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Matthieu Peurois, Aline Ramond-Roquin, Najia Adjeroud, Mélanie Bertin, Natacha Fouquet, Yves Roquelaure

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# Factors associated with physiotherapy prescription among adult patients consulting for musculoskeletal disorders in primary care



Peurois M<sup>1-2</sup>, Bertin M<sup>1</sup>, Adjeroud N<sup>2</sup>, Fouquet N<sup>3</sup>, Roquelaure Y<sup>1</sup>, Ramond-Roquin A<sup>1-2-4</sup>



<sup>1</sup>Univ Angers, Univ Rennes, Inserm, EHESP, Irset (Institut de recherche en santé, environnement et travail) - UMR\_S 1085, F-49000 Angers, France  
<sup>2</sup>Univ Angers, Department of General Practice, France  
<sup>3</sup>Santé publique France, the French National Public Health Agency, Direction of Occupational Health, EpiprevTMS team associated to the University of Angers, Angers, France  
<sup>4</sup>Univ Sherbrooke, Family and emergency medicine department, associated professor, Quebec, Canada



## Introduction

### Musculoskeletal disorders : a public health issue

- 50 % of European workers, 12.6% of General Practitioners (GP's) consultations (2014)
- 50 % of occupational accidents, 87% of occupational diseases
- 3 % of french GDP (care costs, absenteeism...)

### Bio-psycho-social management

- Physiotherapy prescription
- 8.5 % of the whole GP's prescriptions
- Initiated mainly by GPs (76.1 %)

## Objectives

To explore factors associated with physiotherapy prescription among adult patients consulting for musculoskeletal disorders in primary care at the patient's, GP's and contextual levels

## Take home messages

- **Physiotherapy prescription** is associated with **patient's**, **GP's** and **contextual** factors
- Pertinence of contextual approach using **healthcare professional accessibilities** and **deprivation markers** in general practice setting
- Use of **multilevel analyses** in primary care for other healthcare professional or contextual issues
- **Health inequalities reduction approach**

## Methods

### Design and database

- **ECOGEN** (Elements of CONsultation in GENeral practice)
- Cross-sectionnal multicenter French national study in November 2011 / April 2012
- 128 GPs

### Hierarchical data collection

- Reason for encounter, consultation results and healthcare procedures coded with **ICPC-2** (WONCA, 1998)
- Data about patients, GPs et consultation context

### Inclusion criteria

- 18 / 65 years-old
- Consulting for MSDs without traumatic, infection, inflammatory or tumoral issues
- Codes ICPC-2 :
- 26 codes L (Locomotor)
- 3 codes N (Neurological)

### Contextual variables calculation with postal patients codes

- **Geographical area « Bassins de vie »** (1 666 in France, 2012)
- 16 equipments/31 among public, health, education and occupational services
- **Potential localized accessibility (PLA)** for GP and physiotherapist (2012)
- PLA = 1 → 1 full-time healthcare professional in a 15 min distance perimeter
- **French Deprivation index (FDep, Rey et al. 2009)**
- % of unemployed - % of workers
- % of bachelor - monthly median incomes

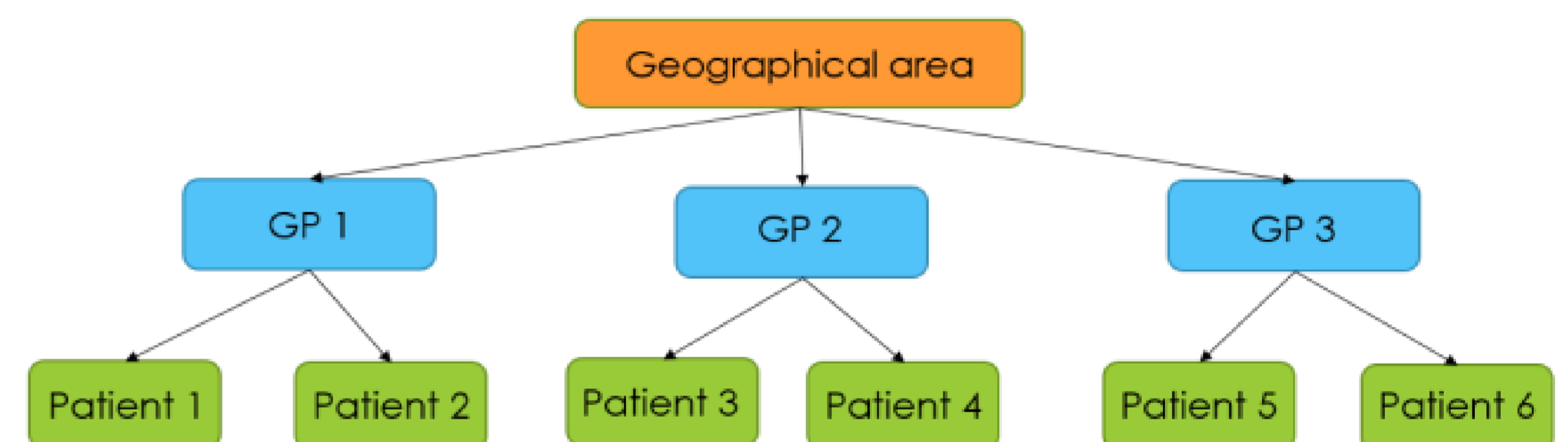
### Statistical analyses

#### Multidimensional exploratory analyses

- Multiple correspondance analysis (MCA) and hierarchical ascending classification (HAC)
- Only using patients' variables

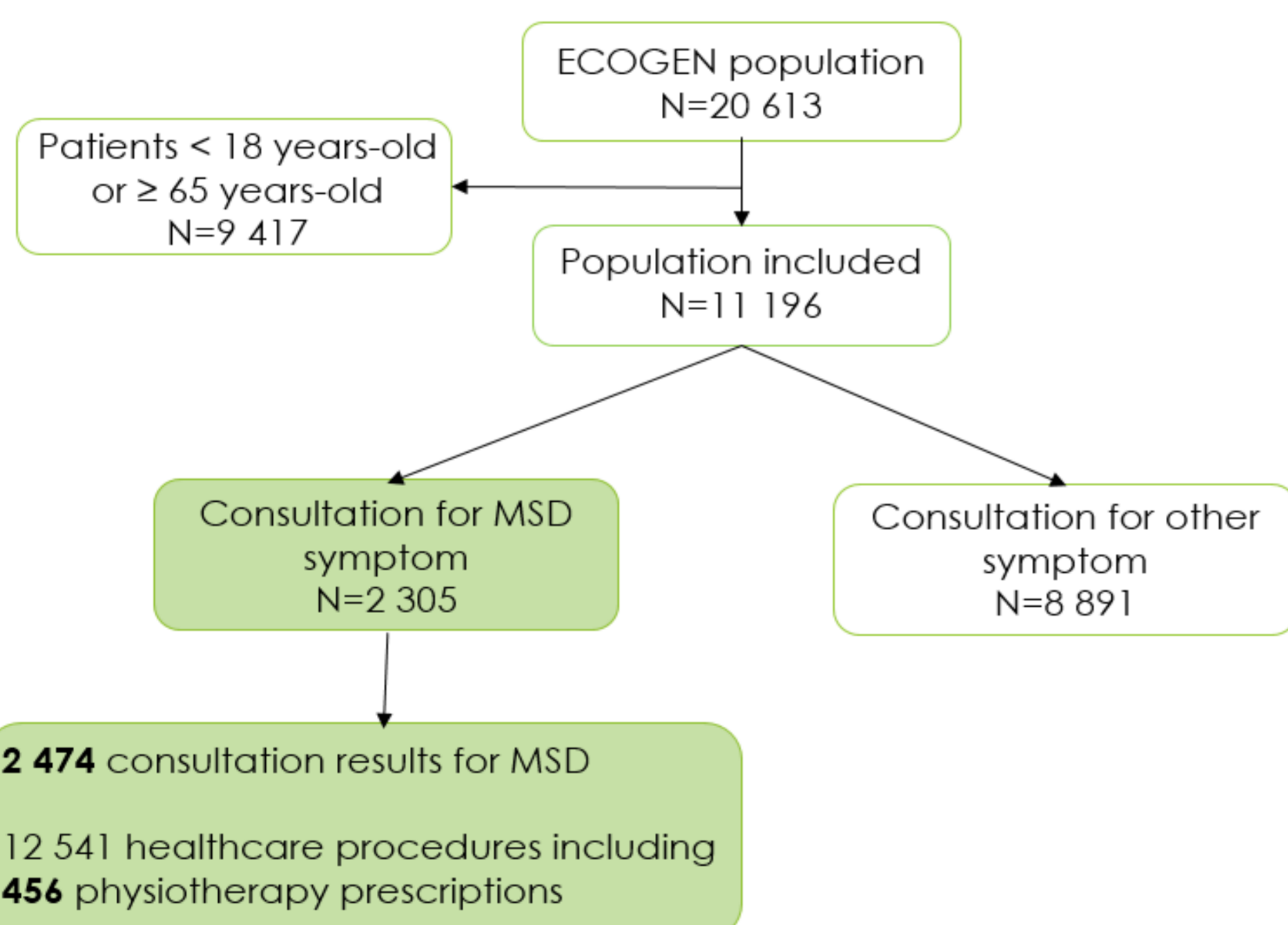
#### Multilevel logistical Regression (128 GPs et 62 geographical areas)

- Marginal model or population-average : Generalized Estimating Equations (GEE)
- Sensitivity analyses with fixed-effect and random-effect mixed models



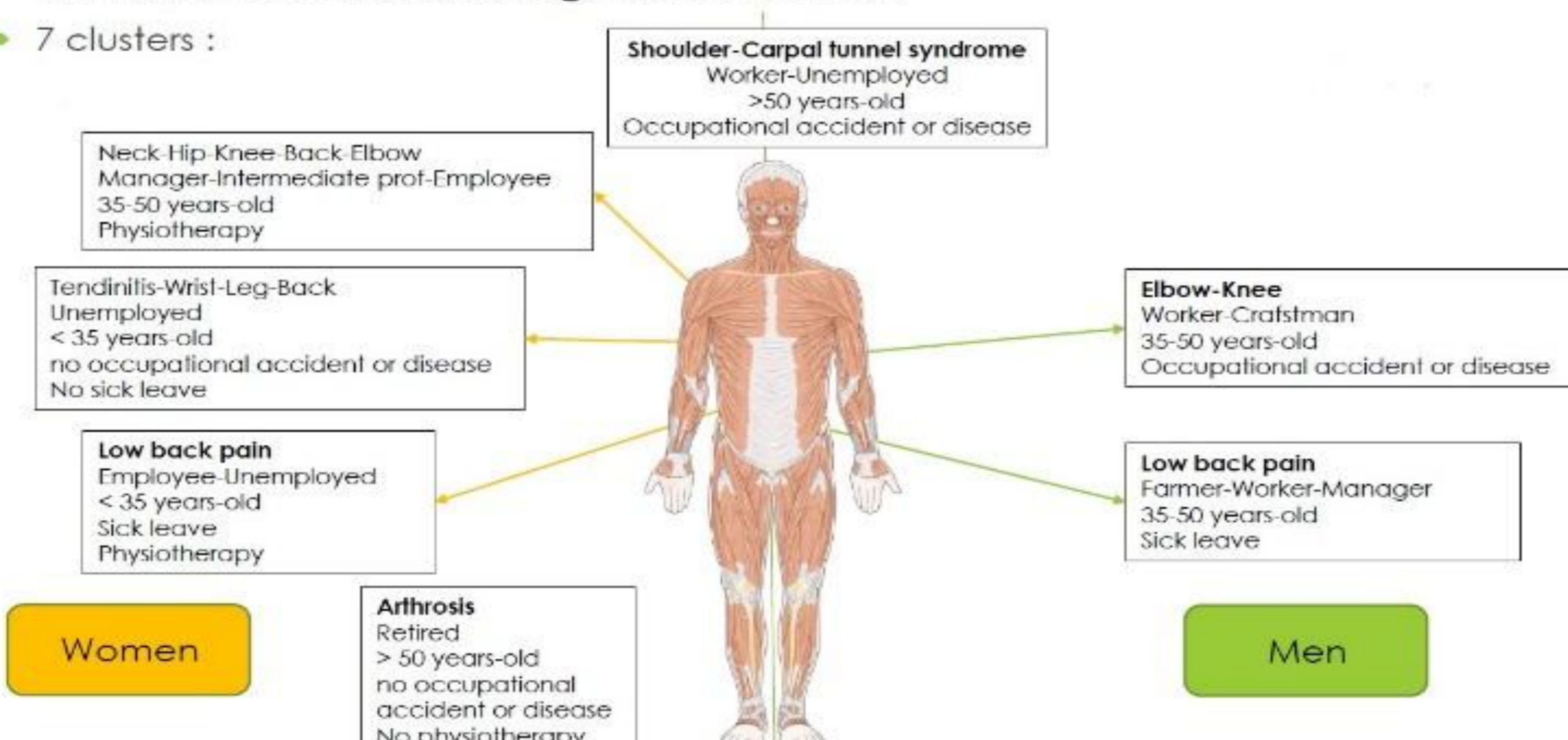
## Results

### Flow chart



### Hierarchical ascending classification

#### 7 clusters :



### Multilevel ajusted logistic regression

	OR (CI 95%)	p-value
<b>Patient's variables</b>		
<b>Age</b>		
35-50 years-old	0.78 (0.58-1.04)	0.084
>50 years-old	0.69 (0.52-0.91)	<b>0.008</b>
<b>Gender female</b>	1.28 (1.03-1.59)	<b>0.024</b>
<b>Number of healthcare procedures</b>		
4-6	0.73 (0.57-0.93)	<b>0.013</b>
>6	0.68 (0.50-0.94)	<b>0.018</b>
<b>GP's variables</b>		
<b>Age &gt; 50 years-old</b>	0.50 (0.39-0.63)	<b>&lt;0.001</b>
<b>Practice location</b>		
Semi-urban	0.62 (0.42-0.90)	<b>0.013</b>
Urban	0.84 (0.58-1.21)	0.344
<b>Type of exercise</b>		
Group	0.98 (0.74-1.30)	0.902
Multidisciplinary team	0.62 (0.43-0.90)	<b>0.011</b>
<b>Number of consultations &gt;5000 by year</b>	0.79 (0.63-0.99)	<b>0.038</b>
<b>Geographical variables</b>		
<b>French Deprivation index</b>		
Q2	0.73 (0.52-1.00)	0.053
Q3	0.61 (0.41-0.90)	<b>0.013</b>
Q4	0.60 (0.40-0.90)	<b>0.013</b>
<b>Spine symptoms</b>	1.47 (1.18-1.83)	<b>&lt;0.001</b>
<b>Shoulder symptoms</b>	1.66 (1.20-2.29)	<b>0.002</b>

→ **Mixed models** : Similar results

→ **Spine model** : Similar results, with low physiotherapist accessibility as contextual factor associated with less physiotherapy prescription