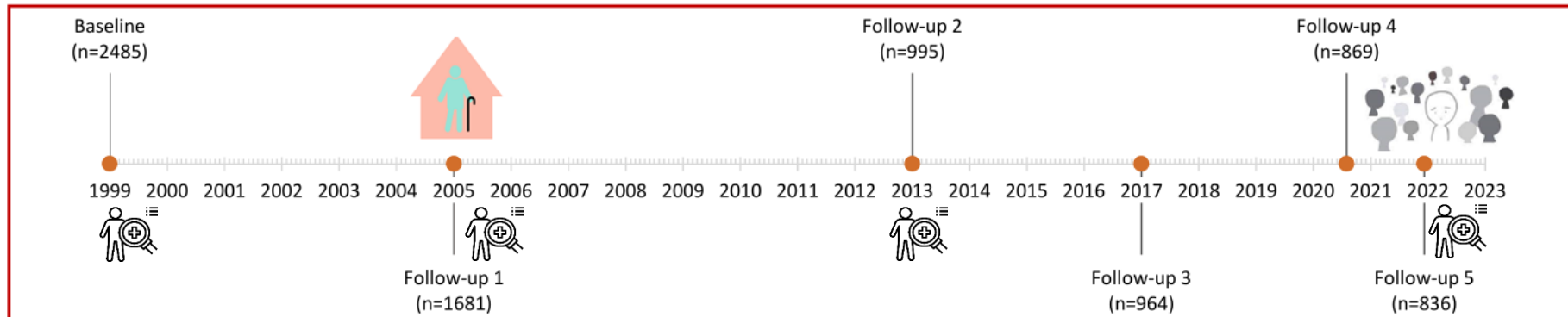
Methods

EPIPORTO

EPIPorto - Timeline

Community participants (selection through random digit dialing of landline telephone numbers):

- residents in the city of Porto
- not institutionalized
- Portuguese
- adults (≥ 18 years old)



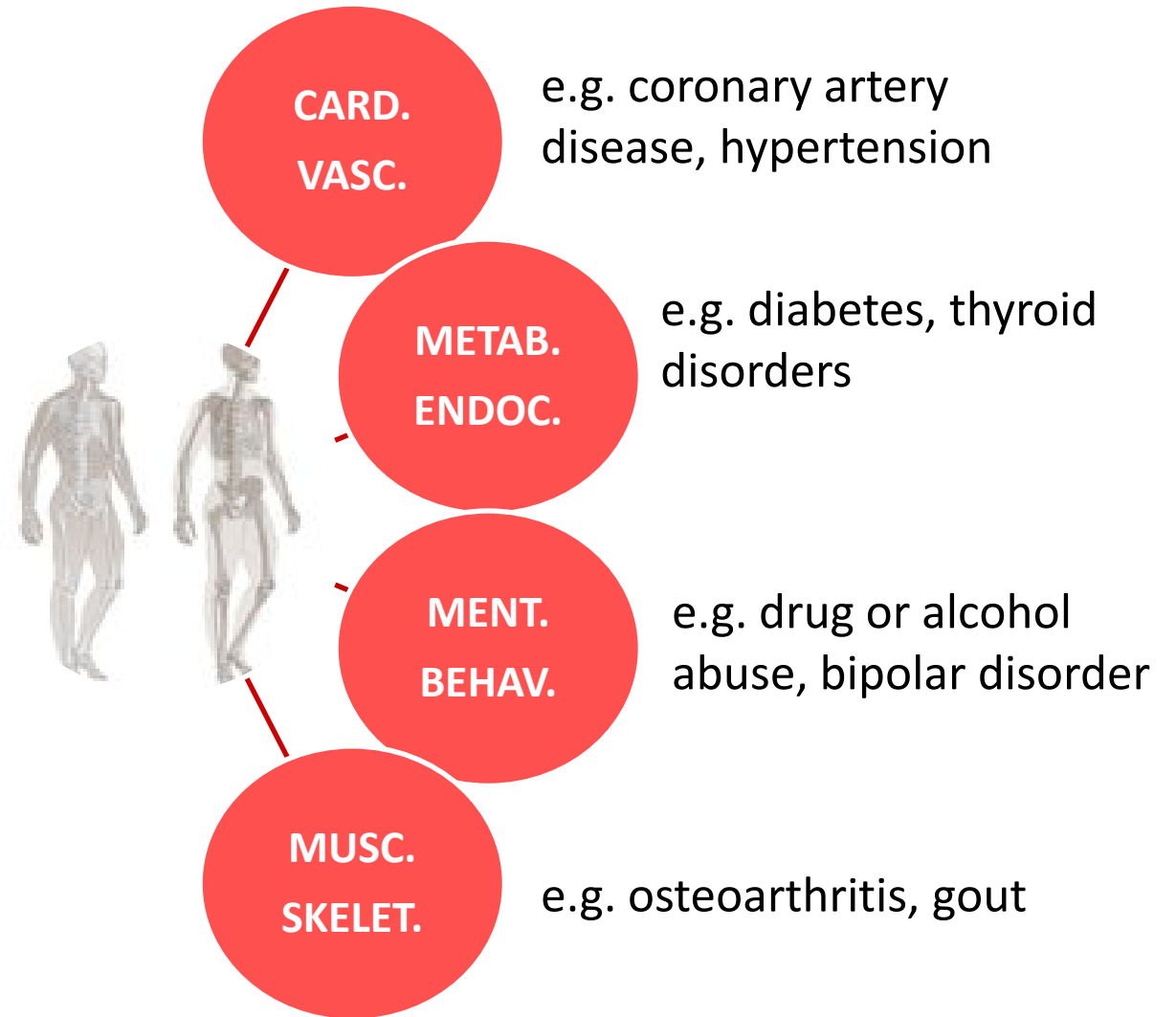
Methods

Multimorbidity

Past and present self-reported diagnosis of diseases → categorized using the **Delphi international consensus criteria**, according to body systems (ICD-10)

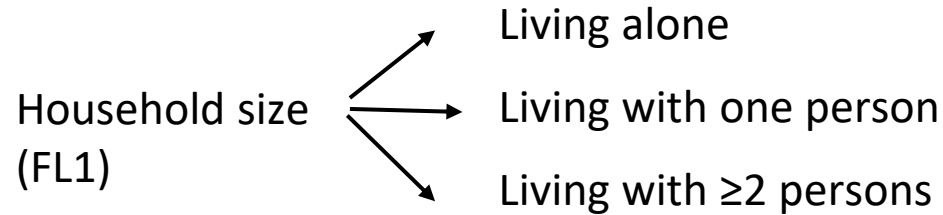
3 Outcomes:

1. Total chronic conditions: **Count of all** chronic conditions
2. **Subgroup** of chronic conditions: Identified through Principal Component Analysis: Cardiovascular, Metabolic/Endocrine, Mental/Behavioural, and Musculoskeletal
3. **Body system-specific counts**: Separate counts for chronic conditions in each of the 4 body systems



Methods

Social Isolation



Loneliness

UCLA Loneliness Scale - Portuguese validation
Total score (16-64) + 2 dimensions (Social isolation and Affinities)

Statistical analysis

Generalized Linear Models with a log-link function and a Poisson distribution were used to analyse the impact of various exposures on different health outcomes; Adjusted models were constructed, and results were reported as relative risks (RR) with 95% confidence intervals (95% CI)

Multivariate Imputation by Chained Equations

	Frequently	Sometimes	Rarely	Never	
1 – I am unhappy doing so many things alone	4	3	2	1	UCLA-A
2 – I have nobody to talk to	4	3	2	1	UCLA-A
3 – I lack companionship	4	3	2	1	UCLA-A
4 – I feel as if nobody really understands me	4	3	2	1	UCLA-A
5 – There is no one I can turn to	4	3	2	1	UCLA-SI

Results

What is the relationship between social isolation and loneliness?

Loneliness scores by household size categories				
Variable	Living alone Median (IQR)	Living with 1 person Median (IQR)	Living with ≥2 persons Median (IQR)	<i>p</i>
UCLA - Total score	22.0 (9.5)	23.0 (11.2)	22.0 (10.0)	0.39
UCLA - SI	15.0 (6.0)	15.0 (8.0)	14.0 (6.0)	0.34
UCLA - A	7.00 (3.00)	8.00 (5.00)	7.00 (5.00)	0.72

UCLA-total score: UCLA loneliness scale total score

UCLA-SI: UCLA social isolation dimension

UCLA-A: UCLA affinities dimension

Results

Association between Social isolation and Loneliness with different multimorbidity outcomes (number of chronic conditions; subgroup of chronic conditions; conditions by body system)

	Adjusted Relative Risk - aRR (95% CI)*					
	Number of chronic conditions	Subgroup of chronic conditions**	Cardiovascular conditions	Metabolic and endocrine conditions	Mental and behavioural conditions	Musculoskeletal conditions
Social Isolation						
Living alone	1 (REF)	1 (REF)	1 (REF)	1 (REF)	1 (REF)	1 (REF)
Living with 1 person	1.01 (0.91-1.12)	1.12 (0.96-1.32)	1.04 (0.90-1.20)	1.27 (0.96-1.68)	1.23 (0.94-1.61)	1.11 (0.87-1.41)
Living with ≥2 persons	1.06 (0.92-1.21)	1.21 (0.97-1.50)	1.12 (0.93-1.34)	1.50 (1.11-2.02)	1.12 (0.75-1.68)	1.28 (0.78-2.08)

** Cardiovascular, metabolic and endocrine, mental and behavioural and musculoskeletal conditions

*** Measured with the UCLA Loneliness Scale. For the sake of interpretation, UCLA scores were divided by 10; therefore, the relative risks are referring to a change of 10 points in the UCLA scale.

UCLA-SI: UCLA social isolation dimension

UCLA-A: UCLA affinities dimension

Conclusions



Results differed according to the **multimorbidity outcome** assessed (simple counts vs. body part counts)



Distinct associations when we compare social isolation and loneliness



UCLA social isolation dimension is associated with the existence of:

- Cardiovascular conditions
- Metabolic-endocrine conditions
- Mental-behavioural conditions

Thank you/ Obrigada!