

# Is the high burden in chronic low back pain in fact related to presence of chronic widespread pain?



Anna Grimby-Ekman<sup>1</sup>, Björn Johansson<sup>1</sup>, Stefan Bergman<sup>1,2</sup>

<sup>1</sup>Public Health and Community Medicine, Sahlgrenska Academy, Gothenburg University, Sweden

<sup>2</sup>Spenshult Research and Development Center, Halmstad, Sweden

## Background and aims

The prevalence of chronic pain is about 20% in general populations. One of the most common pain sites is chronic low back pain (CLBP).

Our aim was to investigate whether CLBP is most prevalent as a localized pain or as part of chronic widespread pain (CWP), and to determine whether an association to pain spread explains the burden seen in CLBP.

## Methods

This is a cross-sectional study based on a Swedish population cohort, from 2016. Among the 1184 respondents to the questionnaire, 576 had chronic pain and were included in study.

CWP is defined according to the ACR (American College of Rheumatology)<sup>1</sup>, and based using the pain manikin below.

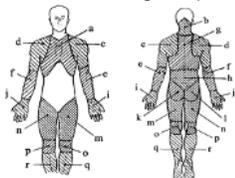


Figure 1. Manikin for marking pain locations

Drug use (0-10): A combination of using prescription and non prescription drugs, where 0 is no drug use at all, and 10 is use several times every day. Health care use (0-25): Visits to physicians or physiotherapists last 12 months, where 0 is no visits and 25 is more than 25 visits to a combination of physicians and physiotherapists. Alt med use (0-10): The scale goes from not at all to several times per day. Sick leave (0-5): The five categories represents 0%, 25%, 50%, 75% and 100% sick leave.

Table 2 Outcome of the regression analysis: The results presented are adjusted for confounders: age, BMI, educational level (7-9 respective 9+ years), chronic disease (diabetes, cardio vascular disease, pulmonary disease) and mental illness. (n=555)

Outcome	Parameter estimate	95% CI	P-value
Physical status SF-36 PCS Index Scale 0-100	Intercept (0 pain sites, CLBP=1)	54.3	46.57 ; 62.07
	CLBP = 0	2.9	1.34 ; 4.53
	Per pain site	-1.2	-1.50 ; -0.87
Mental Status SF-36 PCS Index Scale 0-100	Intercept (0 pain sites, CLBP=1)	72.7	64.26 ; 81.22
	CLBP = 0	-0.2	-2.17 ; 1.83
	Per pain site	-1.1	-1.49 ; -0.75
Drug use Scale 0-10	Intercept (0 pain sites, CLBP=1)	2.8	0.80 ; 4.70
	CLBP = 0	-0.4	-0.83 ; -0.04
	Per pain site	0.1	0.05 ; 0.20
Healthcare use Scale (0-25)	Intercept (0 pain sites, CLBP=1)	1.4	-1.83 ; 4.55
	CLBP = 0	-0.2	-0.89 ; 0.41
	Per pain site	0.3	0.13 ; 0.38
Alt med use Scale (0-10)	Intercept (0 pain sites, CLBP=1)	3.0	1.68 ; 4.29
	CLBP = 0	-0.3	-0.61 ; -0.08
	Per pain site	0.0	-0.06 ; 0.05
Sick leave Scale (0-5) n=274	Intercept (0 pain sites, CLBP=1)	2.0	-4.23 ; 8.29
	CLBP = 0	-0.5	-1.67 ; 0.59
	Per pain site	0.2	-0.03 ; 0.41

## Take home message

Spread of pain explains more of the burden of pain, than presence of low back pain. Though, low back pain explains part of the low physical function, high drug use and high use of alternative medicine.

## Results

The prevalence of CLBP as local or regional pain was 10% (95% CI 8.6 ; 12.0), and 15% as part of CWP (95% CI 12.8 ; 16.9). That is, of those having CLBP 60% also had widespread pain. Low physical status (SF-36) and high drug use was associated both with having CLBP and with increasing number of pain site. Low mental statuses (SF-36) and high health care use were only associated with increasing number of pain site. Those with CLBP and those without were close in these measures.

Table 1 Sociodemographic data

Age (years)	N	Mean	SD	
Male	508	65	12.6	
Female	676	64	12.8	
		Men	Women	All
<b>Education level</b>		%	%	%
7-9 years (Compulsory school)	39	41	40	
< 9 years (Secondary school, university)	61	59	60	
<b>Categories</b>	<b>BMI</b>	%	%	%
Underweight	< 18.5	0.2	0.9	0.6
Normal weight	18.5 ≤ and ≤ 24.9	43.1	54.1	49.4
Overweight/obesity	> 25	56.7	45.0	50.0

## Conclusion

CLBP was prevalent both as a regional pain and as present in CWP. Both the spread of pain and the presence of CLBP explained low physical function and drug use. However, low mental statuses and high health care use was explained by the spread of pain, and not by the presence of CLBP.

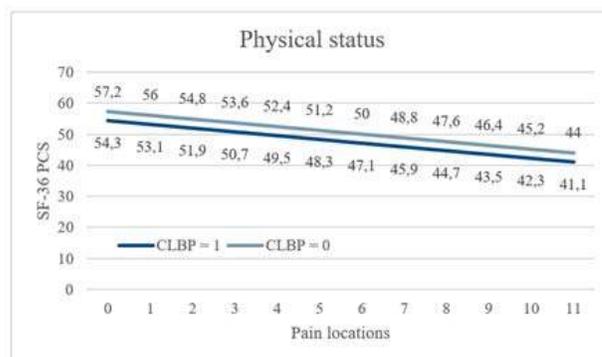


Figure 2. SF-36 Physical status (PCS) relative to chronic low back pain (CLBP) respectively the number of locations with pain.

<sup>1</sup> Wolfe F, Smythe HA et al. The American college of rheumatology 1990 criteria for the classification of fibromyalgia. Arthritis & Rheumatism. 1990.

<sup>2</sup> Farivar SS et al. Correlated physical and mental health summary scores for the SF-36 and SF-12 Health Survey. V.1. Health and Quality of Life Outcomes. 2007.