



Overlap of pain-related and general measures of disability among adults with chronic pain

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PURPOSE

Chronic pain is known to be correlated with disability. We aimed to determine the overlap between a general self-reported measure of disability and a measure of disability due to pain problems among adults with chronic pain.

MATERIALS & METHODS

We used data from the National Health Interview Survey (NHIS) and analyzed respondents with chronic pain in the past 3 months. General disability was defined as being limited in the kind or amount of work one can do due to any physical, mental, or emotional problem. Pain-related disability was defined as pain limiting one's activity on “most days” or “every day.”

RESULTS

Based on a sample of 6874 respondents with chronic pain, 58% had either kind of disability, including 9% who reported only pain-related, but not general disability; and 27% who reported both types of disability. Respondents reporting only pain-related, but not general disability tended to be younger and had lower rates of obesity, smoking, diabetes, and hypertension than respondents reporting both pain-related and general disability.

Table 1. Weighted proportions (with 95% confidence intervals) of chronic pain severity and location, according to presence of general and pain-related disability.

Variable	Both general and pain-related disability (Unweighted N=1,920)	General, but no pain-related disability (Unweighted N=1,523)	Pain-related, but not general disability (Unweighted N=620)	No disability (Unweighted N=2,811)	P
Pain severity					
Mild/moderate	0.39 (0.37, 0.42)	0.73 (0.70, 0.76)	0.52 (0.47, 0.57)	0.83 (0.81, 0.85)	<0.001
Severe	0.61 (0.58, 0.63)	0.27 (0.24, 0.30)	0.48 (0.43, 0.53)	0.17 (0.15, 0.19)	<0.001
Pain location ^a					
Back	0.72 (0.70, 0.74)	0.57 (0.54, 0.60)	0.57 (0.52, 0.62)	0.47 (0.45, 0.49)	<0.001
Hands, arms, shoulders	0.60 (0.57, 0.63)	0.47 (0.44, 0.51)	0.44 (0.40, 0.49)	0.36 (0.34, 0.38)	<0.001
Hips, knees, feet	0.75 (0.72, 0.77)	0.60 (0.57, 0.63)	0.61 (0.55, 0.66)	0.48 (0.45, 0.50)	<0.001
Abdomen	0.19 (0.17, 0.22)	0.11 (0.10, 0.14)	0.12 (0.09, 0.15)	0.09 (0.08, 0.11)	<0.001
Jaw or teeth	0.12 (0.11, 0.14)	0.10 (0.08, 0.12)	0.08 (0.06, 0.11)	0.08 (0.07, 0.09)	0.001
Migraine	0.28 (0.26, 0.31)	0.20 (0.17, 0.22)	0.21 (0.17, 0.25)	0.17 (0.15, 0.19)	<0.001

^a Categories not mutually exclusive.

Table 2. Weighted means or proportions (with 95% confidence intervals) of respondent demographic and clinical characteristics, according to presence of general and pain-related disability.

Variable	Both general and pain-related disability (Unweighted N=1,920)	General, but no pain-related disability (Unweighted N=1,523)	Pain-related, but not general disability (Unweighted N=620)	No disability (Unweighted N=2,811)	P
Age (years)	58 (57, 59)	59 (58, 60)	54 (53, 56)	52 (51, 53)	<0.001
Sex					
Male	0.43 (0.41, 0.46)	0.46 (0.42, 0.49)	0.36 (0.32, 0.41)	0.49 (0.47, 0.51)	<0.001
Female	0.57 (0.54, 0.59)	0.54 (0.51, 0.58)	0.64 (0.59, 0.68)	0.51 (0.49, 0.53)	<0.001
Race/ethnicity					
White, not Hispanic	0.71 (0.68, 0.73)	0.71 (0.67, 0.74)	0.74 (0.69, 0.78)	0.76 (0.74, 0.79)	0.002
Black, not Hispanic	0.13 (0.11, 0.15)	0.12 (0.10, 0.14)	0.09 (0.06, 0.12)	0.10 (0.08, 0.11)	0.012
Hispanic/Latino	0.11 (0.09, 0.13)	0.11 (0.09, 0.14)	0.13 (0.10, 0.17)	0.09 (0.08, 0.10)	0.034
Asian, not Hispanic	0.01 (0.01, 0.03)	0.02 (0.01, 0.04)	0.02 (0.01, 0.04)	0.02 (0.02, 0.03)	0.464
Other	0.04 (0.03, 0.05)	0.04 (0.03, 0.06)	0.02 (0.01, 0.04)	0.03 (0.02, 0.04)	0.040
Foreign-born	0.11 (0.10, 0.14)	0.11 (0.09, 0.14)	0.11 (0.08, 0.15)	0.09 (0.08, 0.11)	0.362
Insurance coverage					
Private	0.34 (0.32, 0.37)	0.40 (0.37, 0.43)	0.55 (0.50, 0.59)	0.64 (0.62, 0.66)	<0.001
Public	0.42 (0.39, 0.45)	0.39 (0.36, 0.42)	0.28 (0.24, 0.32)	0.19 (0.17, 0.21)	<0.001

Table 3. Multivariable multinomial logistic regression model, comparing pain-related but no general disability to both general and pain-related disability.

Variable	RRR	95% CI	P
Pain severity			
Mild/moderate	Ref.		
Severe	0.8	0.6, 0.98	0.037
Pain location ^a			
Back	0.6	0.5, 0.8	<0.001
Hands, arms, shoulders	0.7	0.6, 0.9	0.009
Hips, knees, feet	0.7	0.5, 0.97	0.031
Abdomen	0.7	0.5, 0.99	0.044
Jaw or teeth	0.7	0.5, 1.1	0.110
Migraine	0.7	0.5, 0.9	0.015
Age (years)	0.99	0.98, 0.999	0.029
Sex			
Male	Ref.		
Female	1.5	1.2, 2.0	0.001
Race/ethnicity			
White, not Hispanic	Ref.		
Black, not Hispanic	0.8	0.5, 1.2	0.239
Hispanic/Latino	1.5	1.0, 2.3	0.074
Asian, not Hispanic	2.1	0.9, 5.1	0.094
Other	0.6	0.3, 1.3	0.182
Foreign-born	0.6	0.4, 1.0	0.053
Insurance coverage			
Private	Ref.		
Public	0.6	0.4, 0.7	<0.001
Other	0.4	0.3, 0.6	<0.001
None	0.8	0.5, 1.3	0.362
Marital status			
Married	Ref.		
Living with partner	1.0	0.6, 1.5	0.862
Single	0.8	0.6, 1.0	0.114
Children in household			
None	Ref.		
One	1.1	0.7, 1.8	0.541
Two	1.6	1.01, 2.6	0.045
Three or more	1.2	0.7, 2.2	0.470
Body mass index			
Normal/underweight	Ref.		
Overweight	0.9	0.7, 1.3	0.591
Obese	0.8	0.6, 1.1	0.128
Current smoker	0.6	0.4, 0.8	0.001
Diabetes	0.6	0.4, 0.8	0.002

DISCUSSION

Among people with chronic pain, most people with disability are experiencing limitations related to pain problems. Assessment of disability without addressing pain interference has likely underestimated the disability burden in this population.

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