1. pain catastrophi* scale*
2. pain catastrophi* measure*
3. pain catastrophi* questionnaire*
4. catastrophization [MeSH terms]
5. pain measurement [MeSH terms]
6. pain NEAR/3 catastrophi*
7. #4 AND #5
8. #1 OR #2 OR #3 OR #6 OR #7

Suppl. Figure 1. Search strategy used to identify potentially relevant studies from the Cochrane Library.

Suppl. Table 1. Characteristics of studies included in the review and meta-analysis.

Study ID	First author	Year of publication	Study type	Language	Participant group	Sample size	Mean age	Sd age	M:F participants	Mean PCS score	Sd PCS score
3	Barke	2015	Psychometric	German	Chronic back pain	182	51	10.5	54:128	19.7	12.1
6	Iwaki	2012	Cross	Japanese	Chronic pain	160	51	16.4	48:112	33.9	10.2
7	Karstens	2015	Psychometric	German	Lower back pain	228	42	11	120:128	16.7	10.5
8	Kikuchi	2015	Cross	Japanese	Whiplash neck injury pain and/or low back pain	956	45	10.4	679:277	24	11.8
9	Kim	2013	Psychometric	Korean	Degenerative spinal disease	72	66	8.1	27:45	24.1	12.2
10	Kjogx	2014	Cross	Danish	Chronic headache	57	49	15.1	57:0	16.9	10.4
10	Kjogx	2014	Cross	Danish	Chronic headache	161	45	15.2	0:161	22.5	12
10	Kjogx	2014	Cross	Danish	Healthy participants	118	22	7.2	118:0	10.3	6.7

10	Kjogx	2014	Cross	Danish	Healthy participants	129	22	5.2	0:129	12.3	8.7
11	Koo	2015	Psychometric	Korean	Chronic pain	64	41	14.5	23:41	18.8	11.9
12	Kraljevic	2012	Cross	Croatian	Chronic pain	100	55	10	36:64	31	12.6
12	Kraljevic	2012	Cross	Croatian	Healthy participants (adult children)	100	30	10	50:50	21.8	12.2
12	Kraljevic	2012	Cross	Croatian	Healthy participants (spouse)	85	60	10	51:34	25.6	13.4
16	Lim	2006	Psychometric	Chinese	Chronic pain	120	/	/	50:70	31.9	11.1
17	Lopes	2015	Psychometric	Brazilian Portuguese	Acute low back pain	131	67	7.1	10:121	29.2	13.1
18	Man	2007	Case	Chinese	Chronic pain	45	/	/	15:30	33.7	12.1
19	Maric	2011	Cross	Croatian	Healthy participants 6th yr medical students	53	24	1.8	10:43	16.8	9.9
19	Maric	2011	Cross	Croatian	Healthy participants 1st yr medical students	137	19	1.7	47:90	19.2	7.9

19	Maric	2011	Cross	Croatian	Healthy participants 1st yr economics students	245	19	1.7	86:159	19.7	9.1
19	Maric	2011	Cross	Croatian	Healthy participants 5th yr economics students	86	23	1.7	22:64	19.8	10.1
20	Matsudaira	2014	Psychometric	Japanese	Low back pain	1786	49	/	900:886	24.6	10.9
21	Matsuoka	2010	Case	Japanese	Burning mouth syndrome	46	60	9.6	2:44	28.2	9.7
23	Meyer	2008	Psychometric	German	Low back pain	111	49	16	36:75	17.6	10.5
25	Mohd Din	2015	Psychometric	Malay	Healthy participants military	303	21	1.8	258:45	19.2	10.2
29	Morris	2012	Psychometric	Africaans	Fibromyalgia, Africaans speaker	41	/	/	/	37	11.4
29	Morris	2012	Psychometric	English South African	Fibromyalgia, English speaker	33	/	/	/	38.2	11.5

29	Morris	2012	Psychometric	Xhosa	Fibromyalgia, Xhosa speaker	19	/	/	/	34.2	8.5
30	Ning	2008	Psychometric	Cantonese	Chronic pain	224	42	10.3	120:104	36.3	10.9
35	Penhoat	2014	Cross	French	Rheumatoid arthritis	86	59	13.7	27:59	17	13.6
35	Penhoat	2014	Cross	French	Spondyloarthritis	54	43	10.1	37:17	20.8	12.1
37	Rodero	2010	Psychometric	Spanish	Fibromyalgia	205	50	9.7	19:186	32.4	12.8
38	Rodero	2012	Psychometric	Spanish	Fibromyalgia	250	52	8.5	11:239	24.3	13.6
40	Roelofs	2003	Psychometric	Dutch	Fibromyalgia	401	48	10.1	22:379	20.3	11.5
41	Roelofs	2002	Psychometric	Spanish	Healthy participants students	271	19	1.4	54:226	14.3	7.9
42	Rogulj	2014	Cross	Croatian	Burning mouth syndrome	30	66	9.2	5:25	28.4	15
43	Sehn	2012	Psychometric	Brazilian Portuguese	Chronic musculoskeletal pain	384	50	17.1	67:317	30.6	11.7
44	Severijns	2002	Cross	Dutch	Hip/knee pain	582	/	/	/	12.1	10.4
44	Severijns	2002	Cross	Dutch	Low back pain	754	/	/	/	12.2	10.4
44	Severijns	2002	Cross	Dutch	Neck/shoulder/high	880	/	/	/	12.3	10.3

					back pain							
					Elbow/wrist/hand							
44	Severijns	2002	Cross	Dutch	pain	480	/	/	/		13	10.8
44	Severijns	2002	Cross	Dutch	Ankle/foot pain	284	/	/	/		13.5	11
					Healthy participants,							
44	Severijns	2002	Cross	Dutch	no pain	1164	/	/	/		8.2	8
46	Suren	2014	Cross	Turkish	Preoperative patients	165		39	13.9	91:74	16.1	11.5
	Van											
48	Damme	2002	Psychometric	Dutch	Low back pain	162		42	11.6	63:99	22	9.3
	Van											
48	Damme	2002	Psychometric	Dutch	Fibromyalgia	100		45	9.1	20:80	24.8	12.2
	Van				Healthy participants							
48	Damme	2002	Psychometric	Dutch	students	550		19	1.4	147:403	16.6	7.8
				Brazilian	Chronic myofascial							
49	Volz	2013	Series	Portuguese	pain syndrome	24		48	12.6	0:24	34.2	9.2
50	Wong	2015	Series	Chinese	Chronic pain	226		45	9.2	77:149	26.7	14.7
51	Wong	2011	Psychometric	Chinese	Chronic	208		41	11.3	95:113	29	14.3

					musculoskeletal pain							
54	Yap	2008	Psychometric	Chinese	Chronic nonmalignant pain	130	/	/		54:76	29.1	5.5
56	Park	2015	Cross	Korean	Temporomandibular disorder	155	39	15.2		44:111	17.3	12.6
65	Adachi	2014	Cross-sectional study	Japanese	Chronic pain	176	64	15.1		80:96	26.5	12.2
66	Aerts	2015	Cohort study	English	Secondary provoked vestibulodynia	175	28	5.5		0:175	26.7	10.7
66	Aerts	2015	Cohort study	English	Primary provoked vestibulodynia	94	26	5.5		0:94	27.6	10
67	Akhter	2014	Other	English	Healthy participants	28	35	9.5		20:8	15.4	11.4
69	Alappattu	2015	Cross	English	Pelvic pain	14	40	/		0:14	23.1	12.4
69	Alappattu	2015	Cross	English	Healthy participants	28	30	/		0:28	9.2	9.7
70	Albert	2015	Cohort study	French	Musculoskeletal disorder	43	41	12		20:23	19	12
71	Al-Kaisy	2015	Retrospective	English	Chronic neuropathic	11	46	12		5:6	33	11

			cohort stud		pain of upper or lower limbs						
75	Archer	2015	Cohort	English	Lower extremity trauma	134	45	15	70:64	14	13
77	Baranoff	2015	Cohort RCT secondary data	English	Anterior cruciate ligament reconstruction	44	27	9.4	27:17	11.3	9.8
78	Barnhoorn	2015	analysis	Dutch	Complex Regional Pain Syndrome type 1	35	43	16.9	6:29	22.8	11.7
78	Barnhoorn	2015	RCT secondary data analysis	Dutch	Complex Regional Pain Syndrome type 1	21	46	16.5	5:16	24.9	14.8
81	Beck	2014	Series	English	Orthodontic elastomeric separators	20	24	3.4	9:11	14.6	7.6
86	Beneciuk	2013	Series	English	Low back pain	146	41	13.5	57:89	16.8	12.1

87	Beneciuk	2012	Secondary analysis	English	Acute and subacute low back pain	108	37	14.5	39:69	16.3	11.2
90	Bhaskaracharya	2015	Cross	English	Pain-free participants with a history of chronic trigeminal neuropathic pain	12	64	9.5	0:12	15.9	13.3
90	Bhaskaracharya	2015	Cross	English	Healthy participants control group	15	62	6.9	4:11	7.1	11.7
91	Billis	2013	Cross	English	Non-specific low back pain	106	36	15.9	43:63	19.4	7.9
92	Block	2008	Cross	English	Chronic pain	43	44	12.7	17:26	23.9	11.8
94	Bond	2015	Series	English	Migraine and obesity	105	38	8	0:105	22.7	10.8
96	Borg	2012	Cross	Dutch	Dyspareunia	33	27	6.8	0:33	15.3	7.3
96	Borg	2012	Cross	Dutch	Vaginismus	35	28	5.8	0:35	22	9.3
96	Borg	2012	Cross	Dutch	Healthy participants without sexual complaints	54	27	6.7	0:54	17.4	9.1

98	Bostick	2013	Series	English	Whiplash associated disorder	72	39	14	15:57	24.7	9.4
99	Bot	2014	Psychometric	English	Upper extremity diagnoses	164	51	15	75:89	5.3	6.9
101	Bot	2013	Series	English	Post patients hand surgery nonresponders to later survey	69	48	16	37:32	3.2	4.9
101	Bot	2013	Series	English	Post patients hand surgery responders to later survey	35	56	17	10:25	5.6	7.2
102	Bot	2014	Cross	English	Painful conditions of the upper extremity	130	52	16	62:68	8.7	9.4
103	Bot	2013	Cohort	English	Arm, shoulder and hand disability	1204	53	16	511:693	6.8	8.4
108	Brandini	2011	Case	English	Temperomandibular disorder	15	31	10.7	0:15	12.7	10.6

108	Brandini	2011	Case	English	Healthy participants	14	29	5	0:14	11	8.4
114	Bryson	2014	Cross	English	Chronic pain and insomnia	111	44	10.9	35:76	30.6	14.7
116	Buitenhuis	2008	Series	English	Postwhiplash syndrome	140	36	12	45:95	12.9	11.3
119	Calley	2010	Cross	English	Low back pain	80	47	11.5	34:46	13.9	10.1
120	Campbell	2010	Case	English	Temperomandibular joint disorder	48	34	12	7:41	14.3	9.2
120	Campbell	2010	Case	English	Arthritis	43	55	9.7	16:27	15.4	12
120	Campbell	2010	Case	English	Healthy participants	84	34	14.6	51:33	9.5	9
123	Carroll	2011	Case	English	Palliative care patients on opioid treatment	20	58	10	9:11	19.8	13.3
125	Carvalho	2014	Series	English	Labour and successful vaginal delivery	39	34	5	0:39	16	9
128	Casey	2015	Cohort	English	Whiplash injury	246	43	14.6	54:192	16.1	13.2

130	Cebolla	2013	Psychometric	Spanish	Fibromyalgia	251		52		8.4	10:241	24.3	13.6
135	Chatkoff	2015	Cross	English	Muskuloskeletal pain, adaptive copers	26	/		/		/	20.3	13.9
135	Chatkoff	2015	Cross	English	Muskuloskeletal pain, dysfunctional	15	/		/		/	27.8	12.8
135	Chatkoff	2015	Cross	English	Muskuloskeletal pain, dysfunctional	28	/		/		/	32.5	10.1
138	Chibnall	2005	Psychometric	English	Low back injury, compensation claimants	1475	/		/		919:556	25.4	12.1
140	Choobmasjedi	2012	Cross	Arabic	Healthy volunteers pregnant	300		28		5.9	0:300	29.3	11.8
142	Chung	2012	Series	Chinese	Major depressive disorder	91		48		9.5	18:73	23.7	13.1
143	Chung	2015	Other	Chinese	Major depressive disorder	137		50		9.6	28:109	24.6	11.3
149	Cosic	2013	Cohort	Croatian	Parous	69		30	/		0:69	16.1	13.2

149	Cosic	2013	Cohort	Croatian	Nulliparous	80	24	/	0:80	23.9	12.6
151	Curran	2010	Series	English	Provoked vestibuladynia	8	30	10.6	0:8	24.8	7.9
153	Darchuk	2010	Series	English	Non-cancer pain, geriatric patients, older	78	67	5.6	28:50	25.6	13.7
153	Darchuk	2010	Series	English	Non-cancer pain, geriatric patients, middle aged	230	48	5.3	43:187	26.2	12.1
153	Darchuk	2010	Series	English	Non-cancer pain, geriatric patients, younger	141	30	6.2	25:116	27.3	12.6
154	Darnall	2012	Cross	English	Chronic pain, incarcerated women	159	39	11.5	0:159	27.1	11.8
155	Darnall	2014	Series	English	Chronic pain outpatients	57	50	12.2	16:41	26.1	10.8
159	Davidson	2008	Psychometric	English	Chronic pain	126	50	14.2	40:86	22.4	13.2

161	Davis	2015	Series	English	Provoked vestibulodynia	222		31	10.9	0:222	28.2	10.8
165	de Boer	2014	Cross	Dutch	Chronic pain, outpatients	89		51	15.5	34:55	22.4	13
172	Demoulin	2010	Psychometric	Dutch	Chronic low back pain	99		42	9.4	60:39	22.2	10.3
173	D'Eon	2004	Psychometric	English	Healthy participants, students, men	229		21	3.7	229:0	20.6	9.6
173	D'Eon	2004	Psychometric	English	Healthy participants, students, women	276		20	4.1	0:276	26.4	9.4
176	Dimitriadis	2014	Psychometric	Greek	Chronic neck pain	45		36	14.5	13:32	21.4	12
179	Dixon	2004	Other experimental	English	Healthy participants, college students, men	91	/	/		91:0	16.6	7.9
179	Dixon	2004	Other experimental	English	Healthy participants, college students, women	112	/	/		0:112	19.2	9.7
185	Durosaro	2008	Series	English	Erythromelalgia	8		43	16.8	1:7	29.9	6.8

191	Fabian	2011	Cross	English	Healthy participants, college students, men	24	/		/		24:0	13.8	7.8
191	Fabian	2011	Cross	English	Healthy participants, college students	62	/		/		24:38	15.9	8.2
193	Feldman	2015	Cross	English	Patients undergoing total knee arthroplasty	316		66		8.7	130:186	12	10.7
195	Fernandes	2002	Psychometric	Norwegian	Non-specific low back pain	90		48		11.7	38:52	13.6	9.2
197	Fitzcharles	2014	Cross	English	Fibromyalgia	246		48		10.4	22:224	29.3	12.2
199	Flink	2009	Series	Swedish	Prepartum	82	/		/		0:82	19.6	9.5
200	Forsythe	2008	Series	English	Preoperative patients before total knee arthroplasty	55		69		8.4	20:35	9.8	8.7
201	Fritz	2015	Rct	English	Recent-onset low back pain	112		37		10.2	59:53	13.8	10.1
201	Fritz	2015	Rct	English	Recent-onset low	108		38		10.4	46:62	13.9	11

					back pain						
202	Gagnon	2013	Series	English	Chronic pain	101	44	8.2	64:37	28	15
203	Gandhi	2010	Psychometric	English	Hip osteoarthritis	100	63	10.6	50:50	16.6	13.7
203	Gandhi	2010	Psychometric	English	Knee osteoarthritis	100	67	8.4	31:69	17.3	13.3
205	Garcia-Campayo	2010	Psychometric	Spanish	Fibromyalgia	250	45	7.2	21:229	30.8	11.7
206	Herbst	2010	Series	English	Adiposis dolorosa	10	48	3.6	4:6	28.2	3.5
207	Gautier	2011	Cross	Other	Chronic pain, men	26	41	8	26:0	23.7	9.4
207	Gautier	2011	Cross	Other	Chronic pain, women	24	39	10.6	0:24	27.1	13.1
209	George	2011	Psychometric	English	Low back pain	80	47	11.5	34:46	14.1	10.1
212	Geva	2013	Case	English	Healthy participants triathletes	19	40	12.1	11:8	16.5	9
212	Geva	2013	Case	English	Healthy participants controls	17	37	11.1	7:10	20.8	12
214	Gilliam	2010	Cross	English	Healthy participants	97	25	2.8	41:56	19.5	8.8
215	Goodin	2011	Other	English	Healthy participants, college students,	86	/	/	/	13.2	8.6

215	Goodin	2011	Other	English	Caucasian American Healthy participants, college students, African American	28	/	/	/	15.4	11.5
215	Goodin	2011	Other	English	Healthy participants, college students, Asian American	35	/	/	/	15.9	9.9
219	Grotle	2012	Psychometric	Norwegian	Pelvic girdle pain in pregnancy and after delivery	87	34	5.3	0:87	13.5	8.7
223	Hayashi	2015	Series	Japanese	Neck-shoulder pain	87	51	16.4	35:52	32.1	10.6
223	Hayashi	2015	Series	Japanese	Headache	62	51	18.3	14:48	33.7	10.3
223	Hayashi	2015	Series	Japanese	Low back/lower limb pain	142	57	15	58:84	33.7	10.1
224	Hegarty	2014	Cross	English	Post-enucleation, persistent pain	8	61	18.1	6:2	3.6	6.8
224	Hegarty	2014	Cross	English	Post-enucleation, no	9	61	18.2	3:6	6.8	15.9

					pain						
					Low back pain, active duty US navy						
228	Hiebert	2012	Series	English	personnel	253	32	7.9	188:65	11.1	9.9
					Patients three weeks						
229	Hirakawa	2014	Series	Japanese	post surgery	90	76	6.3	20:70	13	9.3
					Healthy participants, undergraduate						
230	Hirsch	2008	Psychometric	English	students	100	21	1.7	44:66	18.6	9.2
					Chronic pain, never						
235	Hooten	2009	Cohort	English	smoked, male	134	47	13.6	134:0	23.1	12.3
					Chronic pain, never						
235	Hooten	2009	Cohort	English	smoked, female	500	46	4.8	0:500	24.8	13
					Chronic pain, former						
235	Hooten	2009	Cohort	English	smoker, female	203	50	12.9	0:203	26	11.9
					Chronic pain, former						
235	Hooten	2009	Cohort	English	smoker, male	91	54	13.5	91:0	26.2	11.1

235	Hooten	2009	Cohort	English	Chronic pain, smoker, female	225		43	10.9	0:225	27.6	13.2
235	Hooten	2009	Cohort	English	Chronic pain, smoker, male	88		42	12	88:0	31.5	11
238	Horsham	2013	Cross	English	Experienced trauma but no PTSD	91	/	/	/		13.6	7.8
238	Horsham	2013	Cross	English	Control (no experience of trauma, no PTSD)	71	/	/	/		8.6	4.3
238	Horsham	2013	Cross	English	Ptsd	87	/	/	/		25.3	8
241	Kadimpati	2015	Cross	English	Chronic pain	595		47	13.7	173:422	26.7	11.2
242	Kao	2012	Cross	Other	Postmenapausal dyspareunia sufferers	182		57	5.4	0:182	16.1	13.2
244	Karayannis	2013	Cross	English	Low back pain	19		43	13.2	6:14	14.4	8.2
246	Karsdorp	2009	Cross	Dutch	Fibromyalgia	409		48	10.2	21:388	20.3	11.4
252	Khan	2012	Series	English	Cardiac surgery, preoperative	64		66	11.1	54:10	11.7	11.1

253	Kim	2015	Psychometric	Korean	Degenerative lumbar spinal stenosis, men	35	64	12.8	35:0	19.9	13.3
253	Kim	2015	Psychometric	Korean	Degenerative lumbar spinal stenosis, women	60	66	9.6	0:60	27.9	11.5
254	Kim	2014	Cross	Korean	Lumbar spinal stenosis	155	65	12.4	57:98	24.9	12.8
256	Kleiman	2011	Psychometric	English	Patients scheduled for major surgery	444	46	10.2	174:270	16.5	10.5
257	Koele	2014	Series	Dutch	Chronic widespread musculoskeletal pain	165	44	12.9	22:143	17.5	9.4
260	Kristjansdottir	2013	Rct	Norwegian	Chronic widespread pain	66	44	11.2	0:66	20.8	9.5
260	Kristjansdottir	2013	Rct	Norwegian	Chronic widespread pain	69	45	11.1	0:69	21.2	10.3
263	La Touche	2014	Cross	Spanish	Chronic craniofacial pain	192	46	13.1	60:132	23.9	8.9

264	Lame	2008	Psychometric	Dutch	Chronic pain	50	55	13.1	20:30	30.2	11.7
265	Lariviere	2010	Cohort	English	Chronic low back pain, women	13	35	9	0:13	15	13
265	Lariviere	2010	Cohort	English	Chronic low back pain, men	14	43	10	14:0	26	10
268	Lee	2008	Psychometric	English	Healthy participants	189	27	8	99:90	11.4	7.4
269	Lemieux	2013	Cross	French	Dyspareunia	179	31	10	0:179	28.6	9.7
270	Leonard	2013	Cross	English	Chronic musculoskeletal pain	57	56	15.1	16:41	25.7	14.2
271	Lin	2013	Other	Chinese	Healthy participants	15	26	11.2	6:9	19.2	8.1
272	Lindenhovius	2008	Rct	English	Lateral elbow pain, placedo, lidocaine only	30	51	10	12:18	20.8	8.5
272	Lindenhovius	2008	Rct	English	Lateral elbow pain, dexamethasone	27	50	8	10:17	21.8	10.5
274	London	2014	Cohort	English	Atraumatic hand or wrist condition	256	56	12.6	75:181	11.8	8.9

275	Louw	2015	Series	English	Patients scheduled for lumbar surgery	10	47	16.2	3:7	25.4	13.5
280	Lukkahatai	2013	Cross	English	Fibromyalgia patients with fatigue	9	41	7.3	0:9	17	9.8
282	Theunissen	2014	Psychometric	Dutch	Preoperative hysterectomy	192	46	7.8	0:192	13.1	8.5
282	Theunissen	2014	Psychometric	Dutch	Patients undergoing day surgery, preoperative	75	53	15.3	31:44	14	8.8
282	Theunissen	2014	Psychometric	Dutch	Mixed inpatient	1490	56	15.5	702:788	16.5	12.7
283	Martel	2013	Series	English	Chronic pain, women	35	50	8.9	0:35	24.3	13.6
283	Martel	2013	Series	English	Chronic pain, men	20	49	10.5	20:0	24.5	10.4
284	Martin	2010	Cross	English	Chronic pain patients pre-surgery	208	47	9.7	83:124	19.3	7.9
285	Martinez	2012	Cross	Spanish	Healthy participants	200	40	11.3	0:200	13.7	10
288	Masselin-Dubois	2013	Cohort	French	Breast cancer patients pre-surgery	100	55	12.1	0:100	14.6	11.4

288	Masselin-Dubois	2013	Cohort	French	Total knee arthroplasty patients pre-surgery	89	69	8.9	35:65	19.4	11.2
290	McLoughlin	2011	Cross	English	Women with fibromyalgia	39	43	12.1	0:39	13.9	7.7
290	McLoughlin	2011	Cross	English	Women healthy controls	40	41	9.1	0:40	8.5	7
291	McWilliams	2007	Psychometric	English	Healthy participants, university students	278	20	4	145:136	15.7	9
292	McWilliams	2015	Psychometric	English	Chronic pain	201	47	10.3	74:127	25.8	12
293	Meeus	2010	Rct	Dutch	Chronic fatigue syndrome and chronic widespread pain, experimental group	24	38	10.6	2:22	18.2	6.9
293	Meeus	2010	Rct	Dutch	Chronic fatigue	24	42	10.2	6:18	21.8	8.9

					syndrome and chronic widespread pain, control group						
294	Meyer	2009	Cross	German	Chronic low back pain	78	50	17	26:52	19.2	10.3
295	Michael	2004	Series	English	Chronic pain	86	42	10.4	46:40	27	13.3
298	Monticone	2014	Rct	Italian	Chronic low back pain, control group	10	57	14.4	6:4	23	4
298	Monticone	2014	Rct	Italian	Chronic low back pain, experimental group	10	59	16.4	3:7	25	6
300	Monticone	2014	Rct	Italian	Spondylolisthesis and/or lumbar spinal stenosis, experimental group	65	59	11.8	21:44	24.8	9.3
300	Monticone	2014	Rct	Italian	Spondylolisthesis and/or lumbar spinal	65	56	14.2	30:35	27	8.7

					stenosis, control group						
301	Monticone	2015	Psychometric	Italian	Chronic neck pain	118	48	15.9	40:78	18.5	9
302	Moore	2013	Cross	English	Healthy participants, male	70	23	6.6	70:0	18	8.6
302	Moore	2013	Cross	English	Healthy participants, female	119	24	5.9	0:119	20.5	8.3
303	Moseley	2004	Series	English	Chronic low back pain, group 2	46	35	7	16:30	16	5
303	Moseley	2004	Series	English	Chronic low back pain, group 1	75	36	6	38:37	16	6
304	Moseley	2004	Rct	English	Chronic low back pain, experimental group	31	42	10	13:18	19	6
304	Moseley	2004	Rct	English	Chronic low back pain, control group	27	45	6	12:15	20	6
307	Moustafa	2015	Rct	English	Fibromyalgia and	60	51	7	33:27	42.5	3

					C1-2 joint disfunction						
307	Moustafa	2015	Rct	English	Fibromyalgia and C1-2 joint disfunction	60	54	8	35:25	43.8	3.6
308	Munoz	2005	Cross	Other	Chronic pain	149	59	15	42:107	20.9	16.3
309	Nakamura	2014	Cross	Japanese	Chronic pain, receiving folk remedy	108	46	13.8	33:75	23.2	9.9
309	Nakamura	2014	Cross	Japanese	Chronic pain, seen at medical facility	213	55	14.8	84:129	26.5	10.3
310	Naugle	2014	Other	English	Healthy participants, young adults, men	12	/	/	12:0	5.2	4.1
310	Naugle	2014	Other	English	Healthy participants, young adults, women	15	/	/	0:15	9.3	4.1
312	Nickel	2010	Case	English	Interstitial cystitis/painful	207	50	15.1	0:207	21.3	12.6

					bladder syndrome						
312	Nickel	2010	Case	English	Healthy participants, control group	117	48	13.5	0:117	9.9	9.2
314	Nieto	2011	Cross	Spanish	Whiplash associated disorders	147	34	10.4	42:105	17.9	9.9
316	Nishigami	2015	Case	Japanese	Chronic low back pain, shrunken perceived body image	12	62	12.4	4:8	19.6	11.4
316	Nishigami	2015	Case	Japanese	Chronic low back pain, expanded perceived body image	12	57	16.7	4:8	21.4	6.5
316	Nishigami	2015	Case	Japanese	Chronic low back pain, normal perceived body image	18	65	11.2	8:10	21.6	7

317	Novak	2011	Cross	English	Upper-extremity nerve injury	158	41	16	105:53	16	15
318	Novak	2012	Cross	English	Brachial plexus nerve injury	61	40	17	41:20	15	14
319	Novak	2013	Psychometric	English	Upper extremity nerve injury	157	41	16	104:53	16	15
321	Ogunlana	2015	Cross	English	Nonspecific low back pain	275	52	13.4	110:165	24	10.4
325	Osman	2000	Psychometric	English	Pain outpatients, men	26	31	8.7	26:0	19.6	11.4
325	Osman	2000	Psychometric	English	Pain outpatients, women	34	33	10.7	0:34	24.3	8.8
325	Osman	2000	Psychometric	English	Healthy participants, men	85	36	10.8	85:0	11.1	8
325	Osman	2000	Psychometric	English	Healthy participants, women	130	35	12.2	0:130	15.7	10.9
326	Osman	1997	Psychometric	English	Healthy participants, students, study 2,	59	20	2.5	59:0	10.9	7.8

					men							
					Healthy participants, students, study 3,							
326	Osman	1997	Psychometric	English	women	86	/	/		0:86	11.7	8.4
					Healthy participants, students, study 1,							
326	Osman	1997	Psychometric	English	men	93	/	/		93:0	11.9	8
					Healthy participants, students, study 1,							
326	Osman	1997	Psychometric	English	women	195	/	/		0:195	14.6	9.6
					Healthy participants, students, study 2,							
326	Osman	1997	Psychometric	English	women	161		20	3.7	0:161	15	9.5
					Healthy participants, students, study 3,							
326	Osman	1997	Psychometric	English	men	86	/	/		86:0	18.4	9.6
327	Papaioann	2009	Series	Greek	Degenerative disc	61		51	14.5	25:36	21.7	13.2

	ou				disease						
328	Parr	2012	Psychometric	English	Healthy participants	126	24	9.8	51:75	9.8	7.8
330	Pavlin	2005	Series	English	Anterior cruciate ligament injury	48	31	1.2	27:21	14.4	8.3
331	Pearson	2009	Cross	English	Whiplash-associated disorder	14	37	10.8	8:6	17	14.4
333	Philips	2014	Cross	English	HIV-associated sensory polyneuropathy	28	51	8.4	25:3	23.7	12.6
333	Philips	2014	Cross	English	HIV-positive but with no HIV-associated sensory polyneuropathy	38	48	8.9	32:6	14.1	11.8
334	Pincus	2008	Psychometric	English	Non-cancer chronic pain	243	44	12	110:133	29.3	12.3
335	Plazier	2015	Series	Other	Fibromyalgia	11	42	8.3	0:11	20.6	8.8
337	Prugh	2012	Series	English	Throwing athletes	3	21	2.5	3:0	5	7

					with elbow injuries						
					Vulvar vestibulitis						
338	Pukall	2007	Series	English	syndrome	8	26	5.7	0:8	18.1	6.9
					Whiplash associated						
339	Raak	2006	Cross	Swedish	disorder	17	51	11.3	1:16	19.9	7.8
339	Raak	2006	Cross	Swedish	Healthy participants	18	45	10.2	1:17	13	5.6
					Chronic peripheral						
340	Radat	2013	Cohort	French	neuropathic pain	182	60	13.8	87:95	28	13
341	Reyahin	2014	Psychometric	English	Knee osteoarthritis	212	65	10.1	49:163	6.6	7
					Patients scheduled						
					for knee arthroplasty,						
342	Riddle	2011	Nrct	English	control group	45	61	9.9	12:33	25.8	11.1
					Patients scheduled						
					for knee arthroplasty,						
342	Riddle	2011	Nrct	English	experimental group	18	64	11.5	6:12	29.3	8.9
					Pain, single discrete						
343	Ring	2005	Cross	English	pain complaint	56	55	15	22:34	14	11.3

343	Ring	2005	Cross	English	Pain, vague diffuse idiopathic arm pain	51	41	15	14:37	20.4	11.7
344	Rivest	2010	Cross	English	Whiplash associated disorder	37	35	12.2	16:21	16.4	14.2
346	Robles	2012	Series	English	Healthy participants	76	25	5.2	27:49	14.4	9.8
347	Rodero	2008	Series	Spanish	Fibromyalgia	8	/	/	1:7	25.3	10
348	Rodero	2010	Cross	Spanish	Fibromyalgia, under 2 years chronicity	46	47	9.8	/	30.9	14.3
348	Rodero	2010	Cross	Spanish	Fibromyalgia, 2-4 years chronicity	59	48	11	/	33.1	11.9
348	Rodero	2010	Cross	Spanish	Fibromyalgia, more than 4 years chronicity	223	50	10.5	/	33.1	11.6
349	Roh	2014	Series	Korean	Patients post-surgery distal radius fractures	121	53	14	54:67	22	9
350	Roh	2015	Series	Korean	Patients with surgically treated	93	45	12	55:48	23	8

					hand fractures						
					Chronic pain of trunk						
351	Rosenberg	2015	Series	English	and/or limbs	386	56	14.5	156:230	30.2	12.1
					Patients pre-surgery,						
					total knee						
353	Roth	2007	Series	English	arthroplasty	63	70	8.8	29:34	7.1	7.3
					Chronic						
	Ruiz-				musculoskeletal pain,						
355	Parraga	2014	Cross	Spanish	non-trauma-exposed	117	43	11.7	36:81	20.5	6.5
					Chronic						
					musculoskeletal pain,						
					trauma-exposed						
					without post						
	Ruiz-				traumatic stress						
355	Parraga	2014	Cross	Spanish	symptoms	119	44	11.2	36:83	21	6.9
	Ruiz-				Chronic						
355	Parraga	2014	Cross	Spanish	musculoskeletal pain,	110	47	12.5	30:80	31.9	10.3

					trauma-exposed with post traumatic stress symtoms							
356	Ruschewe yh	2011	Cross	German	Healthy participants, younger group	88	27	4.8	29:59	15.5	8.8
356	Ruschewe yh	2011	Cross	German	Healthy participants, older group	46	60	5.2	20:26	20.2	11.2
357	Sanchez	2011	Cross	Spanish	Fibromyalgia	74	47	8.1	4:70	25.4	11.8
358	Sansone	2014	Cross	English	Primary care patients	239	46	15	88:151	13.2	13.1
366	Scott	2014	Series	English	Whiplash injury, occupationally disabled	148	37	9.2	/	22.3	10.8
367	Selvarajah	2014	Cross	English	Diabetic neuropathy	142	61	11.2	80:62	18.7	9
373	Sterling	2008	Cross	English	Whiplash injury	30	38	11.5	7:23	18.8	12.7
373	Sterling	2008	Cross	English	Healthy participants	30	30	8.8	6:24	12.2	5.1
376	Sullivan	2005	Cross	English	Post-herpetic neuralgia	12	70	/	4:8	20.7	9.2

376	Sullivan	2005	Cross	English	Diabetic neuropathy	19	57	/		15:4	25.5	11.7
376	Sullivan	2005	Cross	English	Post-surgical/post-traumatic pain	49	47	/		22:27	26.2	11.9
380	Sullivan	2002	Cross	English	Whiplash injury	65	35		7.1	25:40	32.2	10.9
381	Sullivan	2002	Cross	English	Chronic pain, chronicity less than 2 years	44	36		7.5	/	29.1	11.3
381	Sullivan	2002	Cross	English	Chronic pain, chronicity more than 4 years	51	39		8.3	/	31.3	10.7
381	Sullivan	2002	Cross	English	Chronic pain, chronicity 2-4 years	55	34		9.2	/	31.9	11.3
382	Sullivan	2000	Other	English	Healthy participants, college students, men	53	/	/		53:0	16.6	7.7
382	Sullivan	2000	Other	English	Healthy participants, college students, women	55	/	/		0:55	20.5	8.9

383	Sullivan	2000	Other	English	Healthy participants, college students, men	38	/		/		38:0	17.6	10.3
383	Sullivan	2000	Other	English	Healthy participants, college students, women	42	/		/		0:42	26.6	10.4
384	Sullivan	2008	Rct	English	Post-herpetic, diabetic, or post-traumatic neuralgia	22		52		16.3	11:10	24.2	10.8
384	Sullivan	2008	Rct	English	Post-herpetic, diabetic, or post-traumatic neuralgia	24		55		12.6	15:9	25.2	11.4
385	Sullivan	1998	Cross	English	Soft-tissue injuries to the neck, shoulders or back following work or motor vehicle accidents	86		36		7.8	27:59	28	12.8
388	Swinkels-	2006	Series	Dutch	Acute lower back	93		45		11.5	45:48	18.8	12

	Meewisse				pain							
391	Tetsunaga	2015	Series	Japanese	Intractable chronic pain, adaptive group	37		56	14	15:22	33.7	6.6
391	Tetsunaga	2015	Series	Japanese	Intractable chronic pain, dropout group	16		50	15	5:11	37.5	6.8
392	Teunis	2015	Series	English	After distal radius fracture surgery	116		55	14	31:85	17	5.9
393	Thorn	2004	Other	English	Healthy participants, students, men	90	/		/	90:0	15.3	9.8
393	Thorn	2004	Other	English	Healthy participants, students, women	129	/		/	0:129	21.9	10.4
394	Tomkins-Lane	2015	Series pilot	English	Lumbar spinal stenosis	10		68	6.7	4:6	7.9	5.7
395	Torres	2015	Rct	Spanish	Fibromyalgia, experimental group	24		53	10.3	5:19	23.5	13.5
395	Torres	2015	Rct	Spanish	Fibromyalgia, control group	24		53	7.7	4:20	28.3	12.3

396	Touche	2015	Cohort	Spanish	Headache attributed to temporomandibular disorder, mild neck disability	42	41	12.9	25:17	15.8	4
396	Touche	2015	Cohort	Spanish	Headache attributed to temporomandibular disorder, moderate neck disability	41	44	10.9	15:26	17.1	3.8
396	Touche	2015	Cohort	Spanish	Healthy participants	39	41	10	13:26	5.5	1.8
398	Trompetter	2015	Rct	Dutch	Chronic pain	79	52	11.8	19:60	17.6	10.2
398	Trompetter	2015	Rct	Dutch	Chronic pain	82	53	13.3	19:63	18.6	9.5
398	Trompetter	2015	Rct	Dutch	Chronic pain	77	53	12	19:58	19.1	9.6
399	Turner	2013	Cross	English	Rheumatoid arthritis	32	55	15.7	8:24	21	11
399	Turner	2013	Cross	English	Healthy participants	28	47	11.8	7:21	8	8
400	Vaisy	2015	Cross	German	Low back pain	20	33	9.6	19:11	13.9	8.9

401	van Damme	2014	Cross	English	Persistent non-specific low back pain, good performers on muscle endurance task	120	42	8.1	/		15.9	9.3
401	van Damme	2014	Cross	English	Persistent non-specific low back pain, underperformers on muscle endurance task	212	42	8.1	/		18.5	9.8
404	van Ittersum	2011	Series	Dutch	Fibromyalgia	41	/	/		3:38	15.2	11.4
405	van Ittersum	2014	Rct	Dutch	Fibromyalgia	52	46	9.8		4:48	23	12.1
405	van	2014	Rct	Dutch	Fibromyalgia	53	48	9.1		3:50	24	11.9

	Ittersum										
407	Vancleef	2006	Cross	Dutch	Healthy participants, university local community	48	22	4.4	12:36	14.2	7.8
410	Vincent	2014	Rct	English	Obese adults with chronic low back pain	17	69	7.3	5:12	11.5	12.6
410	Vincent	2014	Rct	English	Obese adults with chronic low back pain	14	68	6.4	5:9	12.5	11.7
410	Vincent	2014	Rct	English	Obese adults with chronic low back pain	18	69	7.1	6:12	13.2	12.7
413	Vowles	2013	Cross	English	Chronic pain	334	46	11.4	126:208	25.3	17.3
414	Vranceanu	2014	Series	English	One to two months after muskuloskeletal trauma surgery	136	48	17.3	63:73	19.1	8.7

415	Vranceanu	2015	Rct	English	Musculoskeletal trauma within last 1-2 months, experimental group	24	/	/	/		14.8	9.9
415	Vranceanu	2015	Rct	English	Musculoskeletal trauma within last 1-2 months, control group	10	/	/	/		15.7	11.2
418	Walker	2014	Cross	English	Spinal pain	183		55	14.5	116:67	15.1	10.6
420	Walton	2013	Psychometric	English	Patients with work-related pain conditions	235		37	10	88:147	21.7	10.9
421	Watson	2008	Cross	English	Isolated, discrete upper-extremity condition	134		50	13	83:51	19.3	7.3
423	Witvrouw	2009	Series	Dutch	Preoperative, total knee arthroplasty	43		61	/	17:26	20.2	9.7

424	Wong	2013	Cross	Chinese	Chronic pain	224	46	9.9	100:124	24.6	14.3
425	Zhao	2012	Other	English	Healthy participants, experimental group	13	30	4.9	6:7	8.2	6
425	Zhao	2012	Other	English	Healthy participants, control group	13	30	3.4	6:7	12.6	13.6

Suppl. Table 2. Reasons for papers not included in the database at title/abstract and full text stages.

Stage of screening	Number of papers excluded	Reason for exclusion
Abstract and title screening (total of 3,292 papers excluded at this stage)	1079	Not enough info in title/abstract to judge inclusion and exclusion criteria
	639	Not relevant (not a study/no use of PCS. Includes errata)
	437	PCS not used
	401	Conference or meeting abstract, not a paper
	355	Relevant review/meta-analysis/editorial comment/letter/theoretical paper
	210	Use of PCS, but for children/adolescents (under 18yrs); or child study (may or may not use PCS), or parent version of PCS
	100	Study protocol or dissertation abstract
	34	Data only (full paper coded separately)
	12	Animal study

	10	Conference proceedings/posters
	7	Book chapter or book review
	3	Uses 4-question version or another modified version of PCS
	2	Uses spouse version only (PCS-S)
	2	Uses a modified PCS
	1	Guidelines (not a study)
Full text screening (total of 209 papers excluded at this stage)	52	PCS scores not reported
	49	Meeting abstract
	22	Insufficient data
	22	Foreign language paper
	13	All or some participants were under 18 years old
	11	Duplicates data from another (included) study
	10	Modified version of PCS used
	9	Not a study (e.g. correction to a publication; figure; protocol only)

	6	No baseline
	5	Not peer reviewed
	4	Single case study
	3	Misuse of PCS (for example changes to instructions)
	2	Literature/systematic review
	1	Paper not retrieved
Data cleaning	1	Double counting of data (paper reporting data duplicating that of another paper)
	1	Implausible data (contains data above or below possible scores)
	1	Data double-counted