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## 28 Pain and social exclusion among the European older people

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- ▶ Across Europe, significant fractions of the 50+ population are troubled by pain – women more than men, older individuals more than younger ones
  - ▶ There is a strong association between pain and social exclusion, measured either by material or social deprivation
  - ▶ These findings emphasise the need for public policy intervention promoting pain prevention and management strategies addressing the most vulnerable groups of the population
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### 28.1 Pain is a public policy challenge

Chronic pain has an important impact on people's lives and is a fundamental dimension of well-being. Pain is one of the most common reasons people seek medical attention and take medications. It also complicates the treatment of other ailments and limits one's ability to work and function in society. At the individual level, it is associated with a series of negative outcomes including depression, job loss, reduced quality of life, impairment of function and limiting daily activities. At the societal level, it imposes considerable costs on the health care system and the economy.

Calculating the costs of pain to society is difficult because they include both the direct costs of the medical treatment of pain, and the indirect costs associated to the loss in productivity in any daily activity, most notably in the workplace. Recently, the Institute of Medicine estimated that chronic pain costs the US society at least \$560–635 billion every year, an amount corresponding to about \$2,000 for everyone living in the country (in 2010 USD). These figures are greater than the annual costs of heart disease, cancer, or diabetes (IOM 2011).

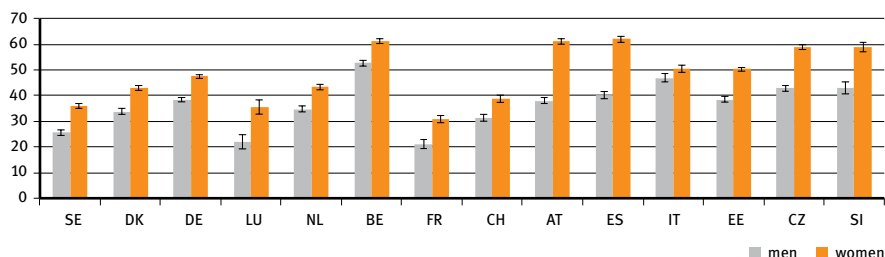
Our current understanding of people's pain experiences has been largely limited by data availability (Kahneman & Krueger 2006, Krueger & Stone 2008). In particular, little is known about the prevalence or severity of pain in the older population in Europe (Breivik et al. 2006, Kleijnen Systematic Reviews 2012).

In this paper, I exploit newly available information collected in SHARE Wave 5 to study the prevalence of chronic pain in the older population across the 14 European countries surveyed in Wave 5 (Austria, Belgium, Switzerland, Czech Republic, Germany, Denmark, Estonia, Spain, France, Italy, Luxembourg, Netherlands, Sweden and Slovenia) and investigate the extent to which chronic pain is associated with social exclusion.

## 28.2 What is the prevalence of pain in Europe?

In Wave 5, the SHARE project introduced some new questions about pain. First of all, respondents were asked whether they were troubled by pain (PH084). Across Europe, pain is part of life for one in two older (50+) adults (45%). The prevalence of pain varies widely across countries. About one out of four over-50 individuals in Switzerland and in the Netherlands suffers from pain, compared to more than one out of two in France, Italy, Slovenia and Spain. While reporting styles may explain some of these differences, some patterns are consistent across countries.

For example, Figure 28.1 shows that in every country more women than men report being troubled by pain. Overall, 52 per cent of women and 38 per cent of men are bothered by pain. In some countries, the gender gap is quite wide. For instance, in Italy, 62 per cent of women, compared to 40 per cent of men, are in pain. The correspondent figures for Spain are 61 per cent for women and 38 per cent for men.

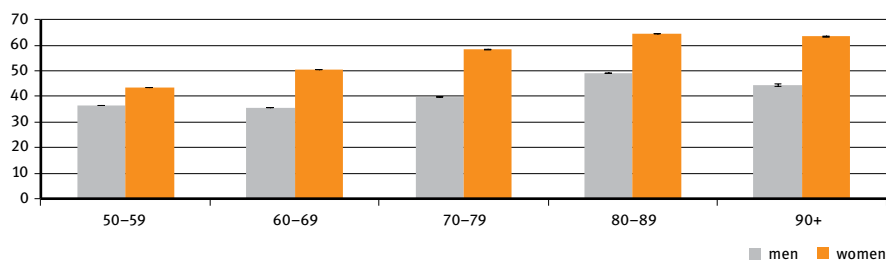


**Figure 28.1:** Prevalence of pain by gender and country

Notes: n = 61,557

Source: SHARE Wave 5 release 0; weighted

Also, prevalence of pain increases with age, but the gender gap persists as people age (Figure 28.2). For both men and women, there seems to be some kind of plateau once individuals reach their nineties. Classifying people in ten-year age groups, 43 per cent of women and 36 per cent of men aged 50 to 69 suffer from pain. By the time they reach their eighties, these percentages increase to 64 per cent and 49 per cent, respectively. This gender gap partly reflects differential mortality and seems to be consistent with the prevailing evidence indicating that women die at older ages than men, but experience higher rates of disability and poor health (e.g. Oksuzyan et al. 2008).



**Figure 28.2:** Prevalence of pain by age and gender

Notes:  $n = 61,557$

Source: SHARE Wave 5 release 0; weighted

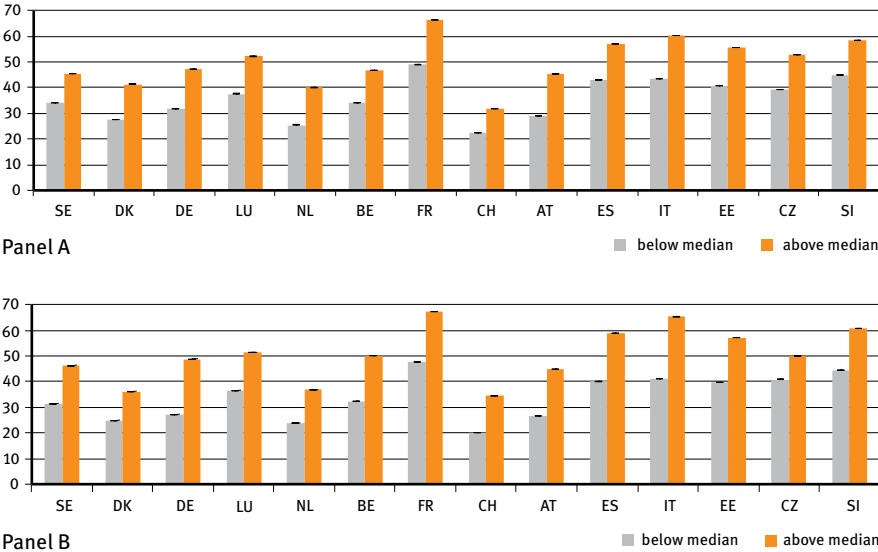
## 28.3 Pain and social exclusion

That markers of socioeconomic status, such as education and income, are associated to health outcomes is by now quite well established (e.g. Cutler & Lleras-Muney 2008). Croda (2015, in progress) shows that a similar association exists also between these measures of socioeconomic status and pain (see also Atlas & Skinner 2010). In the remainder of this chapter, I examine the extent to which there is an association between pain and social exclusion.

Social exclusion is itself a multidimensional concept, and there is little consensus on the number of these dimensions. However, the relevant aspects of exclusion can be captured by focusing on the material and social dimensions of deprivation (see chapter 6 in this volume). I rely on two indices of deprivation proposed in this book: the material deprivation index from chapter 5 and the social deprivation index from chapter 6. On the one hand, the material deprivation index focuses on material difficulties of households on two domains, the affordability of basic needs and the experience of financial difficulties, taking into account the affordability of various items, being behind with bills, etc. On the other hand, the social deprivation index addresses the extent of social isolation and lack of social support of households, taking into account the quality of the local area, number of rooms per person, lack of activities and so on.

For each index, I construct a binary indicator denoting whether individuals' deprivation index is above the median for their countries, putting them at higher risk of social exclusion than average (the median) within their country. Figure 28.3 compares the prevalence of pain for individuals at higher risk of social exclusion than average, to the prevalence of pain for individuals at lower risk of social exclusion, by country.

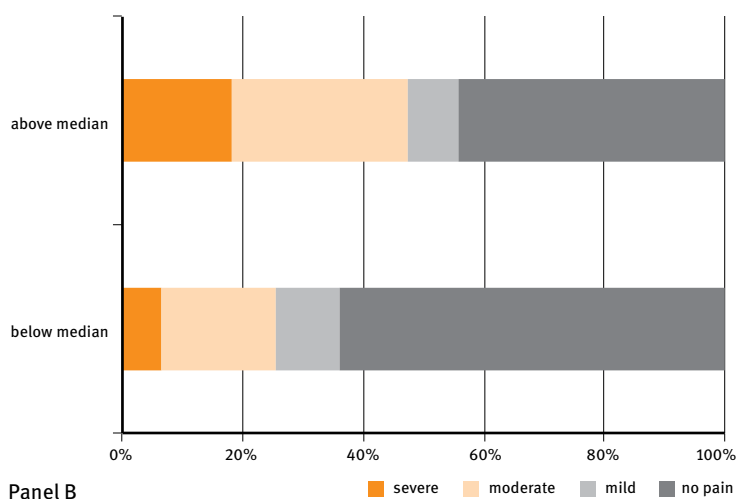
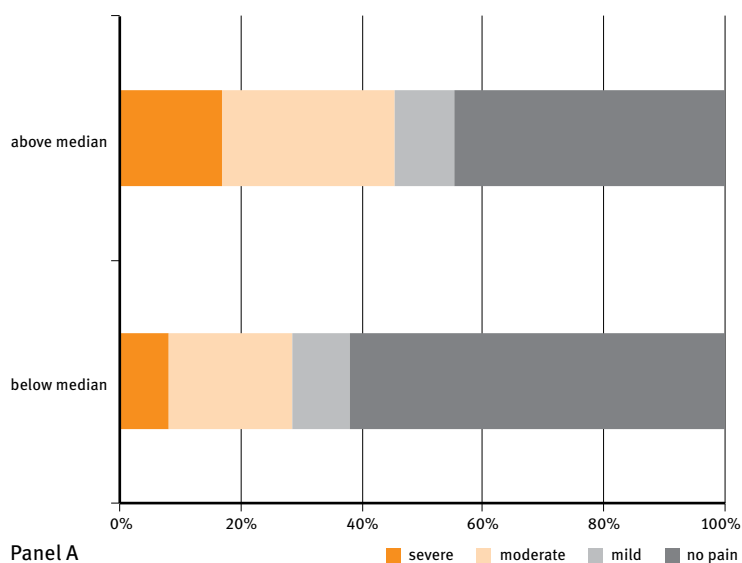
All across Europe, in every country, the prevalence of pain is much larger for those individuals who are more deprived, and therefore at higher risk of social exclusion, as operationalised by the material deprivation index (Panel A) or the social deprivation index (Panel B).



**Figure 28.3:** Prevalence of pain and social exclusion  
Notes: Panel A is based on a sample of 55,396 50+ respondents for whom the material deprivation index is available. Panel B is based on a sample of 55,038 50+ respondents for whom the social deprivation index is available.  
Source: SHARE Wave 5 release 0; weighted

The disparities are striking. For instance, in France, 66 per cent of those with material deprivation above the median are troubled by pain, compared to 49 per cent of the rest of the population, and 67 per cent of those with social deprivation above the median are troubled by pain, compared to 46 per cent of the rest of the population. Not only the more deprived groups of the population are more likely to be in pain, no matter how deprivation is operationalised, they are also more likely to experience more severe pain levels than the rest of the population. Figure 28.4 shows that across Europe, 17 per cent of individuals more materially deprived than average are in severe pain, compared to eight per cent of the rest of the population, 28 per cent in moderate pain compared to 20 per cent and only 45 per cent of them do not report suffering by pain, compared to 62 per cent of the rest of the population (Panel A). Similarly, 18 per cent of those more socially deprived than average are in severe pain, compared to six per cent of the rest of the population,

29 per cent in moderate pain compared to 19 per cent, and only 44 per cent of them do not report suffering by pain, compared to 64 per cent of the rest of the population (Panel B).



**Figure 28.4:** Intensity of pain and social exclusion

Notes: Panel A is based on a sample of 55,396 50+ respondents for whom the material deprivation index is available. Panel B is based on a sample of 55,038 50+ respondents for whom the social deprivation index is available.

Source: SHARE Wave 5 release 0; weighted

## 28.4 Does the observed association between pain and social exclusion hold also after controlling for health conditions?

The evidence presented so far suggests that women, older people, and the most materially and socially deprived are more likely to be in pain and to suffer from more severe pain. What can explain the observed strong association between pain and social exclusion? Are there variables that could partially or even fully explain the observed disparities? Alternatively, do the strong observed disparities hold even after taking into account alternative drivers?

A potentially important explanation for these strong disparities in the association between pain and social exclusion is that people in the most vulnerable groups are more likely to suffer from poor health.

In this section, I exploit the richness of the SHARE dataset to control for several dimensions of health status and study whether the association between pain and social exclusion holds also after controlling for health conditions.

Table 28.1 presents the results of regression analyses where I control for different dimensions of health status that may be associated with pain at older ages. In particular, I control for obesity, limitations with activities of daily living (based on a question asking about difficulties performing a list of everyday activities such as dressing, walking across a room, bathing or showering, eating, getting in or out of bed, using the toilet), and the number of diagnosed chronic diseases. The table shows estimates for the whole SHARE sample of over-50 individuals, disaggregated by age group (50–59, 60–69, 70+). In addition, all regressions include demographic characteristics, level of education and country indicators.

While these dimensions of health status do account for some of the correlation between pain and social exclusion, they remain a strong and persistent gradient.

In all the samples considered, even after controlling for health status and country dummies, the estimates show that women are more likely than men to experience pain, and the probability of being troubled by pain is higher for those individuals who are more materially and socially deprived than the median in their country.

**Table 28.1:** Probability of being troubled by pain

Variable	Age 50–59		Age 60–69		Age 70+		Whole SHARE sample	
Female	0.081 (0.009)	***	0.110 (0.008)	***	0.144 (0.010)	***	0.110 (0.005)	***
Social Exclusion								
Material deprivation above median	0.083 (0.009)	***	0.070 (0.008)	***	0.068 (0.010)	***	0.075 (0.005)	***
Social deprivation above median	0.074 (0.009)	***	0.079 (0.008)	***	0.060 (0.010)	***	0.072 (0.005)	***
Number of observations	14,065		18,523		13,133		51,741	

Statistical significance: \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$

Notes: Probit estimates - marginal effects. Regressions control for age (5-year age groups), marital status, country dummies, health status indicators: underweight, overweight, obese, severe obesity, at least one ADL, at least 2 diagnosed chronic diseases (heart attack, including any other heart problem such as congestive heart failure, hypertension, high blood cholesterol, stroke or cerebral vascular disease, diabetes, chronic lung disease, arthritis, including osteoarthritis, or rheumatism, cancer or malignant tumour, including leukaemia or lymphoma, stomach or duodenal ulcer, peptic ulcer, Parkinson disease, cataracts, hip, femoral or other fractures, Alzheimer's disease, dementia, organic brain syndrome, senility or any other serious memory impairment); robust standard errors in parentheses

Source: SHARE Wave 5 release 0; weighted

## 28.5 The way forward: implications for public policy

This paper is a first step in trying to understand the economic and social implications of pain and in particular the association between pain and social exclusion.

I document the following:

- across Europe, significant fractions of the 50+ population are troubled by pain: women more than men, older adults more than younger ones
- there is considerable variation in reporting of pain across countries
- there is a strong association between pain and social exclusion, measured either by material or social deprivation.

These findings emphasise the need for public policy intervention promoting pain prevention and management strategies addressing the most vulnerable groups of the population.

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## References

- Atlas, Steven, Skinner, Jonathan (2010): “Education and the prevalence of pain”. In: Wise, David (Ed.) *Research Findings in the Economics of Aging*. Chicago: The University of Chicago Press.
- Brevik, Harald, Collett, Beverly, Ventafridda, Vittorio, Cohen, Rob, Gallacher, Derek (2006): “Survey of chronic pain in Europe: prevalence, impact on daily life and treatment”. In: *European Journal of Pain*, p. 287–333.
- Croda, Enrica (2015): “Chronic pain in the European elderly population”. In progress.
- Cutler, David, Llera-Muney, Adriana (2008): “Education and health: evaluating theory and evidence”. In: House, James, Schoeni, Robert, Kaplan, George, Pollack, Harold (Eds.): *Making Americans healthier: social and economic policy as health policy*. New York: Russell Sage Foundation, p. 29–60.
- Kahneman, Daniel, Krueger, Alan (2006): “Developments in the measurement of subjective well-being”. In: *Journal of Economic Perspectives* 20. No.1, p. 3–24.
- IOM Institute of Medicine (2011): *Relieving pain in America: a blueprint for transforming prevention, care, education, and research*. Washington, DC: The National Academies Press.
- Kleijnen Systematic Reviews (2012): *Healthy ageing in relation to chronic pain in the EU: systematic literature report*. European Federation of IASP International Association for the Study of Pain. [http://www.sip-platform.eu/tl\\_files/redakteur-bereich/Home/HealthyAgeing\\_screen.pdf](http://www.sip-platform.eu/tl_files/redakteur-bereich/Home/HealthyAgeing_screen.pdf), visited on 4 April 2015.
- Krueger, Alan, Stone, Arthur (2008): “Assessment of pain: a community-based diary survey in the USA”. In: *The Lancet* 371. No.9623, p. 1519–1525.
- Oksuzyan, Anna, Juel, Knud, Vaupel, James, Christensen, Kaare (2008): “Men: good health and high mortality. Sex differences in health and aging”. In: *Aging Clinical and Experimental Research* 20. No.2, p. 91–102.