

A QUALITATIVE APPROACH TO FIND PHENOMENOLOGICAL PATTERNS OF CHRONIC PAIN

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INTRODUCTION

There are numerous works intended to study and measure chronic pain using quantitative methods. However, the number of pain studies implemented from a qualitative point of view, are less frequent. The aim of this study is to build a catalog of phenomenological categories of pain, paying special attention to chronic pain. We take, as starting point, the people descriptions about their painful experiences. In order to obtain this data, we used personal interviews trying to avoid previous knowledge over the meaning of the pain concept for us.

KEYWORDS

Qualitative, Phenomenological, Chronic Pain

METHODS

We used a mixed qualitative and quantitative methodology, in order to data triangulation. The research was divided in two defined parts. First, we obtained pain descriptions from 150 adult people, male and female, ranging between 16 to 88 years old. The information was obtained and transcribed through key informants, directly related with the interviewed people (Table 1). This way of collect text is part of an unobtrusive content analysis technique. Second, the information was processed using the *Hyper Research* application v. 2.8.3 (Table 2) and analyzed in order to develop a reduced number of defining characteristics of chronic pain. Quantitative study was performed using Multivariate Analysis Methodology.

Table 1. Example of pain description made by an interviewed person. Labeled with the Code Name: 'Activity limitation'

English Text	Texto en Español
<i>I can't do everything I would like to do, and this affects me because I've always been a very active person, consequently this situation is really overwhelming me. Before I used to enjoy walking, but now when I walk I get tired soon and my legs and my back hurt a lot, and so most of my time I spend sitting at home and I do not like that. I can't make my bed nor clean the bathroom or kitchen. I do need help for almost everything I do. I can't take a shower by myself or go out to buy anything because I can't carry too much weight. Having to depend on others to do my own things, is what makes me feel worst.</i>	"No puedo hacer todo lo que yo quisiera y eso me afecta ya que yo siempre he sido una persona muy activa, esta situación me agobia. Antes me gustaba mucho pasear y ahora cuando ando un poco me canso enseguida y me duelen mucho las piernas y la espalda, así que la mayoría de mi tiempo lo paso en casa y sentada y eso no me gusta nada. No puedo hacer la cama ni limpiar el baño, ni la cocina así que necesito ayuda para casi todo. Tampoco me puedo duchar sola ni ir a comprar casi nada porque no puedo llevar mucho peso. El tener que depender de los demás por culpa de este dolor es lo que más me duele"

Table 2. Example of Hyper Research Template

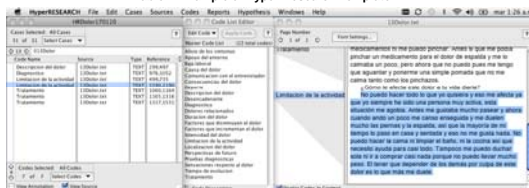


Table 3. Catalog of 22 labels of people painful experiences (alphabetically ordered)

(1) Activity limitation	(7) Environmental support	(13) Pain description	(19) Relief of symptoms
(2) Cause of pain	(8) Future prospects	(14) Experience and sensations of pain	(20) Sick leave
(3) Communication with the interviewer	(9) Location of pain	(15) Pain increasing factors	(21) Sport
(4) Diagnosis	(10) Other related pains and discomfort	(16) Pain intensity	(22) Time of evolution
(5) Diagnostic test	(11) Pain consequences	(17) Pain treatment	
(6) Duration of pain	(12) Pain decreasing factors	(18) Pain triggers	

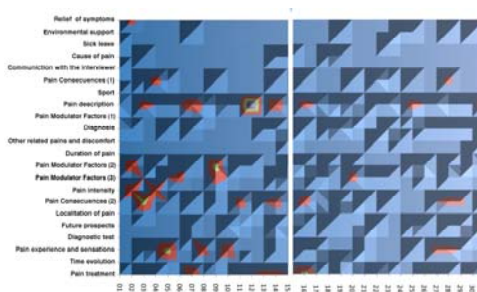


Figure 1. Scores of categories plotted in a surface graphic. Higher frequencies are represented in colours different than blue, numbers in abscises represent interviewed people.

Table 4. Factor Analysis. Rotation Varimax.

Relief of symptoms	-0.1796990	0.9786239	0.095414
Environmental support	-0.3289110	0.4511385	0.8296275
Sick leave	-0.1958190	0.9771495	0.020975
Cause of pain	-0.1560850	0.9841208	0.083013
Communication with the interviewer	-0.1797890	0.9785660	0.0999465
Activity limitation	0.9953461	-0.0553120	-0.078960
Sport	-0.1797890	0.9785660	0.0999465
Pain description	0.9907286	-0.0734470	-0.1142570
Pain triggers	-0.1849090	0.9079287	0.3760270
Diagnosis	0.9540838	-0.1925890	0.2294191
Other related pain and discomfort	0.1457037	0.9888521	-0.0304580
Duration of pain	-0.1787820	0.9792007	0.0954331
Pain increasing factors	0.9922068	-0.0746590	-0.0997160
Pain decreasing factors	0.9907559	-0.0730370	-0.1141110
Pain intensity	0.2152593	0.9757846	-0.0283590

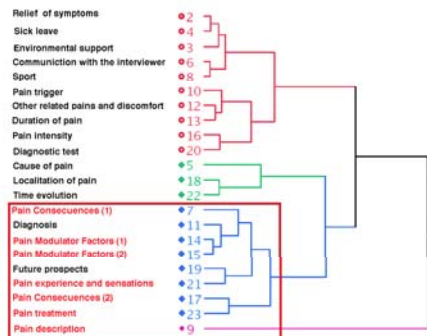


Figure 2. Hierarchical cluster dendrogram, Ward's method. In the red box we observe the labels with higher scores.

RESULTS

Interviewed people were 96 woman (61.7±18.5 yr old) and 54 men (47.3±23.4 yr old). Comments, about people painful experiences (Table 1), were analyzed independently by three experts in qualitative research. Two researchers performed their analyses using the *Hyper Research* application. The third researcher analyzed the people responses manually.

The characteristics of people painful experiences were collected and catalogued as a list of 22 labels (Table 3). Data from each of this labels were plotted as a surface graphic (Figure 1), and processed with Factorial Analysis and Cluster Analysis as represented in Table 4 and Figure 2, respectively.

Finally, data were reduced into five main characteristics as follows (Table 5): (1) Pain description, (2) Pain consequences, (3) Pain modulator factors, (4) Pain treatment, and (5) Experience and sensations of pain. In contrast, other pain aspects habitually considered in quotidian clinical assistance as, for example: causes, duration, location, evolution, etc (Table 5), were less considered by the interviewed people.

Table 5. Catalog of phenomenological categories of pain

Categories with higher scores	Categories with medium scores	Categories with lower scores
Pain description (68)	Diagnosis (23)	Time of evolution (10) (Duration of pain, ...)
Pain consequences (58) (Activity limitation, Sick leave, etc)	Future prospects (18)	Location of pain (10)
Pain Modulator Factors (55) (increase, decrease, trigger, etc)		Cause of pain (7)
Pain treatment (48) (Relief of symptoms, etc)		Pain intensity (6)
Experience and sensations of pain (34)		Environmental support (6)
		Other related pains and discomfort (5)
		Sport (1)
		Communication with the interviewer (1)

CONCLUSIONS

In this study we have established a reduced number of pain aspects to analyze and classify the painful experience from the person point of view. This will let us build scales to compare different kind of pain using several variables, such as age, gender, ethnicity, socio-cultural level, pharmacological improvement, etc.

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BACKGROUND AND OBJECTIVES

Musculoskeletal pain and headache (or migraines) are two common types of chronic pain that have a significant impact on both the individual and society.

The objective of this study was to examine the evolution of the prevalence of these symptoms and their association with socio-demographic and lifestyle variables, as well as to the perception of health among the general population of Spain between 1987 and 2006.

METHODS

The data used were obtained in two cross-sectional studies performed by National Health Surveys, via personal interviews conducted with adults over the age of 16, who were selected as a randomized sample of the non-institutionalized Spanish population.

In total, 57,222 individuals were interviewed, 27,774 in 1987 and 29,478 in 2006.

Chronic pain was self-reported, and was defined as the presence of frequent pain in the bones, joints, or back and/or the head in the last 12 months.

For each of the two years studied, both the gross prevalence of chronic pain and that standardized by age were calculated, and the analyses were stratified by gender, age, body mass index, level of studies, marital status, occupation, level of physical activity during leisure time, amount of sleep and overall perception of physical well-being.

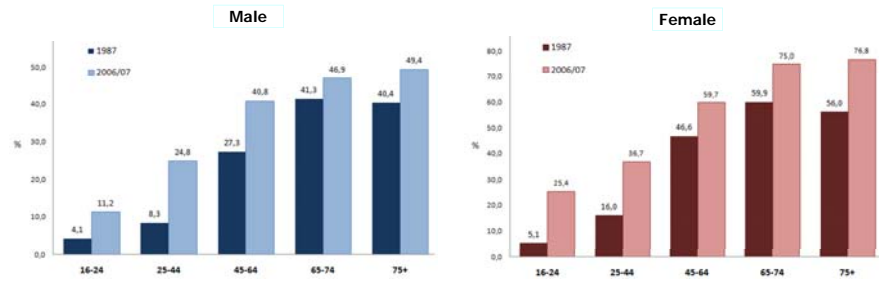
Furthermore, logistic regression models were used to estimate the association between each type of chronic pain and the socio-demographic and lifestyle variables for each year.

RESULTS

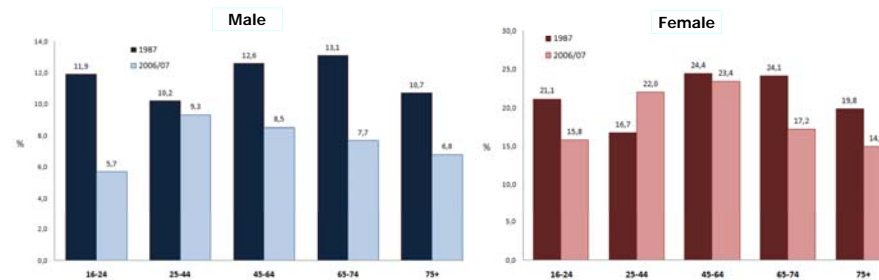
In 1987, the unadjusted prevalence of chronic musculoskeletal pain was 23.8% (CI 95%, 23.3-24.3); in 2006, it was 41.1% (CI 95%, 40.5-41.7). After standardizing such data by age, this indicated a significant increase of 59.7% of chronic pain over the period (p<0.05).

Regarding chronic headache, in 1987 16.8% (CI 95% 16.4-17.2) and in 2006 14.4% (CI 14.0-14.8) of participants reported having suffered symptoms in the preceding 12 months. According to results standardized by age, there was a decrease of 16.0% in this type of complaint over the period studied.

TRENDS IN CHRONIC MUSCULOSKELETAL PAIN BY GENDER AND AGE GROUP



TRENDS IN CHRONIC HEADACHE BY GENDER AND AGE GROUP



FACTORS ASSOCIATED WITH CHRONIC MUSCULOSKELETAL PAIN

Variable	1987		2006	
	Unadjusted OR (CI 95%)	Adjusted* OR (CI 95%)	Unadjusted OR (CI 95%)	Adjusted* OR (CI 95%)
Gender				
Male	1.00	1.00	1.00	1.00
Female	2.07 (1.96-2.20) †	1.92 (1.71-2.15) †	2.21 (2.11-2.32) †	2.09 (1.96-2.23) †
Age group (years)				
16-24	0.35 (0.31-0.40) †	0.52 (0.43-0.64) †	0.50 (0.46-0.55) †	0.75 (0.66-0.86) †
25-44	1.00	1.00	1.00	1.00
45-64	4.35 (4.03-4.70) †	2.58 (2.33-2.86) †	2.31 (2.18-2.45) †	1.62 (1.51-1.74) †
65-74	7.80 (7.09-8.59) †	3.44 (2.93-4.03) †	3.82 (3.52-4.16) †	1.98 (1.73-2.28) †
75+	7.12 (6.30-8.05) †	2.97 (2.38-3.70) †	4.29 (3.93-4.69) †	1.82 (1.56-2.14) †
Body Mass Index				
<25 kg/m ²	1.00	1.00	1.00	1.00
25-29.9 kg/m ²	2.07 (1.92-2.23) †	1.31 (1.20-1.43) †	1.48 (1.41-1.57) †	1.19 (1.12-1.27) †
≥30 kg/m ²	3.01 (2.71-3.34) †	3.01 (2.71-3.34) †	2.18 (2.03-2.37) †	1.31 (1.20-1.43) †
Schooling				
University	1.00	1.00	1.00	1.00
Secondary	0.40 (0.37-0.42) †	0.77 (0.70-0.84) †	0.55 (0.51-0.60) †	0.86 (0.77-0.96) †
Primary	0.16 (0.14-0.17) †	0.76 (0.67-0.85) †	0.28 (0.26-0.30) †	0.78 (0.70-0.88) †
None	0.14 (0.12-0.17) †	0.60 (0.49-0.74) †	0.25 (0.23-0.27) †	0.70 (0.62-0.80) †
Marital status				
Married	1.00	1.00	1.00	1.00
Single	0.24 (0.22-0.26) †	0.82 (0.72-0.94) †	0.41 (0.38-0.43) †	0.84 (0.78-0.91) †
Divorced	1.41 (1.12-1.78) †	1.42 (1.02-1.96) †	0.91 (0.81-1.03)	0.87 (0.76-1.00)
Widowed	2.93 (2.66-3.22) †	1.08 (0.92-1.26)	2.35 (2.13-2.59) †	0.89 (0.78-1.03)
Occupation				
Active worker	1.00	1.00	1.00	1.00
Unemployed	0.82 (0.71-0.94) †	0.99 (0.83-1.19)	1.34 (1.22-1.47) †	1.11 (0.99-1.24)
Retired	4.91 (4.51-5.34) †	1.18 (1.02-1.36) †	3.10 (2.91-3.30) †	1.14 (1.01-1.28) †
Student	0.29 (0.24-0.34) †	1.04 (0.81-1.33)	0.32 (0.28-0.36) †	0.66 (0.56-0.79) †
Housework	3.24 (3.02-3.47) †	1.05 (0.93-1.20)	2.75 (2.56-2.96) †	0.99 (0.90-1.10)
Physical activity				
Non sedentary	1.00	1.00	1.00	1.00
Sedentary	2.64 (2.48-2.82) †	1.18 (1.08-1.30) †	1.11 (1.05-1.16) †	0.94 (0.89-1.00)
Sleep duration (hours/day)				
7-8	1.00	1.00	1.00	1.00
≤6	2.36 (2.21-2.52) †	1.33 (1.21-1.47) †	2.04 (1.93-2.16) †	1.34 (1.25-1.44) †
≥9	1.04 (0.97-1.13)	0.98 (0.88-1.09)	1.10 (1.03-1.18) †	0.78 (0.71-0.85) †
Self-rated health				
Regular, bad, very bad	1.00	1.00	1.00	1.00
Good, very good	0.14 (0.13-0.15) †	0.23 (0.21-0.25) †	0.17 (0.16-0.18) †	0.24 (0.23-0.26) †

OR= odds ratio; CI= confidence interval; *Logistic regression model adjusted by all socio-demographic, lifestyle and health status variables; † p-value<0.05

FACTORS ASSOCIATED WITH CHRONIC HEADACHE

Variable	1987		2006	
	Unadjusted OR (CI 95%)	Adjusted* OR (CI 95%)	Unadjusted OR (CI 95%)	Adjusted* OR (CI 95%)
Gender				
Male	1.00	1.00	1.00	1.00
Female	2.05 (1.92-2.19) †	1.77 (1.60-1.96) †	2.84 (2.65-3.05) †	2.74 (2.52-3.00) †
Age group (years)				
16-24	0.78 (0.72-0.86) †	0.91 (0.79-1.04)	0.65 (0.58-0.73) †	0.73 (0.62-0.86) †
25-44	1.00	1.00	1.00	1.00
45-64	1.18 (1.09-1.27) †	0.87 (0.79-0.97) †	1.05 (0.97-1.13)	0.71 (0.64-0.78) †
65-74	1.22 (1.09-1.35) †	0.81 (0.68-0.98) †	0.82 (0.73-0.92) †	0.35 (0.29-0.42) †
75+	0.96 (0.83-1.12)	0.62 (0.47-0.82) †	0.71 (0.62-0.81) †	0.29 (0.23-0.36) †
Body Mass Index				
<25 kg/m ²	1.00	1.00	1.00	1.00
25-29.9 kg/m ²	0.96 (0.89-1.04)	0.95 (0.87-1.04)	0.96 (0.89-1.03)	1.10 (1.01-1.20) †
≥30 kg/m ²	1.05 (0.93-1.20)	0.91 (0.79-1.04)	1.20 (1.09-1.33) †	1.10 (0.98-1.23)
Schooling				
University	1.00	1.00	1.00	1.00
Secondary	0.78 (0.72-0.84) †	0.96 (0.87-1.07)	0.77 (0.69-0.86) †	0.72 (0.63-0.83) †
Primary	0.68 (0.63-0.74) †	1.00 (0.89-1.12)	0.68 (0.61-0.75) †	0.67 (0.58-0.77) †
None	0.56 (0.48-0.65) †	0.84 (0.70-1.02)	0.61 (0.54-0.69) †	0.66 (0.56-0.77) †
Marital status				
Married	1.00	1.00	1.00	1.00
Single	0.71 (0.66-0.76) †	0.84 (0.74-0.94) †	0.79 (0.74-0.85) †	1.00 (0.91-1.10)
Divorced	1.50 (1.16-1.93) †	1.35 (0.99-1.86)	1.26 (1.08-1.47) †	1.14 (0.96-1.35)
Widowed	1.15 (1.02-1.29) †	0.87 (0.72-1.05)	1.00 (0.88-1.14)	0.89 (0.75-1.07)
Occupation				
Active worker	1.00	1.00	1.00	1.00
Unemployed	1.19 (1.04-1.36) †	1.23 (1.06-1.44) †	1.42 (1.26-1.61) †	1.13 (0.99-1.29)
Retired	1.21 (1.08-1.34) †	1.02 (0.86-1.20)	0.99 (0.91-1.08)	1.18 (1.02-1.38) †
Student	1.01 (0.89-1.14)	1.29 (1.09-1.51) †	0.77 (0.66-0.90) †	1.11 (0.91-1.36)
Housework	1.93 (1.79-2.08) †	1.07 (0.95-1.20)	1.76 (1.61-1.93) †	1.04 (0.92-1.17)
Physical activity				
Non sedentary	1.00	1.00	1.00	1.00
Sedentary	1.40 (1.31-1.50) †	1.05 (0.97-1.14)	1.13 (1.06-1.21) †	0.93 (0.86-1.01)
Sleep duration (hours/day)				
7-8	1.00	1.00	1.00	1.00
≤6	1.41 (1.30-1.52) †	1.20 (1.09-1.33) †	1.62 (1.50-1.74) †	1.37 (1.26-1.49) †
≥9	0.89 (0.82-0.97) †	0.86 (0.77-0.95) †	1.05 (0.95-1.15)	1.02 (0.91-1.14)
Self-rated health				
Regular, bad, very bad	1.00	1.00	1.00	1.00
Good, very good	0.40 (0.37-0.43) †	0.43 (0.40-0.47) †	0.35 (0.32-0.37) †	0.34 (0.32-0.37) †

OR= odds ratio; CI= confidence interval; *Logistic regression model adjusted by all socio-demographic, lifestyle and health status variables; † p-value<0.05

CONCLUSIONS

1. Between 1987 and 2006 complaints of chronic musculoskeletal pain increased, while complaints of chronic headache decreased.
2. These changes varied according to socio-demographic and lifestyle factors, although the factors associated with each type of chronic pain remained relatively stable.

