

# Prevalence & burden of active chronic low back pain in the adult Portuguese population: results from a population based study

Nélia Gouveia<sup>1,2,3</sup>, Ana Rodrigues<sup>1,3,4,5</sup>, Mónica Eusébio<sup>6</sup>, Sofia Ramiro<sup>1,7,8</sup>, Pedro Machado<sup>1,9,10</sup>, Helena Canhão<sup>1,3,4,5,11</sup>, Jaime Branco<sup>1,2,3,12,13</sup>

<sup>1</sup> EpiReumaPt Study Group - Sociedade Portuguesa de Reumatologia, Lisboa, Portugal; <sup>2</sup> Center de Estudos de Doenças Crónicas (CEDOC) da NOVA Medical School, Universidade Nova de Lisboa (NMS/UNL), Lisboa, Portugal; <sup>3</sup> EpiDoc Unit - Unidade de Epidemiologia em Doenças Crónicas (CEDOC, NMS/UNL), Lisboa, Portugal; <sup>4</sup> Unidade de Investigação em Reumatologia, Instituto de Medicina Molecular, Lisboa, Portugal; <sup>5</sup> Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal; <sup>6</sup> Sociedade Portuguesa de Reumatologia, Lisboa, Portugal; <sup>7</sup> Amsterdam Clinical Immunology & Rheumatology Center, University of Amsterdam, Amsterdam, The Netherlands; <sup>8</sup> Hospital Garcia de Orta, Almada, Portugal; <sup>9</sup> Clínica Universitária de Reumatologia, Faculdade de Medicina da Universidade de Coimbra, Coimbra, Portugal; <sup>10</sup> MRC Centre for Neuromuscular Diseases, University College London, London, United Kingdom; <sup>11</sup> Serviço de Reumatologia do Hospital de Santa Maria - Centro Hospitalar Lisboa Norte (CHLN-E.P.E.), Lisboa, Portugal; <sup>12</sup> Serviço de Reumatologia do Hospital Egas Moniz - Centro Hospitalar Lisboa Ocidental (CHLO-E.P.E.), Lisboa, Portugal; <sup>13</sup> Programa Nacional Contra as Doenças Reumáticas (2004-2014), Direção Geral da Saúde, Lisboa, Portugal

## Background:

Chronic LBP (CLBP) causes enormous economic burden on individuals, families, communities, and society - is one of the greatest causes of loss of productivity through absenteeism, presenteeism and early retirement.

## Methods:

EpiReumaPt was a **cross-sectional, population-based study** conducted in a representative sample of Portuguese population (**10,661 subjects**).

To provide data analysis, a **univariate analysis** was first performed to assess the differences between the populations of individuals with active CLBP and the population without active CLBP (fig1).

An **adjusted comparison** between both populations was also carried out to assess a set of variables. To assess factors associated with active CLBP, a **multiple logistic regression model** was used.

## Objectives:

- . To determine the prevalence of active CLBP in the adult Portuguese population
- . To compare the active CLBP population with Portuguese population with no active CLBP, in terms of health care consumption, absenteeism, early retirement, anxiety symptoms
- . To explore factors independently associated with active CLBP in the Portuguese population

## Results:

The prevalence of active CLBP was 10.4% (95%CI 9.6%; 11.9%). The mean age was 58.9 (SD 17.2) years old and 68.7% were overweight or obese. Active CLBP was significantly more prevalent among women (14.1% vs 6.3% in men).

## Case definition:

**Active CLBP was defined** as self-reported pain in the back area from the lower margin of the twelfth ribs to the lower gluteal folds, with or without pain referred to the lower limbs, present in the day of the interview and that was present in the majority of time for at least 90 days.

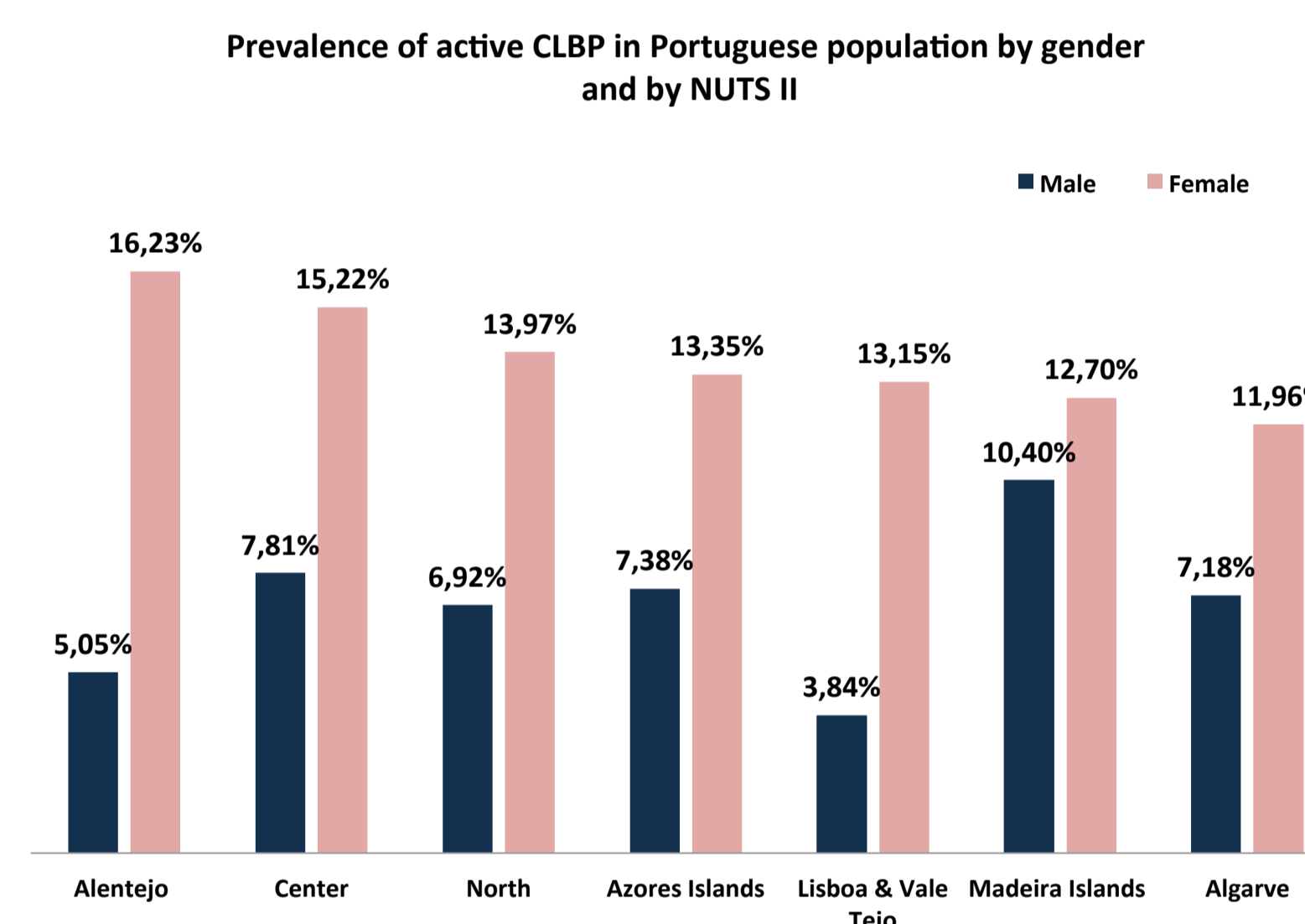


Figure 2: Prevalence of active CLBP in Portuguese adult population by gender and by NUTS II

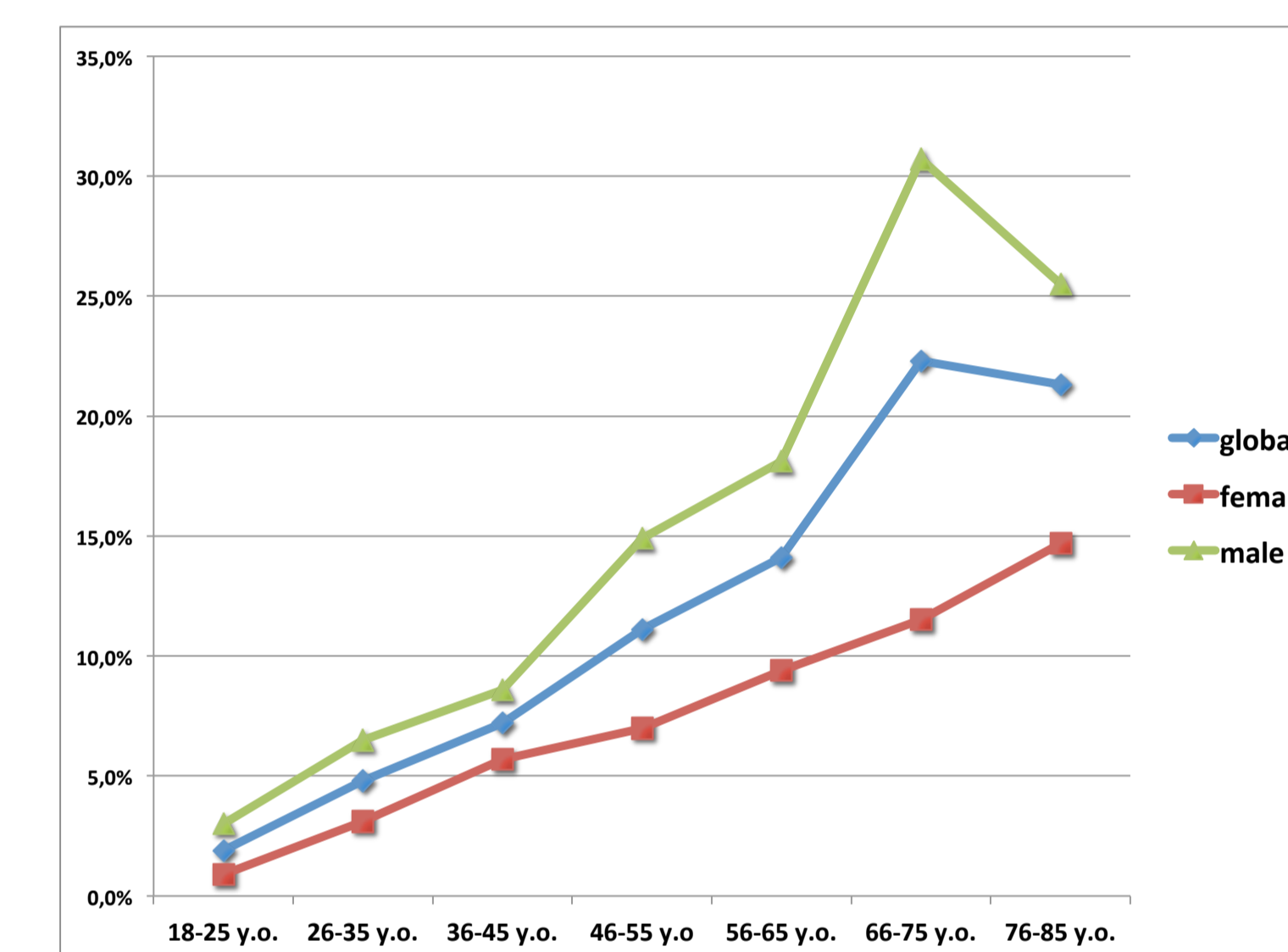


Figure 3: Prevalence of active CLBP in Portuguese adult population by age group

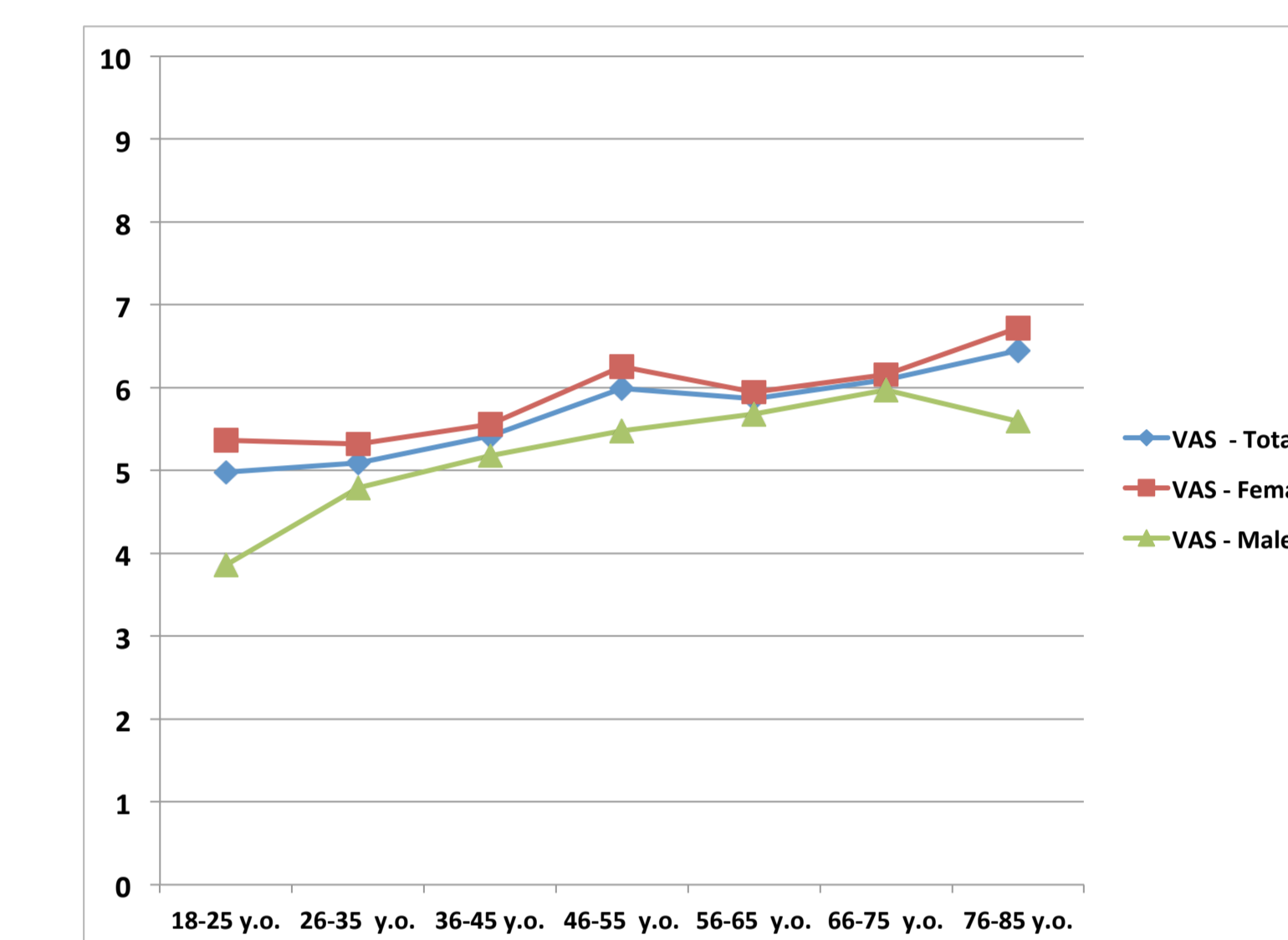


Figure 4: Severity of pain among subjects with Active CLBP population by age group

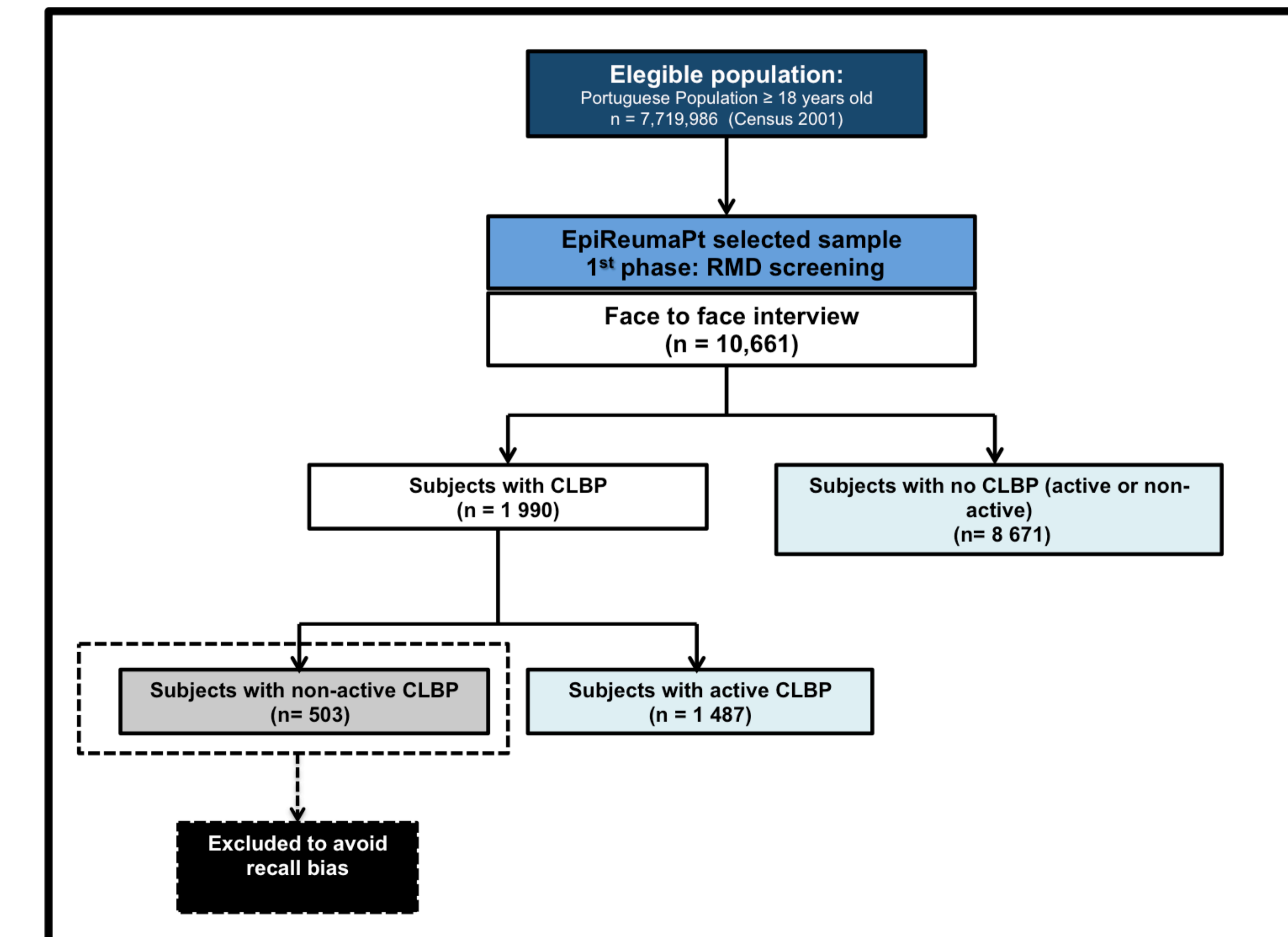


Figure 1: Study design flowchart

Table 1: Characteristics active CLBP

Characteristics of active CLBP	Active CLBP population n=1,487*	Female Active CLBP population n=1,126	Male Active CLBP population n=361
Pain severity (0-10)	6.03±2.48	6.19±2.53	5.65±2.29
Pain irradiation (%)	970 (60.9%)	758 (62.0%)	212 (58.2%)
LBP in the last 12 months (%)	1,447 (97.7%)	1,101 (98.3%)	346 (96.0%)
Age of onset (years)	40.78±19.98	41.20±20.31	39.71±18.91
Time not performing daily activities in the previous 12M(days)	45.40±125.58	45.87±130.84	44.20±111.70
Progressive, slow or insidious onset (%)	977 (69.7%)	756 (69.6%)	221 (69.9%)
Relief with exercise (%)	453 (36.8%)	329 (34.2%)	124 (43.2%)
Relief with rest (%)	1031 (74.4%)	781 (75.0%)	250 (72.8%)
Previous anti-inflammatory therapy (%)	988 (74.7%)	789 (78.6%)	199 (64.8%)
Pain control with NSAIDs therapy within 24-48h (%)	642 (69.7%)	511 (79.2%)	131 (68.0%)

After adjustment, active CLBP subjects had a higher likelihood for anxiety symptoms (OR=2.77), early retirement due to disease (OR=1.88), and physicians visits ( $\beta$ =2.65). Factors significantly and independently associated with the presence of active CLBP were: female gender (OR=1.34), overweight/obesity (OR=1.27), presence of self-reported rheumatic musculoskeletal disease (RMD) (OR=2.93), anxiety symptoms (OR=2.67), age (OR=1.02), and higher number of self-reported comorbidities (OR=1.12). In turn, physical exercise practice (OR=0.74) was inversely associated with active CLBP.

Table 2: Factors associated with active CLBP

Socio-demographic characteristics	OR	95% CI	p value
Gender (female)	1.34	1.08; 1.68	0.008†
Age (years)	1.02	1.01; 1.68	<0.001†
BMI (kg/m <sup>2</sup> )			
Underweight / normal (BMI <25 kg/m <sup>2</sup> )	1		
Overweight / obese (BMI ≥ 25 kg/m <sup>2</sup> )	1.27	1.02; 1.56	0.028†
Education level			
0-4 years	1		
5-9 years	0.95	0.72; 1.25	0.720
10-12 years	1.16	0.82; 1.63	0.399
>12 years	0.60	0.35; 1.04	0.066
NUTS II	1		
Lisboa	1.22	0.88; 1.68	0.235
Norte	1.09	0.80; 1.46	0.569
Centro	1.05	0.72; 1.55	0.770
Alentejo	0.79	0.47; 1.34	0.382
Algarve	1.26	0.90; 1.76	0.178
Madeira	1.57	1.12; 2.18	0.008†
Number of Comorbidities (0-15)	1.12	1.05; 1.19	<0.001†
Present alcohol intake (yes/no)	0.78	0.61; 1.01	0.062
Physical exercise (yes/no)	0.74	0.59; 0.93	0.011†
Anxiety symptoms (yes/no)	2.67	2.03; 3.53	<0.001†
Depressive symptoms (yes/no)	1.43	0.93; 2.22	0.106
Self-report of any RMD (yes/no)	2.93	2.23; 3.85	<0.001†

RMD-Rheumatic and musculoskeletal diseases; vs - versus; NUTS II -Nomenclature of Territorial Units for Statistics (North, Centre, Alentejo, Algarve, Lisbon, Madeira and the Azores); BMI - Body Mass Index; CI - confidence interval; OR - odds ratio  
\*Adjusted p-values<0.05.

## Conclusion

Active CLBP is significantly associated with disability and to high level of health care consumption resources. **Anxiety symptoms, other RMD and other comorbidities are significantly and independently associated** with the presence of active CLBP among Portuguese population.

### Sponsorship



The authors declare that they have no conflict of interest.

### Funding

DIREÇÃO-GERAL DA SAÚDE | FUNDAÇÃO CALOUSTE GULBENKIAN | PFIZER | ABBVIE | ROCHE | D3A - MEDICAL SYSTEMS MERCK SHARP & DOHME | ANAFRE - ASSOCIAÇÃO NACIONAL DE FREGUESIAS | ASSOCIAÇÃO NACIONAL MUNICÍPIOS PORTUGUESES | CÂMARA MUNICIPAL DE LISBOA | AÇOREANA SEGUROS | GERMANO DE SOUSA, CENTRO DE MEDICINA LABORATORIAL | GALP ENERGIA | FUNDAÇÃO ASTRA ZENECA | HAPPYBRANDS | SERVICER | BIAL | FUNDAÇÃO CHAMPALIMAUD | CAL-CLINICA | PARTICULARES

### Acknowledgements

To all Rheumatologists and other professionals who participated in this study

