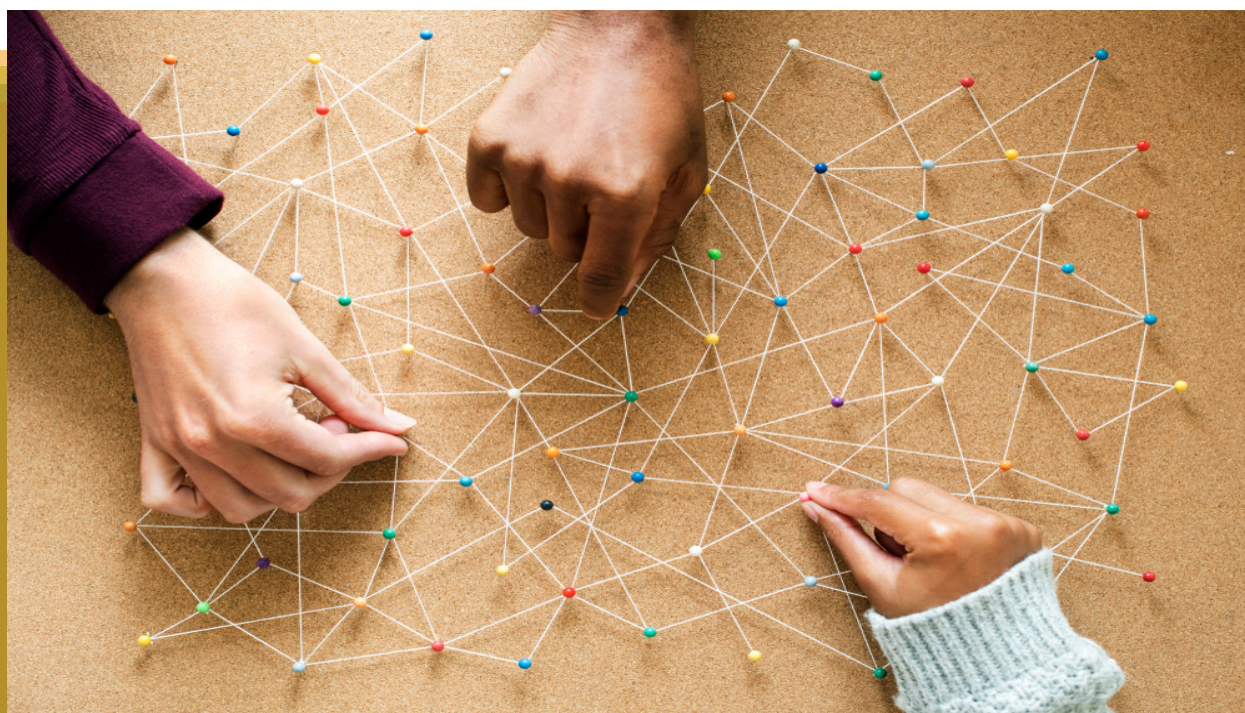


SUPPLEMENT 1: METHODS

MULTIMODAL MANAGEMENT OF CHRONIC PAIN IN BELGIUM: NINE DOMAINS OF INTERVENTION



PASCALE JONCKHEER, ANJA DESOMER, NADIA BENAHMED, BÉNÉDICTE VOS, DORINE LENOIR

Title:	Multimodal management of chronic pain in Belgium: nine domains of intervention – Supplement 1: Methods
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SPSCAE), Jessica Van Oosterwijck (UGent), Damien Wathélet (INAMI – RIZIV)

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Reported interests KCE members: KCE is a federal institution funded by INAMI-RIZIV, by the Federal Public Service of Health, Food chain Safety and Environment, and by the Federal Public Service of Social Security. KCE's mission is to advise policymakers on decisions relating to health care and health insurance on the basis of scientific and objective research. It is expected to identify and shed light on the best possible solutions, in the context of an accessible, high-quality health care system with due regard for growing demand and budgetary constraints. , KCE has no interest in companies (commercial or non-commercial, i.e. hospitals and universities), associations (e.g. professional associations, unions), individuals or organisations (e.g. lobby groups) that could be positively or negatively affected (financially or in any other way) by the implementation of the recommendations. All experts involved in the writing of the report or the peer-review process completed a declaration of interest form. Information on potential conflicts of interest is published in the colophon of this report. All members of the KCE Expert Team make yearly declarations of interest and further details of these are available upon request.

Reported interests: 'All experts and stakeholders consulted within this report were selected because of their involvement in the topic of chronic pain management. Therefore, by definition, each of them might have a certain degree of conflict of interest to the main topic of this report'

Layout: Ine Verhulst

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- The external experts were consulted about a (preliminary) version of the scientific report. Their comments were discussed during meetings. They did not co-author the scientific report and did not necessarily agree with its content.
- Subsequently, a (final) version was submitted to the validators. The validation of the report results from a consensus or a voting process between the validators. The validators did not co-author the scientific report and did not necessarily all three agree with its content.
- Finally, this report has been approved by common assent by the Executive Board.
- Only the KCE is responsible for errors or omissions that could persist. The policy recommendations are also under the full responsibility of the KCE.

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LIST OF ABBREVIATIONS

ABBREVIATION	DEFINITION
ACT	Acceptance and commitment therapy
BPS	Biopsychosocial
CASP	Critical Appraisal Skills Programme checklist for appraising qualitative research
CBT	Cognitive behavioural therapy
CFS	Chronic fatigue syndrome
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CMP	Chronic musculoskeletal pain
CMSP	Chronic musculoskeletal pain
EBP	Evidence-based psychotherapy
FSS	Functional somatic syndrome
HCP	Healthcare professional
HP	Healthcare professional
HVP	High-value physiotherapy
IBS	Irritable bowel syndrome
JB	Joanna Briggs Institute
KM	Knowledge mobilization
KT	Knowledge transfer
LBP	Low back pain
MBSR	Mindfulness-based stress reduction
MUS	Medically unexplained symptoms
PSI	peer-support interventions
PSVs	peer-support volunteers
RCT	Randomised control trial
RTW	Return to work
SAW	Stay at work
SH	Stakeholders
SR	Systematic review
UK	United Kingdom
USA	United States of America



1 LITERATURE REVIEW

1.1 Search strategy

1.1.1 Medline

Date	February 13, 2023	
Database	Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions <1946 to February 13, 2023>	
Search strategy		
1	Chronic Pain/	21503
2	intractable pain/	6361
3	1 or 2	27775
4	chronic pain?.jw.	1
5	(chronic adj2 pain?).ab,ti,kf.	69215
6	intractable pain?.ab,ti,kf.	2640
7	refractory pain?.ab,ti,kf.	761
8	functional pain*.ab,ti,kf.	405
9	idiopathic pain*.ab,ti,kf.	166
10	long-term pain*.ab,ti,kf.	1496
11	persistent pain*.ab,ti,kf.	6479
12	(sub-acute adj3 pain?).ab,ti,kf.	104
13	(subacute adj3 pain?).ab,ti,kf.	609
14	"widespread pain".ab,ti,kf.	2023
15	diffuse pain?.ab,ti,kf.	376
16	nociplastic pain?.ab,ti,kf.	127
17	somatoform disorder?.ab,ti,kf.	2275
18	somatization?.ab,ti,kf.	5296
19	somatic symptom disorder?.ab,ti,kf.	487
20	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19	87106
21	3 or 20	95836
22	21 not (exp animals/ not humans/)	89271
23	Psychosocial interventions/	818
24	(Psychosocial adj2 intervention*).ab,ti,kf.	8026
25	psychosocial treatment?.ab,ti,kf.	2262
26	psychological intervention?.ab,ti,kf.	8167
27	24 or 25 or 26	17750

28	23 or 27	17899
29	exp Holistic Health/	8001
30	holistic.ab,ti,kf.	33678
31	holism.ab,ti,kf.	789
32	wholistic.ab,ti,kf.	281
33	whole person.ab,ti,kf.	1363
34	30 or 31 or 32 or 33	35675
35	29 or 34	40425
36	Healthy lifestyle/	3277
37	lifestyle*.ab,ti,kf.	131033
38	life style*.ab,ti,kf.	13339
39	37 or 38	142858
40	36 or 39	143859
41	Self-help groups/	9552
42	Self-help group*.ab,ti,kf.	1899
43	Support group*.ab,ti,kf.	8820
44	Therapeutic social club*.ab,ti,kf.	9
45	peer support.ab,ti,kf.	6766
46	online groups.ab,ti,kf.	149
47	community support.ab,ti,kf.	2638
48	support meetings.ab,ti,kf.	83
49	support communities.ab,ti,kf.	129
50	(group adj3 intervention?).ab,ti,kf.	59802
51	42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50	78132
52	41 or 51	84063
53	Self care/	35826
54	Self care.ab,ti,kf.	23966
55	53 or 54	50558
56	Psychosocial support systems/	949
57	Psychosocial support.ab,ti,kf.	4674
58	Social support system*.ab,ti,kf.	807
59	57 or 58	5477
60	56 or 59	6240
61	Behavior Therapy/	30071
62	exp Behavior Therapy/	87739



63	Cognitive Behavioral Therapy/	29759
64	exp Cognitive Behavioral Therapy/	35644
65	61 or 64	64588
66	behavio?r therap*.ab,ti,kf,jw.	12753
67	behavio?ral therap*.ab,ti,kf.	21954
68	cognition therap*.ab,ti,kf.	15
69	cognitive psychotherap*.ab,ti,kf.	143
70	behavio?r? treatment?.ab,ti,kf.	614
71	behavio?r? modification?.ab,ti,kf.	3277
72	conditioning therap*.ab,ti,kf.	561
73	66 or 67 or 68 or 69 or 70 or 71 or 72	37215
74	65 or 73	82043
75	Self-Management/	5088
76	self-manag*.ab,ti,kf.	27361
77	pain manag*.ab,ti,kf.	33347
78	self-help.ab,ti,kf.	7822
79	76 or 77 or 78	67759
80	75 or 79	68374
81	BPS model.ab,ti,kf.	74
82	biopsychosocial.ab,ti,kf.	8153
83	81 or 82	8173
84	Motivational Enhancement Therapy.ab,ti,kf.	358
85	Pain science education.ab,ti,kf.	33
86	Pain neuroscience education.ab,ti,kf.	199
87	pain neurophysiology education.ab,ti,kf.	28
88	pain neurophysiology education.ab,ti,kf.	28
89	explain pain.ab,ti,kf.	73
90	health education.ab,ti,kf.	41327
91	pain education.ab,ti,kf.	692
92	84 or 85 or 86 or 87 or 88 or 89 or 90 or 91	42651
93	multimodal.ab,ti,kf.	49785
94	28 or 35 or 40 or 52 or 55 or 60 or 74 or 80 or 83 or 92 or 93	534426
95	22 and 94	14897
96	PARIHS.ab,ti,kf.	215
97	CFIR.ab,ti,kf.	790

98	enabler*.ab,ti,kf.	5517
99	belief*.ab,ti,kf.	101957
100	tdf.ab,ti,kf.	4337
101	implement*.ab,ti,kf.	666879
102	barrier*.ab,ti,kf.	389177
103	perceive*.ab,ti,kf.	284341
104	motivate*.ab,ti,kf.	56951
105	improvement?.ab,ti,kf.	947893
106	obstacle*.ab,ti,kf.	62190
107	ERIC.ab,ti,kf.	5653
108	problem*.ab,ti,kf.	1217904
109	obstruct*.ab,ti,kf.	324902
110	failure*.ab,ti,kf.	847794
111	determinant*.ab,ti,kf.	281487
112	experience*.ab,ti,kf.	1314627
113	difficult*.ab,ti,kf.	758034
114	facilitat*.ab,ti,kf.	669370
115	success*.ab,ti,kf.	1363873
116	challenge*.ab,ti,kf.	871097
117	constrain*.ab,ti,kf.	173889
118	((attitude* or perception* or perspective* or involve* or participat* or Behavior) adj3 change).ab,ti,kf.	31088
119	(guideline? adj3 (adherence or compliance or comply or adhere or follow*)).ab,ti,kf.	30864
120	96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119	7828040
121	implementation science/	1220
122	Guideline adherence/	34939
123	Patient compliance/	60435
124	121 or 122 or 123	95816
125	120 or 124	7874881
126	95 and 125	9129
127	((systematic review or systematic literature review or systematic scoping review or systematic narrative review or systematic qualitative review or systematic evidence review or systematic quantitative review or systematic meta-review or systematic critical review or systematic mixed studies review or systematic mapping review or systematic cochrane review or "systematic search and review" or systematic integrative review).ti. not comment.pt. not	257380



	(protocol or protocols).ti. not medline.st.) or (Cochrane Database Syst Rev.ja. and review.pt.) or systematic review.pt.	
128	meta-analys*.ti.	170288
129	meta-analysis.pt.	175722
130	(meta-ethnograph* or metaethnograph*).ab,ti,kf.	827
131	127 or 128 or 129 or 130	362845
132	126 and 131	435
133	limit 132 to yr="2013-Current"	371

1.1.2 Embase

Date	5 Mar 2023	
Database	Embase	
Search strategy		
#1	'chronic pain'/de	74343
#2	'intractable pain'/de	5503
#3	#1 OR #2	79326
#4	(chronic NEAR/2 pain\$):jt	0
#5	(chronic NEAR/2 pain\$):ti,ab,kw	103354
#6	'intractable pain\$':ti,ab,kw	3925
#7	'refractory pain\$':ti,ab,kw	1302
#8	'functional pain*':ti,ab,kw	590
#9	'idiopathic pain*':ti,ab,kw	255
#10	'long-term pain*':ti,ab,kw	2187
#11	'persistent pain*':ti,ab,kw	9021
#12	('sub acute' NEAR/3 pain\$):ti,ab,kw	177
#13	(subacute NEAR/3 pain\$):ti,ab,kw	901
#14	'widespread pain':ti,ab,kw	3411
#15	'diffuse pain\$':ti,ab,kw	674
#16	'nociplastic pain\$':ti,ab,kw	167
#17	'somatoform disorder\$':ti,ab,kw	3533
#18	somatization\$:ti,ab,kw	7799
#19	'somatic symptom disorder\$':ti,ab,kw	671
#20	#4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19	129340
#21	#3 OR #20	151907
#22	#21 NOT ('animals'/exp NOT 'humans'/de)	142034

#23	'psychosocial intervention'/de	1560
#24	(psychosocial NEAR/2 intervention*):ti,ab,kw	11374
#25	'psychosocial treatment\$:ti,ab,kw	3166
#26	'psychological intervention\$:ti,ab,kw	11336
#27	#24 OR #25 OR #26	24848
#28	#23 OR #27	25303
#29	holistic:ti,ab,kw	43070
#30	holism:ti,ab,kw	993
#31	wholistic:ti,ab,kw	346
#32	'whole person':ti,ab,kw	1777
#33	#29 OR #30 OR #31 OR #32	45621
#34	'healthy lifestyle'/de	8122
#35	lifestyle*:ti,ab,kw	186433
#36	'life style*:ti,ab,kw	21275
#37	#35 OR #36	198326
#38	#34 OR #37	200478
#39	'self help'/de	14997
#40	'self-help group*:ti,ab,kw	2620
#41	'support group*:ti,ab,kw	13991
#42	'therapeutic social club*:ti,ab,kw	9
#43	'peer support':ti,ab,kw	9354
#44	'online groups':ti,ab,kw	206
#45	'community support':ti,ab,kw	3452
#46	'support meetings':ti,ab,kw	132
#47	'support communities':ti,ab,kw	168
#48	(group NEAR/3 intervention\$):ti,ab,kw	82929
#49	#40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48	109685
#50	#39 OR #49	121038
#51	'self care'/de	72785
#52	'self care':ti,ab,kw	33789
#53	#51 OR #52	82254
#54	'psychosocial care'/de	22469
#55	'psychosocial support':ti,ab,kw	7027
#56	'social support system*:ti,ab,kw	1069
#57	#55 OR #56	8089



#58	#54 OR #57	26340
#59	'behavior therapy'/de	46985
#60	'cognitive behavioral therapy'/exp	25064
#61	#59 OR #60	71084
#62	'behavio\$r therap*':ti,ab,kw	0
#63	'behavio\$ral therap*':ti,ab,kw	31109
#64	'cognition therap*':ti,ab,kw	26
#65	'cognitive psychotherap*':ti,ab,kw	530
#66	'behavio\$r\$ treatment\$':ti,ab,kw	846
#67	'behavio\$r\$ modification\$':ti,ab,kw	4483
#68	'conditioning therap*':ti,ab,kw	1044
#69	#62 OR #63 OR #64 OR #65 OR #66 OR #67 OR #68	37834
#70	#61 OR #69	90018
#71	'self manag*':ti,ab,kw	38793
#72	'pain manag*':ti,ab,kw	49031
#73	'self help':ti,ab,kw	10092
#74	#71 OR #72 OR #73	96750
#75	'biopsychosocial model'/de	756
#76	'bps model':ti,ab,kw	88
#77	biopsychosocial:ti,ab,kw	13092
#78	#76 OR #77	13110
#79	#75 OR #78	13305
#80	'motivational enhancement therapy':ti,ab,kw	471
#81	'pain science education':ti,ab,kw	36
#82	'pain neuroscience education':ti,ab,kw	228
#83	'pain neurophysiology education':ti,ab,kw	45
#84	'pain neurophysiology education':ti,ab,kw	45
#85	'explain pain':ti,ab,kw	117
#86	'health education'/de	112917
#87	'health education':ti,ab,kw	48369
#88	'pain education':ti,ab,kw	1007
#89	'pain education'/de	14
#90	multimodal:ti,ab,kw	76843
#91	#80 OR #81 OR #82 OR #83 OR #84 OR #85 OR #86 OR #87 OR #88 OR #89 OR #90	213091

#92	#28 OR #33 OR #38 OR #50 OR #53 OR #58 OR #70 OR #74 OR #79 OR #91	803616
#93	#22 AND #92	23732
#94	parihs:ti,ab,kw	236
#95	cfir:ti,ab,kw	906
#96	enabler*:ti,ab,kw	6728
#97	belief*:ti,ab,kw	124838
#98	tdf:ti,ab,kw	8641
#99	implement*:ti,ab,kw	869990
#100	barrier*:ti,ab,kw	486801
#101	perceive*:ti,ab,kw	347345
#102	motivate*:ti,ab,kw	67117
#103	improvement\$:ti,ab,kw	1386734
#104	obstacle*:ti,ab,kw	75526
#105	eric:ti,ab,kw	6914
#106	problem*:ti,ab,kw	1553946
#107	obstruct*:ti,ab,kw	479015
#108	failure*:ti,ab,kw	1275527
#109	determinant*:ti,ab,kw	342578
#110	experience*:ti,ab,kw	1875048
#111	difficult*:ti,ab,kw	1037585
#112	facilitat*:ti,ab,kw	820769
#113	success*:ti,ab,kw	1794737
#114	challenge*:ti,ab,kw	1077547
#115	constrain*:ti,ab,kw	193160
#116	((attitude* OR perception* OR perspective* OR involve* OR participat* OR behavior) NEAR/3 change):ti,ab,kw	36858
#117	(guideline\$ NEAR/3 (adherence OR compliance OR comply OR adhere OR follow*)):ti,ab,kw	50686
#118	#94 OR #95 OR #96 OR #97 OR #98 OR #99 OR #100 OR #101 OR #102 OR #103 OR #104 OR #105 OR #106 OR #107 OR #108 OR #109 OR #110 OR #111 OR #112 OR #113 OR #114 OR #115 OR #116 OR #117	10276199
#119	'implementation science'/de	3815
#120	'guideline adherence'/de	19768
#121	'patient compliance'/de	149090
#122	#119 OR #120 OR #121	171926
#123	#118 OR #122	10362604



#124	#93 AND #123	14704
#125	'meta-analysis'/exp OR 'meta-analysis' OR 'systematic review'/exp OR 'systematic review'	665053
#126	'meta ethnograph*':ti,ab,kw OR metaethnograph*':ti,ab,kw	942
#127	#125 OR #126	665373
#128	#124 AND #127	1040
#129	#128 AND [2013-2023]/py	837
#130	#129 NOT [medline]/lim	323
#131	#130 NOT ('conference abstract'/it OR 'conference paper'/it OR 'conference review'/it)	115

1.1.3 Cochrane

Date	27/02/2023 17:36:21	
Database	Cochrane	
Search strategy		
#1	[mh ^"Chronic Pain"]	3620
#2	[mh ^"intractable pain"]	315
#3	#1 OR #2	3921
#4	("chronic" NEXT pain?.jw.)	28963
#5	(chronic:ti,ab,kw NEAR/2 pain?:ti,ab,kw)	16164
#6	("intractable" NEXT pain?):ti,ab,kw	280
#7	("refractory" NEXT pain?):ti,ab,kw	98
#8	("functional" NEXT pain*):ti,ab,kw	64
#9	("idiopathic" NEXT pain*):ti,ab,kw	33
#10	("long-term" NEXT pain*):ti,ab,kw	360
#11	("persistent" NEXT pain*):ti,ab,kw	945
#12	(sub-acute:ti,ab,kw NEAR/3 pain?:ti,ab,kw)	75
#13	(subacute:ti,ab,kw NEAR/3 pain?:ti,ab,kw)	305
#14	"widespread pain":ti,ab,kw	412
#15	("diffuse" NEXT pain?):ti,ab,kw	47
#16	("nociplastic" NEXT pain?):ti,ab,kw	11
#17	("somatoform" NEXT disorder?):ti,ab,kw	868
#18	somatization?:ti,ab,kw	764
#19	("somatic symptom" NEXT disorder?):ti,ab,kw	59
#20	#4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19	36122
#21	#3 OR #20	36305

#22	#21 NOT ([mh animals] NOT [mh ^humans])	36278
#23	[mh ^"Psychosocial interventions"]	177
#24	(Psychosocial:ti,ab,kw NEAR/2 intervention*:ti,ab,kw)	2962
#25	("psychosocial" NEXT treatment?):ti,ab,kw	925
#26	("psychological" NEXT intervention?):ti,ab,kw	3169
#27	#24 OR #25 OR #26	6662
#28	#23 OR #27	6662
#29	[mh "Holistic Health"]	104
#30	holistic:ti,ab,kw	1454
#31	holism:ti,ab,kw	8
#32	wholistic:ti,ab,kw	18
#33	"whole person":ti,ab,kw	66
#34	#30 OR #31 OR #32 OR #33	1538
#35	#29 OR #34	1539
#36	[mh ^"Healthy lifestyle"]	468
#37	lifestyle*:ti,ab,kw	25457
#38	("life" NEXT style?):ti,ab,kw	6526
#39	#37 OR #38	27301
#40	#36 OR #39	27301
#41	[mh ^"Self-help groups"]	815
#42	("Self-help" NEXT group?):ti,ab,kw	1017
#43	("Support" NEXT group?):ti,ab,kw	2230
#44	("Therapeutic social" NEXT club?):ti,ab,kw	0
#45	"peer support":ti,ab,kw	1522
#46	"online groups":ti,ab,kw	44
#47	"community support":ti,ab,kw	252
#48	"support meetings":ti,ab,kw	36
#49	"support communities":ti,ab,kw	6
#50	(group:ti,ab,kw NEAR/3 intervention?:ti,ab,kw)	126068
#51	#42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50	129338
#52	#41 OR #51	129338
#53	[mh ^"Self care"]	4788
#54	"Self care":ti,ab,kw	13621
#55	#53 OR #54	13621
#56	[mh ^"Psychosocial support systems"]	89



#57	"Psychosocial support":ti,ab,kw	710
#58	("Social support" NEXT system*):ti,ab,kw	59
#59	#57 OR #58	769
#60	#56 OR #59	769
#61	[mh ^"Behavior Therapy"]	5410
#62	[mh "Behavior Therapy"]	21393
#63	[mh ^"Cognitive Behavioral Therapy"]	10266
#64	[mh "Cognitive Behavioral Therapy"]	11934
#65	#61 OR #64	17041
#66	(behavio?r NEXT therap*,jw.):ti,ab,kw	0
#67	(behavio?ral NEXT therap*):ti,ab,kw	19495
#68	("cognition" NEXT therap*):ti,ab,kw	31
#69	("cognitive" NEXT psychotherap*):ti,ab,kw	65
#70	(behavio?r? NEXT treatment?):ti,ab,kw	241
#71	(behavio?r? NEXT modification?):ti,ab,kw	1105
#72	("conditioning" NEXT therap*):ti,ab,kw	108
#73	#66 OR #67 OR #68 OR #69 OR #70 OR #71 OR #72	20923
#74	#65 OR #73	27105
#75	[mh ^Self-Management]	961
#76	self-manag*:ti,ab,kw	10183
#77	("pain" NEXT manag*):ti,ab,kw	13090
#78	self-help:ti,ab,kw	4453
#79	#76 OR #77 OR #78	27170
#80	#75 OR #79	27170
#81	"BPS model":ti,ab,kw	3
#82	biopsychosocial:ti,ab,kw	755
#83	#81 OR #82	755
#84	"Motivational Enhancement Therapy":ti,ab,kw	347
#85	"Pain science education":ti,ab,kw	11
#86	"Pain neuroscience education":ti,ab,kw	198
#87	"pain neurophysiology education":ti,ab,kw	24
#88	"pain neurophysiology education":ti,ab,kw	24
#89	"explain pain":ti,ab,kw	25
#90	"health education":ti,ab,kw	12624
#91	"pain education":ti,ab,kw	353

#92	#84 OR #85 OR #86 OR #87 OR #88 OR #89 OR #90 OR #91	13505
#93	multimodal:ti,ab,kw	7265
#94	#28 OR #35 OR #40 OR #52 OR #55 OR #60 OR #74 OR #80 OR #83 OR #92 OR #93	213228
#95	#22 AND #94	7018
#96	PARIHS:ti,ab,kw	41
#97	CFIR:ti,ab,kw	136
#98	enabler*:ti,ab,kw	413
#99	belief*:ti,ab,kw	9862
#100	tdf:ti,ab,kw	2047
#101	implement*:ti,ab,kw	52538
#102	barrier*:ti,ab,kw	23682
#103	perceive*:ti,ab,kw	33666
#104	motivate*:ti,ab,kw	4943
#105	improvement?:ti,ab,kw	208103
#106	obstacle*:ti,ab,kw	2326
#107	ERIC:ti,ab,kw	822
#108	problem*:ti,ab,kw	74814
#109	obstruct*:ti,ab,kw	43130
#110	failure*:ti,ab,kw	116424
#111	determinant*:ti,ab,kw	9363
#112	experience*:ti,ab,kw	123999
#113	difficult*:ti,ab,kw	46568
#114	facilitat*:ti,ab,kw	35306
#115	success*:ti,ab,kw	87654
#116	challenge*:ti,ab,kw	34170
#117	constrain*:ti,ab,kw	5154
#118	((attitude*:ti,ab,kw OR perception*:ti,ab,kw OR perspective*:ti,ab,kw OR involve*:ti,ab,kw OR participat*:ti,ab,kw OR Behavior:ti,ab,kw) NEAR/3 change:ti,ab,kw)	10629
#119	(guideline?:ti,ab,kw NEAR/3 (adherence:ti,ab,kw OR compliance:ti,ab,kw OR comply:ti,ab,kw OR adhere:ti,ab,kw OR follow*:ti,ab,kw))	4628
#120	#96 OR #97 OR #98 OR #99 OR #100 OR #101 OR #102 OR #103 OR #104 OR #105 OR #106 OR #107 OR #108 OR #109 OR #110 OR #111 OR #112 OR #113 OR #114 OR #115 OR #116 OR #117 OR #118 OR #119	661073
#121	[mh ^"implementation science"]	89
#122	[mh ^"Guideline adherence"]	1379
#123	[mh ^"Patient compliance"]	10876



#124	#121 OR #122 OR #123	12279
#125	#120 OR #124	666308
#126	#95 AND #125	4368
#127	#126 with Cochrane Library publication date Between Jan 2013 and Dec 2023	3700
#128	#127 in Cochrane Reviews	133

1.1.4 PsycInfo

Date	February Week 4 2023	
Database	APA PsycInfo <2002 to February Week 4 2023>	
Search strategy		
1	chronic pain/	12413
2	chronic pain?.jw.	0
3	(chronic adj2 pain?).tw.	18311
4	intractable pain?.tw.	168
5	refractory pain?.tw.	79
6	functional pain*.tw.	92
7	idiopathic pain*.tw.	47
8	long-term pain*.tw.	192
9	persistent pain*.tw.	1197
10	(sub-acute adj3 pain?).tw.	27
11	(subacute adj3 pain?).tw.	77
12	"widespread pain".tw.	527
13	diffuse pain?.tw.	42
14	nociplastic pain?.tw.	18
15	somatoform disorder?.tw.	1829
16	somatization?.tw.	3517
17	somatic symptom disorder?.tw.	468
18	2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17	24658
19	1 or 18	26032
20	19 not (exp animals/ not humans/)	24051
21	Psychosocial intervention.jx.	186
22	(Psychosocial adj2 intervention*).tw.	6646
23	psychosocial treatment?.tw.	2595
24	psychological intervention?.tw.	6993



25	21 or 22 or 23 or 24	15712
26	(Psychosocial adj2 intervention*).ti.	1224
27	21 or 22 or 23 or 24 or 25 or 26	15712
28	intervention/	83827
29	exp Psychosocial Rehabilitation/	7318
30	28 or 29	90307
31	27 or 30	100558
32	exp Holistic Health/	1460
33	holistic.tw.	19523
34	holism.tw.	692
35	wholistic.tw.	157
36	whole person.tw.	1209
37	33 or 34 or 35 or 36	21179
38	32 or 37	21336
39	exp lifestyle/	10763
40	lifestyle*.tw.	29349
41	life style*.tw.	1677
42	40 or 41	30669
43	39 or 42	31632
44	exp support groups/	4099
45	Self-help group*.tw.	989
46	Support group*.tw.	6058
47	Therapeutic social club*.tw.	1
48	peer support.tw.	5153
49	online groups.tw.	278
50	community support.tw.	1870
51	support meetings.tw.	57
52	support communities.tw.	122
53	(group adj3 intervention?).tw.	21310
54	45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53	34332
55	44 or 54	36092
56	exp Self-Care/	3013
57	Self care.tw.	10302
58	56 or 57	10347
59	exp Social Support/	29341



60	Psychosocial support.tw.	2274
61	Social support system*.tw.	560
62	59 or 60 or 61	31502
63	exp behavior therapy/	11242
64	exp Cognitive Behavior Therapy/	25930
65	63 or 64	35339
66	behavio?r therap*.tw,jx.	17752
67	behavio?ral therap*.tw.	22908
68	cognition therap*.tw.	13
69	cognitive psychotherap*.tw.	263
70	behavio?r? treatment?.tw.	462
71	behavio?r? modification?.tw.	1190
72	conditioning therap*.tw.	6
73	66 or 67 or 68 or 69 or 70 or 71 or 72	38497
74	65 or 73	50625
75	exp self-management/	5961
76	self-Help Techniques/	2648
77	75 or 76	8574
78	self-manag*.tw.	10835
79	pain manag*.tw.	7487
80	self-help.tw.	6023
81	78 or 79 or 80	23928
82	77 or 81	24946
83	exp Biopsychosocial Approach/	3029
84	BPS model.tw.	65
85	biopsychosocial.tw.	7146
86	84 or 85	7150
87	83 or 86	7603
88	exp Motivational Interviewing/	2910
89	Motivational Enhancement Therapy.tw.	361
90	Pain science education.tw.	11
91	Pain neuroscience education.tw.	30
92	pain neurophysiology education.tw.	8
93	pain neurophysiology education.tw.	8
94	explain pain.tw.	24

95	health education.tw.	9768
96	pain education.tw.	212
97	89 or 90 or 91 or 92 or 93 or 94 or 95 or 96	10392
98	88 or 97	13121
99	multimodal.tw.	12306
100	exp Multimodal Treatment Approach/	1190
101	99 or 100	12996
102	31 or 38 or 43 or 55 or 58 or 62 or 74 or 82 or 87 or 98 or 101	294518
103	20 and 102	6460
104	PARIHS.tw.	67
105	CFIR.tw.	167
106	enabler*.tw.	2347
107	belief*.tw.	109401
108	tdf.tw.	224
109	implement*.tw.	189337
110	barrier*.tw.	80856
111	perceive*.tw.	221365
112	motivate*.tw.	38764
113	improvement?.tw.	137819
114	obstacle*.tw.	17320
115	ERIC.tw.	4191
116	problem*.tw.	370943
117	obstruct*.tw.	8933
118	failure*.tw.	54594
119	determinant*.tw.	43080
120	experience*.tw.	573995
121	difficult*.tw.	197427
122	facilitat*.tw.	150459
123	success*.tw.	209606
124	challenge*.tw.	223522
125	constrain*.tw.	47728
126	((attitude* or perception* or perspective* or involve* or participat* or Behavior) adj3 change).tw.	22402
127	(guideline? adj3 (adherence or compliance or comply or adhere or follow*)).tw.	4274



128	104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126 or 127	1746171
129	exp Treatment Compliance/	13063
130	128 or 129	1750765
131	103 and 130	4429
132	limit 131 to systematic reviews	135
133	((systematic review or systematic literature review or systematic scoping review or systematic narrative review or systematic qualitative review or systematic evidence review or systematic quantitative review or systematic meta-review or systematic critical review or systematic mixed studies review or systematic mapping review or systematic cochrane review or "systematic search and review" or systematic integrative review).ti. not comment.pt. not (protocol or protocols).ti. not medline.st.) or (Cochrane Database Syst Rev.jx. and review.pt.) or systematic review.pt.	32588
134	meta-analys*.ti.	22861
135	meta-analysis.pt.	0
136	(meta-ethnograph* or metaethnograph*).tw.	528
137	133 or 134 or 135 or 136	47547
138	131 and 137	133
139	132 or 138	166
140	limit 139 to yr="2013-Current"	137

1.1.5 Cinahl

Date	2023-03-15	
Database	Cinahl	
Search strategy		
S1	(MH "Chronic Pain")	
S2	(MH "Chronic Pain (Saba CCC)")	
S3	(MH "Chronic Pain (NANDA)")	
S4	S1 OR S2 OR S3	
S5	(SO chronic pain#)	
S6	((TI chronic OR AB chronic OR SU chronic) N2 (TI pain# OR AB pain# OR SU pain#))	
S7	(TI "intractable pain#" OR AB "intractable pain#" OR SU "intractable pain#")	
S8	(TI "refractory pain#" OR AB "refractory pain#" OR SU "refractory pain#")	
S9	(TI "functional pain*" OR AB "functional pain*" OR SU "functional pain*")	
S10	(TI "idiopathic pain*" OR AB "idiopathic pain*" OR SU "idiopathic pain*")	
S11	(TI "long-term pain*" OR AB "long-term pain*" OR SU "long-term pain*")	

S12	(TI "persistent pain*" OR AB "persistent pain*" OR SU "persistent pain*")	
S13	((TI sub-acute OR AB sub-acute OR SU sub-acute) N3 (TI pain# OR AB pain# OR SU pain#))	
S14	((TI subacute OR AB subacute OR SU subacute) N3 (TI pain# OR AB pain# OR SU pain#))	
S15	(TI "widespread pain" OR AB "widespread pain" OR SU "widespread pain")	
S16	(TI "diffuse pain#" OR AB "diffuse pain#" OR SU "diffuse pain#")	
S17	(TI "nociplastic pain#" OR AB "nociplastic pain#" OR SU "nociplastic pain#")	
S18	(TI "somatoform disorder#" OR AB "somatoform disorder#" OR SU "somatoform disorder#")	
S19	(TI somatization# OR AB somatization# OR SU somatization#)	
S20	(TI "somatic symptom disorder#" OR AB "somatic symptom disorder#" OR SU "somatic symptom disorder#")	
S21	S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20	
S22	S4 OR S21	
S23	S22 NOT ((MH animals+) NOT (MH humans))	
S24	(MH "Psychosocial intervention")	
S25	((TI Psychosocial OR AB Psychosocial OR SU Psychosocial) N2 (TI intervention* OR AB intervention* OR SU intervention*))	
S26	(TI "psychosocial treatment#" OR AB "psychosocial treatment#" OR SU "psychosocial treatment#")	
S27	(TI "psychological intervention#" OR AB "psychological intervention#" OR SU "psychological intervention#")	
S28	S25 OR S26 OR S27	
S29	S24 OR S28	
S30	(MH "Holistic Health")	
S31	(TI holistic OR AB holistic OR SU holistic)	
S32	(TI holism OR AB holism OR SU holism)	
S33	(TI wholistic OR AB wholistic OR SU wholistic)	
S34	(TI "whole person" OR AB "whole person" OR SU "whole person")	
S35	S31 OR S32 OR S33 OR S34	
S36	S30 OR S35	
S37	(MH "Life Style")	
S38	(TI lifestyle* OR AB lifestyle* OR SU lifestyle*)	
S39	(TI "life style*" OR AB "life style*" OR SU "life style*")	
S40	S38 OR S39	
S41	S37 OR S40	



S42	(MH "Support Groups")	
S43	(TI "Self-help group*" OR AB "Self-help group*" OR SU "Self-help group*")	
S44	(TI "Support group*" OR AB "Support group*" OR SU "Support group*")	
S45	(TI "Therapeutic social club" OR AB "Therapeutic social club" OR SU "Therapeutic social club")	
S46	(TI "peer support" OR AB "peer support" OR SU "peer support")	
S47	(TI "online groups" OR AB "online groups" OR SU "online groups")	
S48	(TI "community support" OR AB "community support" OR SU "community support")	
S49	(TI "support meetings" OR AB "support meetings" OR SU "support meetings")	
S50	(TI "support communities" OR AB "support communities" OR SU "support communities")	
S51	((TI group OR AB group OR SU group) N3 (TI intervention# OR AB intervention# OR SU intervention#))	
S52	S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51	
S53	S42 OR S52	
S54	(MH "Self care+")	
S55	(TI "Self care" OR AB "Self care" OR SU "Self care")	
S56	S54 OR S55	
S57	(MH "Support, Psychosocial+")	
S58	(TI "Psychosocial support" OR AB "Psychosocial support" OR SU "Psychosocial support")	
S59	(TI "Social support system*" OR AB "Social support system*" OR SU "Social support system*")	
S60	S58 OR S59	
S61	S57 OR S60	
S62	(MH "Behavior Therapy")	
S63	(MH "Cognitive Therapy+")	
S64	S62 OR S63	
S65	(SO "behavio#r therap*")	
S66	(TI "behavio#ral therap*" OR AB "behavio#ral therap*" OR SU "behavio#ral therap*")	
S67	(TI "cognition therap*" OR AB "cognition therap*" OR SU "cognition therap*")	
S68	(TI "cognitive psychotherap*" OR AB "cognitive psychotherap*" OR SU "cognitive psychotherap*")	
S69	(TI "behavio#r# treatment#" OR AB "behavio#r# treatment#" OR SU "behavio#r# treatment#")	

S70	(TI "behavior# modification#" OR AB "behavior# modification#" OR SU "behavior# modification#")	
S71	(TI "conditioning therap*" OR AB "conditioning therap*" OR SU "conditioning therap*")	
S72	S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71	
S73	S64 OR S72	
S74	(MH Self-Management)	
S75	(TI "pain manag*" OR AB "pain manag*" OR SU "pain manag*")	
S76	(TI self-manag* OR AB self-manag* OR SU self-manag*)	
S77	(TI self-help OR AB self-help OR SU self-help)	
S78	S75 OR S76 OR S77	
S79	S74 OR S78	
S80	(MH "Models, Biopsychosocial")	
S81	(TI "BPS model" OR AB "BPS model" OR SU "BPS model")	
S82	(TI biopsychosocial OR AB biopsychosocial OR SU biopsychosocial)	
S83	S81 OR S82	
S84	S80 OR S83	
S85	(MH "Motivational Interviewing")	
S86	(TI "Motivational Enhancement Therapy" OR AB "Motivational Enhancement Therapy" OR SU "Motivational Enhancement Therapy")	
S87	(TI "Pain science education" OR AB "Pain science education" OR SU "Pain science education")	
S88	(TI "Pain neuroscience education" OR AB "Pain neuroscience education" OR SU "Pain neuroscience education")	
S89	(TI "pain neurophysiology education" OR AB "pain neurophysiology education" OR SU "pain neurophysiology education")	
S90	(TI "pain neurophysiology education" OR AB "pain neurophysiology education" OR SU "pain neurophysiology education")	
S91	(TI "explain pain" OR AB "explain pain" OR SU "explain pain")	
S92	(TI "health education" OR AB "health education" OR SU "health education")	
S93	(TI "pain education" OR AB "pain education" OR SU "pain education")	
S94	S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93	
S95	(TI multimodal OR AB multimodal OR SU multimodal)	
S96	S29 OR S36 OR S41 OR S53 OR S56 OR S61 OR S73 OR S79 OR S84 OR S94 OR S95	
S97	S23 AND S96	
S98	(TI PARIHS OR AB PARIHS OR SU PARIHS)	
S99	(TI CFIR OR AB CFIR OR SU CFIR)	



S100	(TI enabler* OR AB enabler* OR SU enabler*)	
S101	(TI belief* OR AB belief* OR SU belief*)	
S102	(TI tdf OR AB tdf OR SU tdf)	
S103	(TI implement* OR AB implement* OR SU implement*)	
S104	(TI barrier* OR AB barrier* OR SU barrier*)	
S105	(TI perceive* OR AB perceive* OR SU perceive*)	
S106	(TI motivate* OR AB motivate* OR SU motivate*)	
S107	(TI improvement# OR AB improvement# OR SU improvement#)	
S108	(TI obstacle* OR AB obstacle* OR SU obstacle*)	
S109	(TI ERIC OR AB ERIC OR SU ERIC)	
S110	(TI problem* OR AB problem* OR SU problem*)	
S111	(TI obstruct* OR AB obstruct* OR SU obstruct*)	
S112	(TI failure* OR AB failure* OR SU failure*)	
S113	(TI determinant* OR AB determinant* OR SU determinant*)	
S114	(TI experience* OR AB experience* OR SU experience*)	
S115	(TI difficult* OR AB difficult* OR SU difficult*)	
S116	(TI facilitat* OR AB facilitat* OR SU facilitat*)	
S117	(TI success* OR AB success* OR SU success*)	
S118	(TI challenge* OR AB challenge* OR SU challenge*)	
S119	(TI constrain* OR AB constrain* OR SU constrain*)	
S120	((TI attitude* OR AB attitude* OR SU attitude*) OR (TI perception* OR AB perception* OR SU perception*) OR (TI perspective* OR AB perspective* OR SU perspective*) OR (TI involve* OR AB involve* OR SU involve*) OR (TI participat* OR AB participat* OR SU participat*) OR (TI Behavior OR AB Behavior OR SU Behavior)) N3 (TI change OR AB change OR SU change))	
S121	((TI guideline# OR AB guideline# OR SU guideline#) N3 ((TI adherence OR AB adherence OR SU adherence) OR (TI compliance OR AB compliance OR SU compliance) OR (TI comply OR AB comply OR SU comply) OR (TI adhere OR AB adhere OR SU adhere) OR (TI follow* OR AB follow* OR SU follow*)))	
S122	S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112 OR S113 OR S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120 OR S121	
S123	(MH "implementation science")	
S124	(MH "Guideline adherence")	

S125	(MH "Patient compliance")	
S126	S123 OR S124 OR S125	
S127	S122 OR S126	
S128	S97 AND S127	
S129	((((TI "systematic review") OR (TI "systematic literature review") OR (TI "systematic scoping review") OR (TI "systematic narrative review") OR (TI "systematic qualitative review") OR (TI "systematic evidence review") OR (TI "systematic quantitative review") OR (TI "systematic meta-review") OR (TI "systematic critical review") OR (TI "systematic mixed studies review") OR (TI "systematic mapping review") OR (TI "systematic cochrane review") OR (TI "systematic search and review") OR (TI "systematic integrative review"))) NOT (PT comment) NOT ((TI protocol) OR (TI protocols)) NOT medline.st.) OR (SO "Cochrane Database Syst Rev" AND (PT review)) OR (PT "systematic review"))	
S130	(TI meta-analys*)	
S131	(PT meta-analysis)	
S132	((TI meta-ethnograph* OR AB meta-ethnograph* OR SU meta-ethnograph*) OR (TI metaethnograph* OR AB metaethnograph* OR SU metaethnograph*))	
S133	S129 OR S130 OR S131 OR S132	
S134	S128 AND S133	
S135	S134 - Publication Date: 20130101-202303015	103
Comments	Hits missing due to a corrupt file. The final number has been retrieved thanks to the naming scheme of our export file.	

1.1.6 Pedro

<i>Date</i>	2023-03-24	
<i>Database</i>	PEDro	
<i>Search strategy</i>		
1	“chronic pain” AND “systematic review”	207



1.2 Search strategies update 2024

1.2.1 Medline

Date	April 26, 2024	
Database	Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions <1946 to April 26, 2024>	
Search strategy		
1	Chronic Pain/	24333
2	intractable pain/	6418
3	1 or 2	30642
4	chronic pain?.jw.	2
5	(chronic adj2 pain?).ab,ti,kf.	75966
6	intractable pain?.ab,ti,kf.	2742
7	refractory pain?.ab,ti,kf.	850
8	functional pain*.ab,ti,kf.	436
9	idiopathic pain*.ab,ti,kf.	176
10	long-term pain*.ab,ti,kf.	1628
11	persistent pain*.ab,ti,kf.	7039
12	(sub-acute adj3 pain?).ab,ti,kf.	110
13	(subacute adj3 pain?).ab,ti,kf.	647
14	"widespread pain".ab,ti,kf.	2195
15	diffuse pain?.ab,ti,kf.	400
16	nociplastic pain?.ab,ti,kf.	222
17	somatoform disorder?.ab,ti,kf.	2369
18	somatization?.ab,ti,kf.	5582
19	somatic symptom disorder?.ab,ti,kf.	597
20	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19	95077
21	3 or 20	104177
22	21 not (exp animals/ not humans/)	97180
23	Psychosocial interventions/	1134
24	(Psychosocial adj2 intervention*).ab,ti,kf.	8932
25	psychosocial treatment?.ab,ti,kf.	2370
26	psychological intervention?.ab,ti,kf.	9385
27	24 or 25 or 26	19922
28	23 or 27	20077



29	exp Holistic Health/	8032
30	holistic.ab,ti,kf.	39815
31	holistim.ab,ti,kf.	0
32	wholistic.ab,ti,kf.	324
33	whole person.ab,ti,kf.	1556
34	30 or 31 or 32 or 33	41481
35	29 or 34	46377
36	Healthy lifestyle/	3636
37	lifestyle?.ab,ti,kf.	146064
38	life style?.ab,ti,kf.	13609
39	37 or 38	158063
40	36 or 39	159073
41	Self-help groups/	9682
42	Self-help group*.ab,ti,kf.	1988
43	Support group*.ab,ti,kf.	9599
44	Therapeutic social club*.ab,ti,kf.	9
45	peer support.ab,ti,kf.	8014
46	online groups.ab,ti,kf.	180
47	community support.ab,ti,kf.	2967
48	support meetings.ab,ti,kf.	91
49	support communities.ab,ti,kf.	157
50	(group adj3 intervention?).ab,ti,kf.	67610
51	42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50	88147
52	41 or 51	94088
53	Self care/	36481
54	Self care.ab,ti,kf.	26643
55	53 or 54	53381
56	Psychosocial support systems/	1026
57	Psychosocial support.ab,ti,kf.	5340
58	Social support system*.ab,ti,kf.	900
59	57 or 58	6235
60	56 or 59	7020
61	Behavior Therapy/	30874
62	exp Behavior Therapy/	92283
63	Cognitive Behavioral Therapy/	31216



64	exp Cognitive Behavioral Therapy/	38149
65	61 or 64	67828
66	behavio?r therap*.ab,ti,kf,jw.	13648
67	behavio?ral therap*.ab,ti,kf.	24480
68	cognition therap*.ab,ti,kf.	16
69	cognitive psychotherap*.ab,ti,kf.	147
70	behavio?r? treatment?.ab,ti,kf.	651
71	behavio?r? modification?.ab,ti,kf.	3419
72	conditioning therap*.ab,ti,kf.	582
73	66 or 67 or 68 or 69 or 70 or 71 or 72	40635
74	65 or 73	87373
75	Self-Management/	5848
76	self-manag*.ab,ti,kf.	30606
77	pain manag*.ab,ti,kf.	37727
78	self-help.ab,ti,kf.	8354
79	76 or 77 or 78	75812
80	75 or 79	76444
81	BPS model.ab,ti,kf.	94
82	biopsychosocial.ab,ti,kf.	9256
83	81 or 82	9287
84	Motivational Enhancement Therapy.ab,ti,kf.	386
85	Pain science education.ab,ti,kf.	48
86	Pain neuroscience education.ab,ti,kf.	270
87	pain neurophysiology education.ab,ti,kf.	29
88	pain neurophysiology education.ab,ti,kf.	29
89	explain pain.ab,ti,kf.	76
90	health education.ab,ti,kf.	45042
91	pain education.ab,ti,kf.	793
92	84 or 85 or 86 or 87 or 88 or 89 or 90 or 91	46561
93	multimodal.ab,ti,kf.	58466
94	28 or 35 or 40 or 52 or 55 or 60 or 74 or 80 or 83 or 92 or 93	592302
95	22 and 94	16864
96	PARIHS.ab,ti,kf.	248
97	CFIR.ab,ti,kf.	1160
98	enabler*.ab,ti,kf.	6775

99	belief*.ab,ti,kf.	110718
100	tdf.ab,ti,kf.	4874
101	implement*.ab,ti,kf.	754028
102	barrier*.ab,ti,kf.	437383
103	perceive*.ab,ti,kf.	314236
104	motivate*.ab,ti,kf.	62708
105	improvement?.ab,ti,kf.	1036041
106	obstacle*.ab,ti,kf.	69722
107	ERIC.ab,ti,kf.	6402
108	problem*.ab,ti,kf.	1294235
109	obstruct*.ab,ti,kf.	345135
110	failure*.ab,ti,kf.	905128
111	determinant*.ab,ti,kf.	302190
112	experience*.ab,ti,kf.	1434560
113	difficult*.ab,ti,kf.	815692
114	facilitat*.ab,ti,kf.	746446
115	success*.ab,ti,kf.	1471076
116	challenge*.ab,ti,kf.	995531
117	constrain*.ab,ti,kf.	191840
118	((attitude* or perception* or perspective* or involve* or participat* or Behavior) adj3 change).ab,ti,kf.	33765
119	(guideline? adj3 (adherence or compliance or comply or adhere or follow*)).ab,ti,kf.	35699
120	96 or 97 or 98 or 99 or 100 or 101 or 102 or 103 or 104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119	8499257
121	implementation science/	1418
122	Guideline adherence/	35245
123	Patient compliance/	60882
124	121 or 122 or 123	96764
125	120 or 124	8546334
126	95 and 125	10341
127	((systematic review or systematic literature review or systematic scoping review or systematic narrative review or systematic qualitative review or systematic evidence review or systematic quantitative review or systematic meta-review or systematic critical review or systematic mixed studies review or systematic mapping review or systematic cochrane review or "systematic search and review" or systematic integrative review).ti. not comment.pt. not (protocol or protocols).ti. not medline.st.) or (Cochrane Database Syst Rev.ja. and review.pt.) or systematic review.pt.	307055



128	meta-analys*.ti.	200810
129	meta-analysis.pt.	199568
130	(meta-ethnograph* or metaethnograph*).ab,ti,kf.	966
131	127 or 128 or 129 or 130	422783
132	126 and 131	536
133	limit 132 to yr="2013-Current"	472
134	limit 132 to yr="2023-Current"	112

1.2.2 Embase

Date	26 Apr 2024	
Database	Embase	
Search strategy		
#1	'chronic pain'/de	81098
#2	'intractable pain'/de	5783
#3	#1 OR #2	86309
#4	(chronic NEAR/2 pain\$):jt	0
#5	(chronic NEAR/2 pain\$):ti,ab,kw	112322
#6	'intractable pain\$':ti,ab,kw	4079
#7	'refractory pain\$':ti,ab,kw	1437
#8	'functional pain*':ti,ab,kw	632
#9	'idiopathic pain*':ti,ab,kw	271
#10	'long-term pain*':ti,ab,kw	2371
#11	'persistent pain*':ti,ab,kw	9764
#12	('sub acute' NEAR/3 pain\$):ti,ab,kw	187
#13	(subacute NEAR/3 pain\$):ti,ab,kw	958
#14	'widespread pain':ti,ab,kw	3693
#15	'diffuse pain\$':ti,ab,kw	724
#16	'nociplastic pain\$':ti,ab,kw	291
#17	'somatoform disorder\$':ti,ab,kw	3691
#18	somatization\$:ti,ab,kw	8234
#19	'somatic symptom disorder\$':ti,ab,kw	807
#20	#4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19	140068
#21	#3 OR #20	164224
#22	#21 NOT ('animals'/exp NOT 'humans'/de)	153525
#23	'psychosocial intervention'/de	2541

#24	(psychosocial NEAR/2 intervention*):ti,ab,kw	12387
#25	'psychosocial treatment\$:ti,ab,kw	3313
#26	'psychological intervention\$:ti,ab,kw	12869
#27	#24 OR #25 OR #26	27477
#28	#23 OR #27	28206
#29	holistic:ti,ab,kw	49961
#30	holism:ti,ab,kw	1056
#31	wholistic:ti,ab,kw	411
#32	'whole person':ti,ab,kw	2022
#33	#29 OR #30 OR #31 OR #32	52826
#34	'healthy lifestyle'/de	10089
#35	lifestyle*:ti,ab,kw	206191
#36	'life style*':ti,ab,kw	21925
#37	#35 OR #36	218404
#38	#34 OR #37	220987
#39	'self help'/de	15487
#40	'self-help group*':ti,ab,kw	2719
#41	'support group*':ti,ab,kw	15177
#42	'therapeutic social club*':ti,ab,kw	9
#43	'peer support':ti,ab,kw	10823
#44	'online groups':ti,ab,kw	244
#45	'community support':ti,ab,kw	3852
#46	'support meetings':ti,ab,kw	147
#47	'support communities':ti,ab,kw	196
#48	(group NEAR/3 intervention\$):ti,ab,kw	92498
#49	#40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48	122101
#50	#39 OR #49	133780
#51	'self care'/de	79361
#52	'self care':ti,ab,kw	37230
#53	#51 OR #52	89765
#54	'psychosocial care'/de	24248
#55	'psychosocial support':ti,ab,kw	7925
#56	'social support system*':ti,ab,kw	1184
#57	#55 OR #56	9101
#58	#54 OR #57	28499



#59	'behavior therapy'/de	48518
#60	'cognitive behavioral therapy'/exp	31003
#61	#59 OR #60	78331
#62	'behavio\$r therap*':ti,ab,kw	0
#63	'behavio\$ral therap*':ti,ab,kw	34267
#64	'cognition therap*':ti,ab,kw	27
#65	'cognitive psychotherap*':ti,ab,kw	534
#66	'behavio\$r\$ treatment\$':ti,ab,kw	907
#67	'behavio\$r\$ modification\$':ti,ab,kw	4640
#68	'conditioning therap*':ti,ab,kw	1112
#69	#62 OR #63 OR #64 OR #65 OR #66 OR #67 OR #68	41274
#70	#61 OR #69	97994
#71	'self manag*':ti,ab,kw	42932
#72	'pain manag*':ti,ab,kw	54323
#73	'self help':ti,ab,kw	10675
#74	#71 OR #72 OR #73	106634
#75	'biopsychosocial model'/de	1172
#76	'bps model':ti,ab,kw	110
#77	biopsychosocial:ti,ab,kw	14659
#78	#76 OR #77	14689
#79	#75 OR #78	15002
#80	'motivational enhancement therapy':ti,ab,kw	503
#81	'pain science education':ti,ab,kw	51
#82	'pain neuroscience education':ti,ab,kw	311
#83	'pain neurophysiology education':ti,ab,kw	47
#84	'pain neurophysiology education':ti,ab,kw	47
#85	'explain pain':ti,ab,kw	125
#86	'health education'/de	118811
#87	'health education':ti,ab,kw	52917
#88	'pain education':ti,ab,kw	1105
#89	'pain education'/de	16
#90	multimodal:ti,ab,kw	88960
#91	#80 OR #81 OR #82 OR #83 OR #84 OR #85 OR #86 OR #87 OR #88 OR #89 OR #90	232978
#92	#28 OR #33 OR #38 OR #50 OR #53 OR #58 OR #70 OR #74 OR #79 OR #91	883951

#93	#22 AND #92	26353
#94	parihs:ti,ab,kw	266
#95	cfir:ti,ab,kw	1262
#96	enabler*:ti,ab,kw	8043
#97	belief*:ti,ab,kw	134464
#98	tdf:ti,ab,kw	9530
#99	implement*:ti,ab,kw	972575
#100	barrier*:ti,ab,kw	544113
#101	perceive*:ti,ab,kw	379227
#102	motivate*:ti,ab,kw	73314
#103	improvement\$:ti,ab,kw	1509001
#104	obstacle*:ti,ab,kw	83868
#105	eric:ti,ab,kw	7874
#106	problem*:ti,ab,kw	1645005
#107	obstruct*:ti,ab,kw	511190
#108	failure*:ti,ab,kw	1367464
#109	determinant*:ti,ab,kw	367241
#110	experience*:ti,ab,kw	2036599
#111	difficult*:ti,ab,kw	1112872
#112	facilitat*:ti,ab,kw	906453
#113	success*:ti,ab,kw	1929795
#114	challenge*:ti,ab,kw	1213092
#115	constrain*:ti,ab,kw	212032
#116	((attitude* OR perception* OR perspective* OR involve* OR participat* OR behavior) NEAR/3 change):ti,ab,kw	39771
#117	(guideline\$ NEAR/3 (adherence OR compliance OR comply OR adhere OR follow*)):ti,ab,kw	57119
#118	#94 OR #95 OR #96 OR #97 OR #98 OR #99 OR #100 OR #101 OR #102 OR #103 OR #104 OR #105 OR #106 OR #107 OR #108 OR #109 OR #110 OR #111 OR #112 OR #113 OR #114 OR #115 OR #116 OR #117	11104686
#119	'implementation science'/de	5844
#120	'guideline adherence'/de	22032
#121	'patient compliance'/de	158660
#122	#119 OR #120 OR #121	185604
#123	#118 OR #122	11196145
#124	#93 AND #123	16349



#125	'meta-analysis'/exp OR 'meta-analysis' OR 'systematic review'/exp OR 'systematic review'	754985
#126	'meta ethnograph*':ti,ab,kw OR metaethnograph*':ti,ab,kw	1081
#127	#125 OR #126	755371
#128	#124 AND #127	1224
#129	#128 AND [2013-2023]/py	956
#130	#129 NOT [medline]/lim	386
#131	#130 NOT ('conference abstract'/it OR 'conference paper'/it OR 'conference review'/it)	160
#132	#131 AND [2023-2024]/py	42

1.2.3 Cochrane

Date	29/04/2024 16:07:18	
Database	Cochrane	
Search strategy		
#1	[mh ^"Chronic Pain"]	4522
#2	[mh ^"intractable pain"]	347
#3	#1 or #2	4849
#4	("chronic" NEXT pain?):SO	5
#5	(chronic:ti,ab,kw NEAR/2 pain?:ti,ab,kw)	18304
#6	("intractable" NEXT pain?):ti,ab,kw	295
#7	("refractory" NEXT pain?):ti,ab,kw	111
#8	("functional" NEXT pain*):ti,ab,kw	77
#9	("idiopathic" NEXT pain*):ti,ab,kw	35
#10	("long-term" NEXT pain*):ti,ab,kw	399
#11	("persistent" NEXT pain*):ti,ab,kw	1075
#12	(sub-acute:ti,ab,kw NEAR/3 pain?:ti,ab,kw)	81
#13	(subacute:ti,ab,kw NEAR/3 pain?:ti,ab,kw)	330
#14	"widespread pain":ti,ab,kw	449
#15	("diffuse" NEXT pain?):ti,ab,kw	54
#16	("nociceptive" NEXT pain?):ti,ab,kw	18
#17	("somatoform" NEXT disorder?):ti,ab,kw	964
#18	somatization?:ti,ab,kw	854
#19	("somatic symptom" NEXT disorder?):ti,ab,kw	74
#20	#4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19	21717
#21	#3 OR #20	21918

#22	#21 NOT ([mh animals] NOT [mh ^humans])	21906
#23	[mh ^"Psychosocial interventions"]	272
#24	(Psychosocial:ti,ab,kw NEAR/2 intervention*:ti,ab,kw)	3387
#25	("psychosocial" NEXT treatment?):ti,ab,kw	960
#26	("psychological" NEXT intervention?):ti,ab,kw	3788
#27	#24 OR #25 OR #26	7647
#28	#23 OR #27	7647
#29	[mh "Holistic Health"]	113
#30	holistic:ti,ab,kw	1786
#31	holism:ti,ab,kw	8
#32	wholistic:ti,ab,kw	20
#33	"whole person":ti,ab,kw	77
#34	#30 OR #31 OR #32 OR #33	1883
#35	#29 OR #34	1884
#36	[mh ^"Healthy lifestyle"]	566
#37	lifestyle*:ti,ab,kw	28943
#38	("life" NEXT style?):ti,ab,kw	7361
#39	#37 OR #38	30924
#40	#36 OR #39	30924
#41	[mh ^"Self-help groups"]	860
#42	(self-help NEXT group?):ti,ab,kw	1080
#43	("Support" NEXT group?):ti,ab,kw	2440
#44	('Therapeutic social' NEXT club?):ti,ab,kw	1
#45	"peer support":ti,ab,kw	1796
#46	"online groups":ti,ab,kw	52
#47	"community support":ti,ab,kw	274
#48	"support meetings":ti,ab,kw	41
#49	"support communities":ti,ab,kw	6
#50	(group:ti,ab,kw NEAR/3 intervention?:ti,ab,kw)	155026
#51	#42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50	158645
#52	#41 OR #51	158645
#53	[mh ^"Self care"]	5253
#54	"Self care":ti,ab,kw	15417
#55	#53 OR #54	15417
#56	[mh ^"Psychosocial support systems"]	111



#57	"Psychosocial support":ti,ab,kw	820
#58	("Social support" NEXT system*):ti,ab,kw	66
#59	#57 OR #58	886
#60	#56 OR #59	886
#61	[mh ^"Behavior Therapy"]	5976
#62	[mh "Behavior Therapy"]	24747
#63	[mh ^"Cognitive Behavioral Therapy"]	11714
#64	[mh "Cognitive Behavioral Therapy"]	13978
#65	#61 OR #64	19604
#66	(behavio?r NEXT therap*):SO	1698
#67	(behavio?ral NEXT therap*):ti,ab,kw	22025
#68	("cognition" NEXT therap*):ti,ab,kw	38
#69	("cognitive" NEXT psychotherap*):ti,ab,kw	64
#70	(behavio?r? NEXT treatment?):ti,ab,kw	261
#71	(behavio?r? NEXT modification?):ti,ab,kw	1180
#72	("conditioning" NEXT therap*):ti,ab,kw	119
#73	#66 OR #67 OR #68 OR #69 OR #70 OR #71 OR #72	24809
#74	#65 OR #73	31894
#75	[mh ^Self-Management]	1237
#76	self-manag*:ti,ab,kw	11611
#77	("pain" NEXT manag*):ti,ab,kw	15361
#78	self-help:ti,ab,kw	4943
#79	#76 OR #77 OR #78	31287
#80	#75 OR #79	31287
#81	"BPS model":ti,ab,kw	4
#82	biopsychosocial:ti,ab,kw	905
#83	#81 OR #82	905
#84	"Motivational Enhancement Therapy":ti,ab,kw	377
#85	"Pain science education":ti,ab,kw	17
#86	"Pain neuroscience education":ti,ab,kw	281
#87	"pain neurophysiology education":ti,ab,kw	26
#88	"pain neurophysiology education":ti,ab,kw	26
#89	"explain pain":ti,ab,kw	26
#90	"health education":ti,ab,kw	14446
#91	"pain education":ti,ab,kw	425

#92	#84 OR #85 OR #86 OR #87 OR #88 OR #89 OR #90 OR #91	15494
#93	multimodal:ti,ab,kw	8676
#94	#28 OR #35 OR #40 OR #52 OR #55 OR #60 OR #74 OR #80 OR #83 OR #92 OR #93	254744
#95	#22 AND #94	6952
#96	PARIHS:ti,ab,kw	49
#97	CFIR:ti,ab,kw	179
#98	enabler*:ti,ab,kw	500
#99	belief*:ti,ab,kw	11065
#100	tdf:ti,ab,kw	2220
#101	implement*:ti,ab,kw	60848
#102	barrier*:ti,ab,kw	27162
#103	perceive*:ti,ab,kw	38181
#104	motivate*:ti,ab,kw	5487
#105	improvement?:ti,ab,kw	230867
#106	obstacle*:ti,ab,kw	2650
#107	ERIC:ti,ab,kw	866
#108	problem*:ti,ab,kw	80430
#109	obstruct*:ti,ab,kw	46246
#110	failure*:ti,ab,kw	126933
#111	determinant*:ti,ab,kw	10166
#112	experience*:ti,ab,kw	137912
#113	difficult*:ti,ab,kw	51612
#114	facilitat*:ti,ab,kw	39882
#115	success*:ti,ab,kw	96997
#116	challenge*:ti,ab,kw	38175
#117	constrain*:ti,ab,kw	5738
#118	((attitude*:ti,ab,kw OR perception*:ti,ab,kw OR perspective*:ti,ab,kw OR involve*:ti,ab,kw OR participat*:ti,ab,kw OR Behavior:ti,ab,kw) NEAR/3 change:ti,ab,kw)	11990
#119	(guideline?:ti,ab,kw NEAR/3 (adherence:ti,ab,kw OR compliance:ti,ab,kw OR comply:ti,ab,kw OR adhere:ti,ab,kw OR follow*:ti,ab,kw))	5240
#120	#96 OR #97 OR #98 OR #99 OR #100 OR #101 OR #102 OR #103 OR #104 OR #105 OR #106 OR #107 OR #108 OR #109 OR #110 OR #111 OR #112 OR #113 OR #114 OR #115 OR #116 OR #117 OR #118 OR #119	729591
#121	[mh ^"implementation science"]	97
#122	[mh ^"Guideline adherence"]	1595
#123	[mh ^"Patient compliance"]	11805



#124	#121 OR #122 OR #123	13429
#125	#120 OR #124	735208
#126	#95 AND #125	4248
#127	#126 with Cochrane Library publication date Between Jan 2013 and Dec 2024	3790
#128	#127 in Cochrane Reviews	51

1.2.4 PsychInfo

Date	April Week 4 2024	
Database	APA PsycInfo <2002 to April Week 4 2024>	
Search strategy		
1	chronic pain/	13690
2	chronic pain?.jw.	0
3	(chronic adj2 pain?).tw.	19872
4	intractable pain?.tw.	173
5	refractory pain?.tw.	82
6	functional pain*.tw.	98
7	idiopathic pain*.tw.	51
8	long-term pain*.tw.	206
9	persistent pain*.tw.	1271
10	(sub-acute adj3 pain?).tw.	29
11	(subacute adj3 pain?).tw.	85
12	"widespread pain".tw.	557
13	diffuse pain?.tw.	43
14	nociplastic pain?.tw.	41
15	somatoform disorder?.tw.	1890
16	somatization?.tw.	3740
17	somatic symptom disorder?.tw.	543
18	2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17	26615
19	1 or 18	28091
20	19 not (exp animals/ not humans/)	25965
21	Psychosocial intervention.jx.	191
22	(Psychosocial adj2 intervention*).tw.	7231
23	psychosocial treatment?.tw.	2701
24	psychological intervention?.tw.	7903



25	21 or 22 or 23 or 24	17276
26	(Psychosocial adj2 intervention*).ti.	1333
27	21 or 22 or 23 or 24 or 25 or 26	17276
28	intervention/	92090
29	exp Psychosocial Rehabilitation/	7770
30	28 or 29	98951
31	27 or 30	110259
32	exp Holistic Health/	1531
33	holistic.tw.	21660
34	holism.tw.	717
35	wholistic.tw.	183
36	whole person.tw.	1297
37	33 or 34 or 35 or 36	23429
38	32 or 37	23587
39	exp lifestyle/	11671
40	lifestyle*.tw.	31886
41	life style*.tw.	1723
42	40 or 41	33232
43	39 or 42	34223
44	exp support groups/	4356
45	Self-help group*.tw.	1032
46	Support group*.tw.	6502
47	Therapeutic social club*.tw.	1
48	peer support.tw.	5941
49	online groups.tw.	323
50	community support.tw.	2083
51	support meetings.tw.	65
52	support communities.tw.	141
53	(group adj3 intervention?).tw.	23404
54	45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53	37812
55	44 or 54	39670
56	exp Self-Care/	3574
57	Self care.tw.	11556
58	56 or 57	11617
59	exp Social Support/	32939



60	Psychosocial support.tw.	2583
61	Social support system*.tw.	629
62	59 or 60 or 61	35393
63	exp behavior therapy/	75538
64	exp Cognitive Behavior Therapy/	46951
65	63 or 64	75538
66	behavio?r therap*.tw,jx.	18855
67	behavio?ral therap*.tw.	25054
68	cognition therap*.tw.	14
69	cognitive psychotherap*.tw.	273
70	behavio?r? treatment?.tw.	486
71	behavio?r? modification?.tw.	1255
72	conditioning therap*.tw.	6
73	66 or 67 or 68 or 69 or 70 or 71 or 72	41557
74	65 or 73	89181
75	exp self-management/	6590
76	self-Help Techniques/	2844
77	75 or 76	9393
78	self-manag*.tw.	11940
79	pain manag*.tw.	8065
80	self-help.tw.	6381
81	78 or 79 or 80	25935
82	77 or 81	26988
83	exp Biopsychosocial Approach/	3303
84	BPS model.tw.	75
85	biopsychosocial.tw.	7864
86	84 or 85	7868
87	83 or 86	8360
88	exp Motivational Interviewing/	3105
89	Motivational Enhancement Therapy.tw.	385
90	Pain science education.tw.	17
91	Pain neuroscience education.tw.	45
92	pain neurophysiology education.tw.	8
93	pain neurophysiology education.tw.	8
94	explain pain.tw.	26

95	health education.tw.	10586
96	pain education.tw.	234
97	89 or 90 or 91 or 92 or 93 or 94 or 95 or 96	11273
98	88 or 97	14187
99	multimodal.tw.	13832
100	exp Multimodal Treatment Approach/	10117
101	99 or 100	23340
102	31 or 38 or 43 or 55 or 58 or 62 or 74 or 82 or 87 or 98 or 101	351576
103	20 and 102	7462
104	PARIHS.tw.	79
105	CFIR.tw.	239
106	enabler*.tw.	2742
107	belief*.tw.	118098
108	tdf.tw.	270
109	implement*.tw.	209022
110	barrier*.tw.	90823
111	perceive*.tw.	242761
112	motivate*.tw.	41972
113	improvement?.tw.	149442
114	obstacle*.tw.	18828
115	ERIC.tw.	4572
116	problem*.tw.	394931
117	obstruct*.tw.	9624
118	failure*.tw.	57826
119	determinant*.tw.	46947
120	experience*.tw.	629483
121	difficult*.tw.	212002
122	facilitat*.tw.	164059
123	success*.tw.	223976
124	challenge*.tw.	245158
125	constrain*.tw.	51089
126	((attitude* or perception* or perspective* or involve* or participat* or Behavior) adj3 change).tw.	24083
127	(guideline? adj3 (adherence or compliance or comply or adhere or follow*)).tw.	4975



128	104 or 105 or 106 or 107 or 108 or 109 or 110 or 111 or 112 or 113 or 114 or 115 or 116 or 117 or 118 or 119 or 120 or 121 or 122 or 123 or 124 or 125 or 126 or 127	1885887
129	exp Treatment Compliance/	14067
130	128 or 129	1890810
131	103 and 130	5113
132	limit 131 to systematic reviews	184
133	((systematic review or systematic literature review or systematic scoping review or systematic narrative review or systematic qualitative review or systematic evidence review or systematic quantitative review or systematic meta-review or systematic critical review or systematic mixed studies review or systematic mapping review or systematic cochrane review or "systematic search and review" or systematic integrative review).ti. not comment.pt. not (protocol or protocols).ti. not medline.st.) or (Cochrane Database Syst Rev.jx. and review.pt.) or systematic review.pt.	39211
134	meta-analys*.ti.	26501
135	meta-analysis.pt.	0
136	(meta-ethnograph* or metaethnograph*).tw.	613
137	133 or 134 or 135 or 136	55774
138	131 and 137	174
139	132 or 138	216
140	limit 139 to yr="2013-Current"	184
141	limit 139 to yr="2023-Current"	27

1.2.5 Cinahl

Date	Friday, May 03, 2024 2:40:07 PM	
Database	Cinahl	
Search strategy		
S1	(MH "Chronic Pain")	26,968
S2	(MH "Chronic Pain (Saba CCC)")	1
S3	(MH "Chronic Pain (NANDA)")	13
S4	S1 OR S2 OR S3	26,978
S5	(SO chronic pain#)	180
S6	((TI chronic OR AB chronic OR SU chronic) N2 (TI pain# OR AB pain# OR SU pain#))	47,756
S7	(TI "intractable pain#" OR AB "intractable pain#" OR SU "intractable pain#")	548
S8	(TI "refractory pain#" OR AB "refractory pain#" OR SU "refractory pain#")	265
S9	(TI "functional pain*" OR AB "functional pain*" OR SU "functional pain*")	138
S10	(TI "idiopathic pain*" OR AB "idiopathic pain*" OR SU "idiopathic pain*")	56

S11	(TI "long-term pain*" OR AB "long-term pain*" OR SU "long-term pain*")	612
S12	(TI "persistent pain*" OR AB "persistent pain*" OR SU "persistent pain*")	2,510
S13	((TI sub-acute OR AB sub-acute OR SU sub-acute) N3 (TI pain# OR AB pain# OR SU pain#))	99
S14	((TI subacute OR AB subacute OR SU subacute) N3 (TI pain# OR AB pain# OR SU pain#))	413
S15	(TI "widespread pain" OR AB "widespread pain" OR SU "widespread pain")	1,004
S16	(TI "diffuse pain#" OR AB "diffuse pain#" OR SU "diffuse pain#")	122
S17	(TI "nociplastic pain#" OR AB "nociplastic pain#" OR SU "nociplastic pain#")	76
S18	(TI "somatoform disorder#" OR AB "somatoform disorder#" OR SU "somatoform disorder#")	4,271
S19	(TI somatization# OR AB somatization# OR SU somatization#)	1,768
S20	(TI "somatic symptom disorder#" OR AB "somatic symptom disorder#" OR SU "somatic symptom disorder#")	257
S21	S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20	56,341
S22	S4 OR S21	56,341
S23	S22 NOT ((MH animals+) NOT (MH humans))	55,545
S24	(MH "Psychosocial intervention")	1,304
S25	((TI Psychosocial OR AB Psychosocial OR SU Psychosocial) N2 (TI intervention* OR AB intervention* OR SU intervention*))	6,436
S26	(TI "psychosocial treatment#" OR AB "psychosocial treatment#" OR SU "psychosocial treatment#")	1,008
S27	(TI "psychological intervention#" OR AB "psychological intervention#" OR SU "psychological intervention#")	4,178
S28	S25 OR S26 OR S27	10,985
S29	S24 OR S28	10,985
S30	(MH "Holistic Health")	2,824
S31	(TI holistic OR AB holistic OR SU holistic)	27,936
S32	(TI holism OR AB holism OR SU holism)	585
S33	(TI wholistic OR AB wholistic OR SU wholistic)	240
S34	(TI "whole person" OR AB "whole person" OR SU "whole person")	1,132
S35	S31 OR S32 OR S33 OR S34	29,215
S36	S30 OR S35	29,215
S37	(MH "Life Style")	30,819
S38	(TI lifestyle* OR AB lifestyle* OR SU lifestyle*)	56,830
S39	(TI "life style*" OR AB "life style*" OR SU "life style*")	57,278
S40	S38 OR S39	90,953

S41	S37 OR S40	90,953
S42	(MH "Support Groups")	11,556
S43	(TI "Self-help group*" OR AB "Self-help group*" OR SU "Self-help group*")	943
S44	(TI "Support group*" OR AB "Support group*" OR SU "Support group*")	15,352
S45	(TI "Therapeutic social club" OR AB "Therapeutic social club" OR SU "Therapeutic social club")	1,168
S46	(TI "peer support" OR AB "peer support" OR SU "peer support")	5,653
S47	(TI "online groups" OR AB "online groups" OR SU "online groups")	124
S48	(TI "community support" OR AB "community support" OR SU "community support")	2,060
S49	(TI "support meetings" OR AB "support meetings" OR SU "support meetings")	70
S50	(TI "support communities" OR AB "support communities" OR SU "support communities")	88
S51	((TI group OR AB group OR SU group) N3 (TI intervention# OR AB intervention# OR SU intervention#))	48,691
S52	S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51	69,913
S53	S42 OR S52	69,913
S54	(MH "Self care+")	61,392
S55	(TI "Self care" OR AB "Self care" OR SU "Self care")	62,948
S56	S54 OR S55	78,401
S57	(MH "Support, Psychosocial+")	107,337
S58	(TI "Psychosocial support" OR AB "Psychosocial support" OR SU "Psychosocial support")	2,765
S59	(TI "Social support system*" OR AB "Social support system*" OR SU "Social support system*")	501
S60	S58 OR S59	3,265
S61	S57 OR S60	109,023
S62	(MH "Behavior Therapy")	13,289
S63	(MH "Cognitive Therapy+")	30,922
S64	S62 OR S63	42,791
S65	(SO "behavior#r therap*")	3,070
S66	(TI "behavior#ral therap*" OR AB "behavior#ral therap*" OR SU "behavior#ral therap*")	11,036
S67	(TI "cognition therap*" OR AB "cognition therap*" OR SU "cognition therap*")	5
S68	(TI "cognitive psychotherap*" OR AB "cognitive psychotherap*" OR SU "cognitive psychotherap*")	50
S69	(TI "behavior#r# treatment#" OR AB "behavior#r# treatment#" OR SU "behavior#r# treatment#")	221

S70	(TI "behavior# modification#" OR AB "behavior# modification#" OR SU "behavior# modification#")	3,471
S71	(TI "conditioning therap*" OR AB "conditioning therap*" OR SU "conditioning therap*")	54
S72	S65 OR S66 OR S67 OR S68 OR S69 OR S70 OR S71	17,575
S73	S64 OR S72	52,570
S74	(MH Self-Management)	3,754
S75	(TI "pain manag*" OR AB "pain manag*" OR SU "pain manag*")	32,950
S76	(TI self-manag* OR AB self-manag* OR SU self-manag*)	20,707
S77	(TI self-help OR AB self-help OR SU self-help)	4,165
S78	S75 OR S76 OR S77	57,124
S79	S74 OR S78	57,124
S80	(MH "Models, Biopsychosocial")	568
S81	(TI "BPS model" OR AB "BPS model" OR SU "BPS model")	28
S82	(TI biopsychosocial OR AB biopsychosocial OR SU biopsychosocial)	5,098
S83	S81 OR S82	5,100
S84	S80 OR S83	5,100
S85	(MH "Motivational Interviewing")	4,278
S86	(TI "Motivational Enhancement Therapy" OR AB "Motivational Enhancement Therapy" OR SU "Motivational Enhancement Therapy")	245
S87	(TI "Pain science education" OR AB "Pain science education" OR SU "Pain science education")	35
S88	(TI "Pain neuroscience education" OR AB "Pain neuroscience education" OR SU "Pain neuroscience education")	187
S89	(TI "pain neurophysiology education" OR AB "pain neurophysiology education" OR SU "pain neurophysiology education")	27
S90	(TI "pain neurophysiology education" OR AB "pain neurophysiology education" OR SU "pain neurophysiology education")	27
S91	(TI "explain pain" OR AB "explain pain" OR SU "explain pain")	49
S92	(TI "health education" OR AB "health education" OR SU "health education")	55,773
S93	(TI "pain education" OR AB "pain education" OR SU "pain education")	1,460
S94	S85 OR S86 OR S87 OR S88 OR S89 OR S90 OR S91 OR S92 OR S93	61,656
S95	(TI multimodal OR AB multimodal OR SU multimodal)	12,030
S96	S29 OR S36 OR S41 OR S53 OR S56 OR S61 OR S73 OR S79 OR S84 OR S94 OR S95	495,489
S97	S23 AND S96	12,960
S98	(TI PARIHS OR AB PARIHS OR SU PARIHS)	165
S99	(TI CFIR OR AB CFIR OR SU CFIR)	495



S100	(TI enabler* OR AB enabler* OR SU enabler*)	3,741
S101	(TI belief* OR AB belief* OR SU belief*)	65,592
S102	(TI tdf OR AB tdf OR SU tdf)	1,135
S103	(TI implement* OR AB implement* OR SU implement*)	271,540
S104	(TI barrier* OR AB barrier* OR SU barrier*)	125,562
S105	(TI perceive* OR AB perceive* OR SU perceive*)	154,735
S106	(TI motivate* OR AB motivate* OR SU motivate*)	17,046
S107	(TI improvement# OR AB improvement# OR SU improvement#)	311,323
S108	(TI obstacle* OR AB obstacle* OR SU obstacle*)	15,791
S109	(TI ERIC OR AB ERIC OR SU ERIC)	5,625
S110	(TI problem* OR AB problem* OR SU problem*)	321,584
S111	(TI obstruct* OR AB obstruct* OR SU obstruct*)	87,545
S112	(TI failure* OR AB failure* OR SU failure*)	264,539
S113	(TI determinant* OR AB determinant* OR SU determinant*)	69,618
S114	(TI experience* OR AB experience* OR SU experience*)	563,104
S115	(TI difficult* OR AB difficult* OR SU difficult*)	186,892
S116	(TI facilitat* OR AB facilitat* OR SU facilitat*)	149,725
S117	(TI success* OR AB success* OR SU success*)	266,550
S118	(TI challenge* OR AB challenge* OR SU challenge*)	239,445
S119	(TI constrain* OR AB constrain* OR SU constrain*)	27,680
S120	((TI attitude* OR AB attitude* OR SU attitude*) OR (TI perception* OR AB perception* OR SU perception*) OR (TI perspective* OR AB perspective* OR SU perspective*) OR (TI involve* OR AB involve* OR SU involve*) OR (TI participat* OR AB participat* OR SU participat*) OR (TI Behavior OR AB Behavior OR SU Behavior)) N3 (TI change OR AB change OR SU change))	38,353
S121	((TI guideline# OR AB guideline# OR SU guideline#) N3 ((TI adherence OR AB adherence OR SU adherence) OR (TI compliance OR AB compliance OR SU compliance) OR (TI comply OR AB comply OR SU comply) OR (TI adhere OR AB adhere OR SU adhere) OR (TI follow* OR AB follow* OR SU follow*)))	30,573
S122	S98 OR S99 OR S100 OR S101 OR S102 OR S103 OR S104 OR S105 OR S106 OR S107 OR S108 OR S109 OR S110 OR S111 OR S112 OR S113 OR S114 OR S115 OR S116 OR S117 OR S118 OR S119 OR S120 OR S121	2,205,893
S123	(MH "implementation science")	1,350
S124	(MH "Guideline adherence")	17,593

S125	(MH "Patient compliance")	35,178
S126	S123 OR S124 OR S125	53,692
S127	S122 OR S126	2,223,904
S128	S97 AND S127	6,938
S129	((((TI "systematic review") OR (TI "systematic literature review") OR (TI "systematic scoping review") OR (TI "systematic narrative review") OR (TI "systematic qualitative review") OR (TI "systematic evidence review") OR (TI "systematic quantitative review") OR (TI "systematic meta-review") OR (TI "systematic critical review") OR (TI "systematic mixed studies review") OR (TI "systematic mapping review") OR (TI "systematic cochrane review") OR (TI "systematic search and review") OR (TI "systematic integrative review"))) NOT (PT comment) NOT ((TI protocol) OR (TI protocols)) NOT medline.st.) OR (SO "Cochrane Database Syst Rev" AND (PT review)) OR (PT "systematic review"))	202,860
S130	(TI meta-analys*)	85,168
S131	(PT meta-analysis)	3,706
S132	((TI meta-ethnograph* OR AB meta-ethnograph* OR SU meta-ethnograph*) OR (TI metaethnograph* OR AB metaethnograph* OR SU metaethnograph*))	777
S133	S129 OR S130 OR S131 OR S132	230,565
S134	S128 AND S133	487
S135	S134 - Publication Date: 20230301-20241231	51
S136	S135 - Peer Reviewed	49

1.2.6 Pedro

<i>Date</i>	2024-04-30	
<i>Database</i>	PEDro	
<i>Search strategy</i>		
<i>1</i>	“chronic pain” AND “systematic review” limited to 2023-2024	13



1.3 Methodological framework for the assessment of evidence quality

Systematic reviews of RCTs and non-randomised trials were assessed by the AMSTAR 2 checklist.¹ Risk of bias in systematic reviews of qualitative studies was assessed by ROBIS.²

1.3.1 AMSTAR 2

For the risk of bias assessment using AMSTAR 2, the quality of the review is considered as:

1. High when no or one non-critical weakness was identified,
2. Moderate when more than one non-critical weakness were identified,
3. Low when one critical flaw with or without non-critical weaknesses was identified and
4. Critically low when more than one critical flaw with or without non-critical weaknesses were identified

Table 1 presents the list of critical and non-critical domains of the AMSTAR 2 tool.¹

Table 1 – Critical and non-critical domains in AMSTAR 2

Domain number	Critical or non-critical domain	Content of the domain
1	Non-critical domain	Did the research questions and inclusion criteria for the review include the components of PICO?
2	Critical domain	Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?
3	Non-critical domain	Did the review authors explain their selection of the study designs for inclusion in the review?
4	Critical domain	Did the review authors use a comprehensive literature search strategy?
5	Non-critical domain	Did the review authors perform study selection in duplicate?
6	Non-critical domain	Did the review authors perform data extraction in duplicate?
7	Critical domain	Did the review authors provide a list of excluded studies and justify the exclusions?
8	Non-critical domain	Did the review authors describe the included studies in adequate detail?
9	Critical domain	Did the review authors use a satisfactory technique for assessing the risk of bias in individual studies that were included in the review?
10	Non-critical domain	Did the review authors report on the sources of funding for the studies included in the review?
11	Critical domain	If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results?
12	Non-critical domain	If meta-analysis was performed, did the review authors assess the potential impact of risk of bias in individual studies on the results of the meta-analysis or other evidence synthesis?

13	Critical domain	Did the review authors account for risk of bias in individual studies when interpreting/ discussing the results of the review?
14	Non-critical domain	Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?
15	Critical domain	If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?
16	Non-critical domain	Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?



1.3.2 ROBIS

ROBIS: Tool to assess risk of bias in systematic reviews

Phase 1: Assessing relevance (Optional)

ROBIS is designed to assess the risk of bias in reviews with questions relating to interventions, aetiology, diagnosis and prognosis. State your overview/guideline question (target question) and the question being addressed in the review being assessed:

Intervention reviews:

Category	Target question (e.g. overview or guideline)	Review being assessed
Patients/Population(s):		
Intervention(s):		
Comparator(s):		
Outcome(s):		

For aetiology reviews:

Category	Target question (e.g. overview or guideline)	Review being assessed
Patients/Population(s):		
Exposure(s) and comparator(s):		
Outcome(s):		

For DTA reviews:

Category	Target question (e.g. overview or guideline)	Review being assessed
Patients):		
Index test(s):		
Reference standard:		
Target condition:		

For prognostic reviews:

Category	Target question (e.g. overview or guideline)	Review being assessed
Patients:		
Outcome to be predicted:		
Intended use of model:		
Intended moment in time:		

Does the question addressed by the review match the target question?

YES/NO/UNCLEAR

Phase 2: Identifying concerns with the review process

DOMAIN 1: STUDY ELIGIBILITY CRITERIA

Describe the study eligibility criteria, any restrictions on eligibility and whether there was evidence that objectives and eligibility criteria were pre-specified:

1.1 Did the review adhere to pre-defined objectives and eligibility criteria?	Y/PY/PN/N/NI
1.2 Were the eligibility criteria appropriate for the review question?	Y/PY/PN/N/NI
1.3 Were eligibility criteria unambiguous?	Y/PY/PN/N/NI
1.4 Were any restrictions in eligibility criteria based on study characteristics appropriate (e.g. date, sample size, study quality, outcomes measured)?	Y/PY/PN/N/NI
1.5 Were any restrictions in eligibility criteria based on sources of information appropriate (e.g. publication status or format, language, availability of data)?	Y/PY/PN/N/NI

Concerns regarding specification of study eligibility criteria LOW/HIGH/UNCLEAR

Rationale for concern:

DOMAIN 2: IDENTIFICATION AND SELECTION OF STUDIES

Describe methods of study identification and selection (e.g. number of reviewers involved):

2.1 Did the search include an appropriate range of databases/electronic sources for published and unpublished reports?	Y/PY/PN/N/NI
2.2 Were methods additional to database searching used to identify relevant reports?	Y/PY/PN/N/NI
2.3 Were the terms and structure of the search strategy likely to retrieve as many eligible studies as possible?	Y/PY/PN/N/NI
2.4 Were restrictions based on date, publication format, or language appropriate?	Y/PY/PN/N/NI
2.5 Were efforts made to minimise error in selection of studies?	Y/PY/PN/N/NI

Concerns regarding methods used to identify and/or select studies LOW/HIGH/UNCLEAR

Rationale for concern:

DOMAIN 3: DATA COLLECTION AND STUDY APPRAISAL

Describe methods of data collection, what data were extracted from studies or collected through other means, how risk of bias was assessed (e.g. number of reviewers involved) and the tool used to assess risk of bias:

3.1 Were efforts made to minimise error in data collection?	Y/PY/PN/N/NI
3.2 Were sufficient study characteristics available for both review authors and readers to be able to interpret the results?	Y/PY/PN/N/NI
3.3 Were all relevant study results collected for use in the synthesis?	Y/PY/PN/N/NI
3.4 Was risk of bias (or methodological quality) formally assessed using appropriate criteria?	Y/PY/PN/N/NI
3.5 Were efforts made to minimise error in risk of bias assessment?	Y/PY/PN/N/NI

Concerns regarding methods used to collect data and appraise studies LOW/HIGH/UNCLEAR

Rationale for concern:



DOMAIN 4: SYNTHESIS AND FINDINGS

Describe synthesis methods:

4.1 Did the synthesis include all studies that it should?	Y/PY/PN/N/NI
4.2 Were all pre-defined analyses reported or departures explained?	Y/PY/PN/N/NI
4.3 Was the synthesis appropriate given the nature and similarity in the research questions, study designs and outcomes across included studies?	Y/PY/PN/N/NI
4.4 Was between-study variation (heterogeneity) minimal or addressed in the synthesis?	Y/PY/PN/N/NI
4.5 Were the findings robust, e.g. as demonstrated through funnel plot or sensitivity analyses?	Y/PY/PN/N/NI
4.6 Were biases in primary studies minimal or addressed in the synthesis?	Y/PY/PN/N/NI
Concerns regarding the synthesis and findings	LOW/HIGH/UNCLEAR
Rationale for concern:	

Y=YES, PY=PROBABLY YES, PN=PROBABLY NO, N=NO, NI=NO INFORMATION

Phase 3: Judging risk of bias

Summarize the concerns identified during the Phase 2 assessment:

Domain	Concern	Rationale for concern
1. Concerns regarding specification of study eligibility criteria		
2. Concerns regarding methods used to identify and/or select studies		
3. Concerns regarding methods used to collect data and appraise studies		
4. Concerns regarding the synthesis and findings		

RISK OF BIAS IN THE REVIEW

Describe whether conclusions were supported by the evidence:

A. Did the interpretation of findings address all of the concerns identified in Domains 1 to 4?	Y/PY/PN/N/NI
B. Was the relevance of identified studies to the review's research question appropriately considered?	Y/PY/PN/N/NI
C. Did the reviewers avoid emphasizing results on the basis of their statistical significance?	Y/PY/PN/N/NI
Risk of bias in the review	RISK: LOW/HIGH/UNCLEAR
Rationale for risk:	

Y=YES, PY=PROBABLY YES, PN=PROBABLY NO, N=NO, NI=NO INFORMATION

Source: Whiting P, Savovic J, Higgins JP, Caldwell DM, Reeves BC, Shea B, et al. ROBIS: A new tool to assess risk of bias in systematic reviews was developed. J Clin Epidemiol. 2016;69:225-34.

1.4 Quality appraisal

Table 2 – Quality appraisal – ROBIS – Barriers & facilitators to BPS approach of pain management

Study ID	Phase 1	Phase 2				Phase 3
		Domain 1	Domain 2	Domain 3	Domain 4	Risk of bias
<i>Almasri 2023 (a)</i> ³	Y (patients with cancer pain lasting for at least 3 months)	Low	Moderate	Moderate	High	High
<i>Altun 2022 (a)</i> ⁴	Y (refugees and immigrant with chronic pain)	Low	Moderate	Low	Moderate	Moderate
<i>Bryson-Campbell 2020 (a)(b)</i> ⁵	Y (strategy for support worker to live/work with CP)	Moderate	Moderate	High	High	High
<i>Devan 2018 (a)</i> ⁶	Y (people with persistent pain)	Low	Low	Low	Low	Low
<i>Dickson 2024 (a)</i> ⁷	Y (patients with chronic pain)	Low	Low	Low	Low	Low
<i>Driver 2017 (b)</i> ⁸	Y (physiotherapists and BPS but not only on chronic pain)	Low	Low	Low	Low	Low
<i>Emerson 2022 (a)(b)</i> ⁹	Y (chronic MSK pain management)	Low	Low	Low	Low	Low
<i>Fu 2016 (a)(b)</i> ¹⁰	Y (patients with chronic low back pain)	Low	Low - Mod.	Low	Low	Low
<i>Goldsmith 2023 (a)(b)</i> ¹¹	Y (adults with chronic pain)	Low	Low	Low	Moderate	Moderate
<i>Grant 2019 (a)</i> ¹²	Y (patients with chronic pain)	Low	Low	Low	Low	Low
<i>Leaviss 2020 (a)(b)</i> ¹³	+/- (patients with medically unexplained symptoms)	Low	Low	Low	High	Moderate
<i>Liedberg 2021 (a)(b)</i> ¹⁴	Y (persons with chronic pain)	Low	Low	Low	Low	Low
<i>Magalhães 2017 (b)</i> ¹⁵	Y (individuals with chronic pain)	Low	Low	Low	Low	Low
<i>Makris 2014 (a)(b)</i> ¹⁶	Y (older patient with persistent pain)	High	High	High	High	High
<i>Ng 2021 (b)</i> ¹⁷	Y (patients with musculoskeletal pain)	Low	Low	Low	Low	Low
<i>Spink 2021 (a)</i> ¹⁸	Y (patients with chronic pain)	Low	Low - Mod.	Low	Low	Low



Thompson 2016 (a)¹⁹	Y (patients with chronic pain)	Low	Low	High	Low	Moderate
Thompson 2022 (a)²⁰	Y (patient with chronic pain)	Low	Low - Mod	Moderate	Low to Mod	Moderate
Tousignant-Laflamme²¹	Y (patients with chronic low back pain)	Low	Low	Moderate	Moderate	Moderate
Toye 2017 (b)²²	Y (patient with chronic pain)	Low	Low	Low	Low	Low
Van Dijk 2022 (b)²³	Y (physiotherapists in primary care and BPS approach)	Low	Low	Moderate	Low	Moderate
Watson 2019 (a)²⁴	Y (adult patients chronic MSK pain)	Low	Low	Low	Low	Low
Westrap 2023 (a)(b)²⁵	+/- (opioids vs non pharmacological interventions)	Low	Mod - High	Mod - High	Mod - High	High
Ziegler 2022 (a)²⁶	Y (patients with chronic neuromusculoskeletal pain)	Low	Moderate	High	High	High

(a) section on facilitators and barriers reported by the patients (b) section on facilitators and barriers reported by the professionals

Low – mod: low to moderate / Mod – High: moderate to high

Y: Yes

Table 3 – Quality appraisal – AMSTAR – Barriers & facilitators to BPS approach of pain management

	1 PICO	2 A priori protocol	3 Study design criteria	4 Comprehensive search	5 Duplicate selection	6 Duplicate extraction	7 Excluded studies justification	8 Included studies details	9 Risk of bias	10 Funding sources of Included studies	11 Appropriate statistical methods	12 RoB in result	13 RoB in discussion	14 Explanation for heterogeneity	15 Publication bias	16 Conflict of interest	Overall level of quality
Connell 2022 (a) ²⁷	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	NA	NA	Yes	Yes	NA	Yes	High
van Erp 2019 (c) ²⁸	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	No	NA	NA	Yes	Yes	No	Yes	Criticall y low

Section on barriers and facilitators reported by professionals, (b) Section on potential interventions, (c) Section on barriers and facilitators reported by patients and professionals

Table 4 – Quality appraisal – ROBIS – Interventions for pain management

Study ID	Phase 1	Phase 2				Phase 3
		Domain 1	Domain 2	Domain 3	Domain 4	Risk of bias
<i>Altun 2022</i> ⁴	Y (refugees and immigrant with chronic pain)	Low	Moderate	Low	Moderate	Moderate
<i>Arnott 2023</i> ²⁹	Y (adults with chronic non-cancer pain)	Low	Low	Low	Low	Low
<i>Chapman 2022</i> ³⁰	Y (patients with chronic pain)	Low	Low	Low	Low	Low
<i>Chopra 2023</i> ³¹	Y (people > 75 years with chronic, noninflammatory musculoskeletal pain)	Low	Moderate	Moderate	Moderate	Moderate
<i>Dickson 2024</i> ⁷	Y (patients with chronic pain using high-value physiotherapy)	Low	Low	Low	Low	Low



Driver 2017⁸	Y (physiotherapists and BPS but not only on chronic pain)	Low	Low	Low	Low	Low
Fernandes 2022³²	Y (people with chronic pain)	Low	Low – Mod	Low	Low	Low
Leaviss 2020¹³	+/- (patients with medically unexplained symptoms)	Low	Low	Low	High	Moderate
Magalhães 2017¹⁵	Y (individuals with chronic pain)	Low	Low	Low	Low	Low
Makris 2014¹⁶	Y (older patient with persistent pain)	High	High	High	High	High
Mariano 2021³³	Y (patients with chronic pain)	Low	Low	Low	Low	Low
Mullins 2022³⁴	Y (patients with chronic pain)	Low	Low	Low	Low	Low
Ng 2021 (b)¹⁷	Y (patients with musculoskeletal)	Low	Low	Low	Low	Low
Van Dijk 2022 (b)²³	Y (physiotherapists in primary care and BPS approach)	Low	Low	Moderate	Low	Moderate
Yarycky 2024(b)³⁵	+/- (older adults with translation pain)	Low	Low - Mod	Low	Moderate	Moderate
Yarycky 2024(a)³⁶	+/- (older adults with translation pain)	Low	Low - Mod	Low	Moderate	Moderate

(a) section on facilitators and barriers reported by the patients (b) section on facilitators and barriers reported by the professionals (c) Low – mod: low to moderate / Mod – High: moderate to high

Table 5 – Quality appraisal – AMSTAR – Interventions for pain management

	1 PICO	2 A priori protocol	3 Study design criteria	4 Comprehensive search	5 Duplicate selection	6 Duplicate extraction	7 Excluded studies justification	8 Included studies details	9 Risk of bias	10 Funding sources of included studies	11 Appropriate statistical methods	12 RoB in result	13 RoB in discussion	14 Explanation for heterogeneity	15 Publication bias	16 Conflict of interest	Overall level of quality
Schafer 2018 (b) ³⁷	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Smith 2019 (b) ³⁸	Yes	No	No	Yes	Yes	Yes	No	Partially Yes	Yes	No	NA	NA	No	No	No	Yes	Critically low
Terpstra 2022 (b) ³⁹	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Moderate

(a) Section on barriers and facilitators reported by professionals, (b) Section on potential interventions, (c) Section on barriers and facilitators reported by patients and professionals



1.5 Evidence tables

1.5.1 Evidence table – Almasri 2022

Almasri 2022³	
Objective	
Clearly mentioned	To identify the main barriers and facilitators for cancer pain self-management.
Methods	
Design	Integrative review (i.e. a broad type of literature review that combines research studies conducted using various methodologies to encapsulate diverse perspectives to better understand the current state of evidence related to a specific phenomenon)
Source of funding and competing interest	Not stated
Search dates	No time restriction applied
Searched databases	PubMed/MEDLINE (biomedical science), CINAHL (nursing and allied health), Scopus (multidisciplinary), and Psych INFO (multidisciplinary)
Eligibility criteria	Population: Outpatients aged 18 years or older Disease: Cancer pain for 3 months or more Intervention: Pain Self-management Outcomes: Barriers or facilitators of cancer pain self-management Language: English
Exclusion criteria	Disease: Non-cancer pain (such as musculoskeletal pain)
Q.A. used	The JBI critical appraisal checklist for randomized controlled trials (13 items), descriptive studies (9 items), and qualitative research (10 items) tool was used. The cut-off score for inclusion of studies after the methodological appraisal was set at 6/13, 4/9, and 4/10 for the randomized controlled trials, descriptive, and qualitative research, respectively. Furthermore, the level of each study was determined according to the American Association of Critical Care Nurses level of evidence. The grading criteria depend on the methodological rigor and type of design. All the studies were matched with level C as they were descriptive and qualitative studies except the randomized controlled trial was matched with level B
(Statistical) analysis	NA

<i>Description of the included studies</i>	
Number of included studies	22
Design of included study	Quantitative (descriptive): 14 ; secondary data analysis: 3; qualitative (descriptive): 2; instrumentation component of RCT: 1; pilot cross sectional (correlational): 1; sequential multimethod quantitative-qualitative study: 1
Covered years	From 2000 to 2020 (50% of the studies were published after 2016)
Countries	Georgia (n=1), Jordan (n=1), Lithuania (n=1), Norway (n=2), Taiwan (n=3), Turkey (n=1), United Kingdom (n=1) , United States (n=10) + 1 multicentre (6 centres, in Germany, Iceland, Norway, United States)
Patient & disease characteristics	Cancer patients with pain
Interventions	Self-management of pain at home (outpatients)
Involved professionals	Not reported
Settings	Home/outpatient
<i>Results</i>	
Summary of findings	Tailoring pain self-management support requires an understanding of an individual's context. Factors identified as either facilitators or barriers to pain self-management include support from family, friends, and health care providers, and pain management-related knowledge. The main barriers were related to concerns regarding the use of pain medications, negative beliefs and attitudes, and psychological distress. The key enablers to cancer pain self-management were related to the active participation of the patients in pain management.
Barriers	- Patient characteristics - Age Older patients had more barriers to cancer pain self-management, poorer pain and pain management knowledge, more concern about potentially harmful effects of analgesics, and reluctance to communicate with health care providers about pain management behaviors at home - Gender Females had more hesitancy to use analgesics, particularly opioids, lower adherence, more fatalistic beliefs, and inadequate pain management Male patients had more tendency to express concerns that reporting pain could distract the physician from treating cancer it- self - Marital status



	Unmarried patients reported more concerns and obstacles to optimal pain management at home, which could be related to the need for family support - Educational level Patients with higher educational level reported fewer concerns for addiction, less negative attitudes toward pain and pain palliation and fewer communication barriers with health care providers - Ethnicity Black patients had more barriers to pain self-management than White patients Most of the Black patients reported many difficulties getting their opioid prescriptions filled at pharmacies, and the need to wait and return - Comorbidity and severe pain level. These patients experienced uncertainty in their health status, were more fatalistic about pain, and more concerned about the harmful effects of opioids. - Psychological distress (e.g. anxiety and depression) exerting a negative effect on their ability to self-manage their pain • Concerns regarding use of pain medication such as (1) fear of addiction, dependence, and tolerance (2) fear of side effects (e.g. sweating, dry mouth, loss of appetite, somnolence, and nausea) (3) fear of harm to the immune system (4) fear that analgesics mask changes in one's body (5) beliefs that taking pain medication was a sign of weakness (6) fear of loss of control, particularly impairment of cognitive ability (7) fear of injections • Patients' knowledge, beliefs, and attitudes: Knowledge deficit regarding cancer pain and pain self-management leading to (1) negative attitudes toward pain management (2) fear of death, the loss of control, and becoming dependent on drugs (3) fatalism – pain an inevitable part of cancer, and nothing can be done to control it • Unsupportive ambience from health care providers and family/significant others
Enablers	• Supportive ambience (family and health care providers) • Active participation of the patients in care process - self-discovery and self-awareness (e.g. self adaptation of medication doses and use of non pharmaceutical strategies), - acquiring pain knowledge (knowledge and information about the pain self-management process), - using a pain diary
Clinical implications	• Identification of barriers and facilitators - Identification of the main barriers and facilitators of cancer pain management at home guides practitioners in supporting pain self-management among patients with cancer. - Understand the main family-related barriers and facilitators that affect the ability and willingness of patients to self-manage their pain.

- Routinely assessment and evaluation (by nurses) the patients' barriers and facilitators that affect the process of cancer pain self-management. Nurses could help patients recognize their challenges and problems and try to help with solutions. Nurses could encourage patients to be engaged in the process of pain self-management and improve their self-efficacy
- Education
 - Health care providers as well as researchers should educate family caregivers about cancer pain and its management and the importance of their role in the process of pain management at home.
 - Knowledge deficit about pain management remains an important barrier for pain self-management among patients with cancer. Therefore, health care providers and researchers should incorporate different strategies to fill the gap between programs and practice. Cancer pain self-management might benefit from booster doses of pain self-management education tailored to individual needs. Nurses could begin educating patients during every encounter from admission to discharge as well as after discharge about what to expect and how to deal in order to improve the quality of cancer pain self-management process.
- Communication
 - Unprofessional communication hindered patients' abilities to effectively manage their pain at home. Health care providers, specifically nurses, since they spend more time with patients, can support cancer patients with pain by building collaborative and therapeutic relationships, addressing barriers, and building on facilitators to support patients to succeed in managing their pain in their day-to-day lives.
 - Effective communication is needed across all stakeholders (i.e., patients, health care providers, family, friends) to positively support patients' self-efficacy and engagement in self-management programs. Nurses play a critical role in facilitating the communication, since they are considered as the link between the patients and health care team. Different strategies could be used to foster trust and deepen the therapeutic alliance (listening with empathy and providing significant knowledge related to pain and pain management at home).
 - Pain diaries could be an important strategy to be used by the patients to improve their therapeutic communication with health care providers.
- The aforementioned barriers and facilitators should be considered when developing patients' discharge plan and contemplating shared decision-making with the patients to understand their beliefs and attitudes, and health care preferences.

Authors recommendations

Future studies are needed to:

- To identify other significant factors that hinder or facilitate the process of pain self-management among patients with cancer by using quantitative comparative design.
- To identify the resources that help in fostering the process of pain self-management and overcoming the obstacles and barriers that affect patients' adherence to the pain management care plan.
- To develop and implement educational programs for patients, family caregivers, and health care providers to support cancer pain self-management.
- To find the rationale of the presence of barriers related to the patients' demographic characteristics.



	To elucidate nurses' role in each factor that affects the process of cancer pain self-management, and emphasize the importance of the role of nurses in controlling cancer pain.
Limitations and other comments	
Limitations quoted by the authors	- Limited number of studies retrieved. - No search of grey literature. - Only articles published in English. - Although culture, religion, and ethnicity have a profound effect on pain perception, management, and professional bias, the current review did not capture these factors among the included studies, which suggests a need for future studies. - Generalizability of the review findings could be restricted because of the design of included study (descriptive quantitative and qualitative studies). - Review conducted by a PhD student.
Other limitations	- Quality assessment of studies performed by only one researcher - No robustness analysis - Risk of bias from primary studies not taken into account in the analysis - Heterogeneity between studies not addressed
KCE Q.A.	High risk of bias

1.5.2 Evidence table – Altun 2022

Altun ⁴	
Objective	
Clearly mentioned	To evaluate the effectiveness of interventions used to support refugee and immigrant populations experiencing chronic pain.
Methods	
Design	Systematic review (Prospero CRD42020156272); narrative synthesis completed by grouping where possible, study results into specific interventions and treatment responses.
Source of funding and competing interest	Funding: none; Competing interest: not mentioned
Search dates	February 2020. No limitation was placed on the year of publication; search alerts were made to identify and include any papers that were published after February 2020 until September 2020.
Searched databases	Ovid (MEDLINE and Epub Ahead of Print, EMBASE, and PsychINFO) Cochrane Central, Scopus and CINAHL
Eligibility criteria	Population: Patients from culturally diverse backgrounds such as migrants, refugees, or asylum seekers - Refugee: Someone who has fled war, violence, conflict or persecution and have crossed an international border to find safety in another country - Recent migrants and immigrants: People who have moved by choice over an international border within the last 10 years. Including both 'first-generation immigrant' a person born in a country other than her/his country of residence and whose residence period in the host country and a 'second-generation immigrant' is a native-born person with at least one foreign-born parent - Asylum seeker: Someone seeking international protection but whose claims for refugee status have not yet been determined Disease: Chronic pain (i.e. pain persisting for three months or more) Intervention: All non-invasive and non-pharmacological treatments that may be considered therapy for chronic pain. Settings: Any health, medical, or community setting in which a chronic pain management intervention can take place. Design: Quantitative or qualitative studies, that can include primary or secondary analyses of data from interviews, focus groups, surveys, or consultation observations
Exclusion criteria	Population: <18 years old - Patients without culturally diverse backgrounds Disease: No report on chronic pain



	Intervention: • Interventions that intend to treat cancer-related chronic pain • Medication treatment for chronic pain Settings: outside of health, medical, and community settings Design: Systematic Reviews and meta-analyses, non- empirical reviews, commentaries, and editorials Language: Not English paper
Q.A. used	Cochrane Risk of Bias Tool for Randomised Designs (RoB-2) and Non-randomised Designs (ROBINS-1) outlined by Higgins and Cooper [26]. Findings were categorised as either “Low”, “Moderate”, “Serious” or “Critical” risk of bias for ROBINS-1, and “Low” “Some concern” or “High” risk of bias for RoB-2.
(Statistical) analysis	The stages of the narrative synthesis comprised: (1) developing a preliminary synthesis; (2) exploring relationships within and between studies; and (3) assessing the risk of bias across studies. A meta-analysis was not feasible as studies used highly variable designs and measures for chronic pain management resulting in high heterogeneity of the data, both methodologically and clinically. Furthermore, owing to the diversity across study types and outcomes there was a lack of appropriate data to calculate standardised effects across studies.
Description of the included studies	
Number of included studies	21 studies
Design of included study	RCT, pilot RCT, prospective, retrospective and quasi-experimental cohort studies, A-B Case series study, pilot single-arm interventions study, pilot pre-post cohort study.
Covered years	1997-2019
Countries	Of the 21 studies, the majority of studies were conducted in America (n = 7), Europe (Sweden n = 4, Switzerland n = 4, England n = 1, Germany n = 1, Norway n = 1 and Kosovo n = 1) and Australia (n = 2).
Patient & disease characteristics	The majority of studies recruited migrant populations with only three studies recruiting refugee, asylum seeker or torture survivors. For the majority of participants, chronic pain at baseline was experienced as back-ache, shoulder pain or more broadly as widespread, indistinct chronic pain. Three studies included participants with fibromyalgia and one study recruited women with chronic pelvic pain.
Interventions group	The majority of interventions (62%) used a multidisciplinary program to manage chronic pain. Commonly, these programs involved consultation liaison or cross referral between a range of physicians, physiotherapists, social workers, occupational therapists and psychologists to assist in the intervention delivery. Only two studies were primarily lead by a nurse practitioner or other health professional and guest experts were invited based on expertise of the service being delivered. Only one study used trained peer-leaders to deliver the interdisciplinary program.

	Bilingual interpreters, cultural support and translated material were used alongside multidisciplinary teams and two studies also involved bilingual health teams. Services delivered in the multidisciplinary pain management (MPM) programs included exercise, medication education, meditation, self-care, emotional support and social connection. The majority of the MPM programs were based on Engel's biopsychosocial model of illness. The programs therefore shift from a purely biomedical model to a more holistic, biopsychosocial way of understanding chronic pain with the ultimate aim of restoring functional capacity and helping patients learn to cope with, control, and improve the acceptance of their chronic pain condition. All studies involved group sessions, through either focus groups or group-led learning and three studies also offered one- on-one sessions with a health professional. NB. There are also studies who focus on Psychosocial interventions (CBT or Lovflander and colleague's dialogue sessions i.e.- psychosocial based treatment consisting of tape-recorded dialogue sessions with a primary care physician), Education interventions (adapted information material) or Exercise-based interventions (adapted to reflect culturally sensitive contexts). Cultural adaptation of interventions = Bilingual interpreters and support workers assisted with translating management content and addressing concerns raised during sessions. Bilingual staff also liaised with project officers to determine whether materials were translatable during the intervention and to refine content for upcoming sessions. Multicultural health teams offered a comprehensive approach to cultural adaptation through inception of the intervention to delivery. Health teams assisted with the written curriculum from English translation and reviewed for appropriate wording, meaning, and health literacy. Patients were also encouraged to discuss any health misinformation with bi-lingual facilitators and mid-term evaluations and focus groups were used to gather feedback to further adapt the curriculum.
Control group	The majority of studies reported a usual care control group that consisted of routine medical care in the form of either physical therapy, continued medication use, patient information material and standard consults with their physician... Control groups did not include culturally specific elements in their treatment to discriminate from participants who received a culturally specific treatment intervention.
Follow-up duration	/
Involved professionals	Physicians, physiotherapists, social workers, occupational therapists and psychologists (See interventions group).
Settings	The majority of MPM (multidisciplinary pain management) programs were set in hospitals, Universities, or private clinics. Only one study used a wider community setting of senior citizen homes, churches, and health centres to deliver the intervention.
Results	
Summary of findings	• Approximately 80% of studies found improvements in physical symptoms associated with chronic pain. • Baseline symptom load made management more challenging (see barriers below). • Movement (exercise) can be coping strategy for pain and disability.



	• Studies which involved pain education program, psychological intervention such as CBT, or exercise therapy that was not grounded in a culturally sensitive or biopsychosocial model of care displayed little benefit in psychosocial health outcomes. • Group based therapy provided patients an opportunity to interact with others who shared similar chronic pain experiences. • Medical care that was delivered in their preferred language also provided a sense of freedom to discuss intentions and fears clearly and in a capacity that is not normally available.
Barriers	• Patient greater baseline symptom load, poorer coping, functional disability and greater psychological strain were clear indicators for poorer treatment response
Enablers	• Cultural concordance reflected in health care providers is an important moderator for patient compliance and treatment response. Providers who demonstrate an understanding of patient's health care beliefs, preferences and those who were able to speak fluently with their patient were able to achieve a better treatment response (two studies but only one included in the review). In another study, providers who exhibited greater Spanish proficiency and similarities with Hispanic pain patients were able to have a strong effect on the implementation of established pain practices and understood common cultural beliefs and attitudes exhibited towards pain treatment.
Clinical implications	See authors recommendations
Authors recommendations	Multidisciplinary teams delivering care should consider providing interpreters or service providers who are culturally and linguistically competent in an effort to compliment the language, culture, concepts and attitudes of the population receiving care and to ensure long-term results are maintained. This may provide a useful adjunct to physician consultation and advice, and has important practical implications towards achieving culture-sensitive healthcare
Limitations and other comments	
Limitations quoted by the authors	• Lack of refugee-related studies exploring chronic pain interventions which limits the availability and scope of data reviewed; • Without longer follow-up periods it is difficult to elucidate the long-term effectiveness of these interventions. • Studies which were published in languages other than English were excluded, which may impact the representativeness of findings.
Other limitations	• No robustness analysis • Bias from primary studies not taken into account in the analysis
KCE Q.A.	Moderate risk of bias

1.5.3 Evidence table – Arnott 2023

Arnott 2023 ²⁹	
Objective	
Clearly mentioned	To explore adults' (either peer-support volunteers (PSVs) or participants) experiences of and perceptions of participating in (i.e. delivering or receiving) a peer-support interventions (PSI) for chronic non-cancer pain in order to make recommendations for future research and practice with respect to the content and delivery of PSI. Review questions • What are the experiences and perceptions of adults with chronic non-cancer pain regarding the format, delivery, role, and training of PSVs and duration of the PSI? • What are the experiences and perceptions of adults with chronic non-cancer pain regarding the strengths and limitations of PSIs? • What do adults with chronic non-cancer pain perceive to be the barriers to and facilitators for the implementation of PSIs? Statement is that self-management skills can be improved with the use of peer support.
Methods	
Design	Systematic review in accordance with the JBI methodology. PROPERO (CRD42021245085)
Source of funding and competing interest	Unfunded doctoral study The author declare no conflict of interest
Search dates	Inception – April 28, 2021
Searched databases	A 3-step search strategy was utilized in this review. • First, an initial limited search of MEDLINE and CINAHL (both via EBSCOhost) was undertaken, followed by analysis of the text words contained in the title and abstract and the index terms used to describe the articles. • The search strategy, including all identified keywords and index terms, was adapted for each included information source and a second search was undertaken during April 2021 in AMED, CINAHL, MEDLINE, PsycArticles, SPORTDiscus (all via EBSCO), Embase, PsycInfo (via Ovid), and Web of Science. Sources of unpublished studies and grey literature included EBSCO Open Dissertations (EBSCOhost), EThOS (British Library), the Networked Digital Library of Theses and Dissertations (Global ETD), and Google Scholar. • Finally, reference lists of included studies were screened for additional studies.
Eligibility criteria	Population: Adults (aligned with the country of origin for each publication as this can vary between 16 and 18 years); Studies with adolescents were included if more than 50% of participants were considered adults.



	Disease: All types of chronic primary and secondary pain (>12 weeks) Interventions: - Self-management is defined as “the individual’s ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition. - Self-management programs are affordable, community-based interventions. Common components of self-management can include pain education, physical activity, lifestyle modification, psychological therapy, and mind-body therapy. - Peer support is based on individuals with similar conditions supporting one another by providing emotional, appraisal, and informational assistance. <u>PSI</u> was defined as a <u>gathering of 2 or more people with similar conditions with the goal of supporting one another by providing emotional, appraisal, and informational assistance</u>. This intervention could be delivered via any mode, including face-to-face, virtual (audio or video call, messaging/emailing, or social media platform), or a hybrid, and in any format, including group, one-to-one, or a hybrid. In order to differentiate a PSI from a support group, some amount of training had to be provided to the PSVs. - Studies with peer support included as part of a multi-component intervention were included if peer support was the dominant component and/or the data on peer support could be extracted separately. Settings: Any setting, including, but not limited to, hospitals, clinics, and community settings, and was not restricted by geographical location. The following criteria were not clarified in the a priori protocol but were added as amendments and updated in PROSPERO: Interventions: Peer support was included where it was a standalone intervention or where it was delivered alongside or embedded within a broader self-management program. Design: - Studies that focus on qualitative data (e.g. phenomenology, grounded theory, ethnography, action research, feminist research). Qualitative studies could include interviews, focus groups, case studies, exploratory, longitudinal studies or cross-sectional surveys with reported free-text responses that were analysed qualitatively. - Mixed methods studies were considered where the qualitative results were reported separately. Language: All languages
Exclusion criteria	Population: Children Disease: - Cancer-related pain due to its unique experience and management (overall pharmacological). - Neurological conditions, and opioid dependence due to the specific nature and management of these conditions. - Sickle cell and tinnitus as these conditions exhibit episodic rather than longstanding chronic pain, - The following criteria were not clarified in the a priori protocol but were added as amendments and updated in PROSPERO:



	Design: - Studies were excluded if the research questions were solely focused on the training experience of PSVs, as this was not directly related to the aims of this review. - Conference proceedings (added in an PROSPERO amendment).
Q.A. used	Standard JBI critical appraisal checklist for qualitative research. In order to ascertain a comprehensive understanding of the research phenomenon, both data extraction and synthesis were conducted for all studies that met the inclusion criteria, regardless of methodological quality, as both high- and low-quality studies can provide potentially valuable insights.
(Statistical) analysis	Qualitative research findings were pooled in JBI SUMARI⁵⁴ using the meta-aggregation approach. Where textual pooling was not possible, the findings were presented in narrative format. Only unequivocal and credible findings were included in the synthesis, and all findings were either unequivocal or credible. The final synthesized findings were graded according to the ConQual approach for establishing confidence in the output of qualitative research synthesis and presented in a Summary of Findings.
Description of the included studies	
Number of included studies	7 studies (in 9 reports)
Design of included study	3 mixed methods, 3 qualitative and 1 RCT with an embedded qualitative component. Three studies employed semi structured interviews, while the remainder combined interviews with focus groups, written accounts or questionnaires and diaries. All in English
Covered years	2002-2020
Countries	2 each in the US, the UK and Canada, and 1 from China.
Patient & disease characteristics	214 participants: adults (17-100 y old) with arthritis, chronic low back pain, chronic musculoskeletal pain^{38,58} and more general chronic pain. Sample sizes ranged from 7 to 68.
Interventions	Face-to-face interventions (e.g. weekly 1-hour sessions, PSV led 20 min of physical activity followed by 30 min of pain management education over a duration of 12 weeks), Phone/face-to-face intervention Skype-based peer mentoring



	All interventions included in this review defined PSVs as volunteers who received training and were matched either with an individual or helped lead a group of participants, all of whom required some kind of support
Involved professionals	No info
Settings	No clear description but no restriction
Results	
Summary of findings	• One of the main findings is the lack of research in this field. • No evidence was found on the format, role of the PSV, length of intervention, and frequency of contact between PSVs and participants. (only one study reporting that all participants deemed a face-to-face element essential) • To support PSV, another component is PSV training (from 3 to 12 hours) ; beside, there are differing opinions on the usefulness of these manuals. • Both PSVs and participants identified several strengths of PSIs. These pertained to the benefits they received from taking part in the interventions, including developing a greater sense of purpose; feeling optimistic about the future; and an overall improvement in skills, such as communication, confidence, and knowledge. • This review found barriers to implementation of PSIs could be categorized into physical, logistical, and interpersonal barriers. • The authors intended to explore facilitators to intervention implementation, however, instead they found facilitators to patient participation in an intervention from one study on veterans with chronic pain.
Barriers	• A number of physical, logistical, and interpersonal barriers to successful implementation of peer support for chronic pain have been reported; ways of overcoming these barriers should be considered when developing future PSIs. ○ Category 11: Physical barriers to leading intervention: e.g. enduring the length of the therapy sessions during a pain flare and struggling to physically assist frail participants during an exercise portion. ○ Category 12: Logistical barriers to participation: e.g. difficulties with scheduling, access to technology or transportation, time commitments. ○ Category 13: Difficulties with correct level of engagement from PSV ○ Category 14: Challenges/negative interactions between PSV and participant: fear or disbelief when meeting PSVs with reduced mobility as they reflected on that possibility of disease progression in their own lives; difficulties in building rapport due to differences in gender, sexuality, political views or disease stage.
Enablers	• The peer-peer relationship is perceived as unique by those giving and receiving peer support, and important components include communication, a shared understanding, and an ability to connect on a personal level. These components should be considered when matching participants to PSVs.

	○ Category 1: Importance of mutual understanding from shared diagnosis/background (e.g. as a veteran): Participants consistently reflected on the difficulty of sharing their experience with medical professionals or family and friends—people who have not actually experienced living with chronic pain. In contrast, conversations with peers who share a diagnosis were described as extremely valuable. ○ Category 2: Importance/benefits of making a connection: both PSVs and participants noted the unique relationship that was formed during the intervention, and how talking with someone who shared the same condition and experiences helped to validate feelings on both sides. ○ Category 3: Importance of listening/communication: participants greatly valued having a space to be heard and relay their experiences and feelings, especially in their own language. ● PSVs and participants perceive a number of benefits from taking part in PSIs, including developing a greater sense of purpose, feeling optimistic about the future, and an overall improvement in skills, such as communication, knowledge, and confidence. These benefits should be considered when developing and recruiting to future PSIs. ○ Category 4: PSVs perceive a range of personal benefits from taking part in PSIs (satisfaction for helping, empowering participants, improvement in their own skills in communication, in knowledge and learning new self-management techniques/coping strategies. ○ Category 5: PSVs experience a sense of purpose from taking part in PSIs: satisfaction to give back to society. ○ Category 6: Participant benefits/positive feedback ○ Category 7: Positive about the future/changed attitude: both PSVs and participants reported improved levels of hope for the future, aided by sharing their experience with someone who understood their condition and provided motivation and encouragement. ● People developing or implementing PSIs should be cognizant of elements that are deemed essential by PSVs and participants, which include specific discussion topics, a sharing of ideas, and individual preferences ○ Category 8: Sharing ideas on self-management: e.g. specific life transition ○ Category 9: Types of support and discussion topics: emotional, informational (including included both program resources and mentors' experiential knowledge), appraisal, and instrumental support were all provided by PSVs. ○ Category 10: Preferences for intervention components: Both participants and PSVs stressed the need for PSIs; participants described them as “critical” and PSVs expressed a wish that a similar intervention had been available earlier in their diagnosis. Regarding the delivery of the intervention, both parties preferred at least one face-to-face interaction, often with additional phone interactions.
Adherence to additional interventions	/.
Clinical implications	/
Authors recommendations	Recommendations for practice



	i) Individuals and organizations involved in developing and running PSIs for people with chronic pain should ensure that PSVs possess the relevant lived experience, personal attributes, and communication skills in order to provide effective peer support. A screening process could be used to determine suitability and/or help target necessary training to be provided to PSVs. (Grade B) ii) This review found several benefits for both participants and PSVs, which could be used during recruitment of future PSIs to inform interested parties of the potential benefits. These findings can also be used to develop feasible, acceptable, and effective interventions. (Grade B) iii) Participants and PSVs deemed a few essential elements for PSIs, such as specific discussion topics like pain management and an open environment to share ideas. People developing or implementing PSIs should be cognizant of these elements and consider these topics for PSV training. (Grade B) Recommendation for research: • To purposefully assess patient preferences regarding the many components of peer support (intervention format, length of intervention, and frequency of contact between PSVs and participants). • To investigate in other geographical locations and health care contexts in order for the findings to be generalized more widely. • To combine the findings of this review with evidence of effectiveness and cost-effectiveness of peer support in order to make more informed recommendations to policy-makers.
Limitations and other comments	
Limitations quoted by the authors	• Generalizability only for the 4 countries; the US, UK, China, and Canada • Maybe some studies were not discoverable due to the range of terms for “peer support” used by different researchers • Possible human error in the screening of the Ti and AB (but high reliability) • Concerns around the methodological quality of some of the included reports.
Other limitations	Maybe not transposable in Belgium
KCE Q.A.	Low risk of bias

1.5.4 Evidence table – Bryson-Campbell 2020

Bryson-Campbell 2020 ⁵	
Objective	
Clearly mentioned	- To use evidence and experiential knowledge to inform the development of a foundation for educational guides and toolkits to support workers with pain to achieve their outcomes for remaining at work. - To identify the domains of knowledge to inform guidelines for injured workers and the helping/health professions to use when enabling persons living with chronic pain to work and lead a healthy, productive life - To answer the following research question : What are strategies/intervention guidelines for supporting an injured worker to live and work with chronic pain? Context: The Creating a Way Forward Project (a multiyear initiative started in Canada professions to use when enabling persons living with chronic pain to work and lead a healthy, productive life. This paper is the culmination of the synthesis of the findings from two major phases of this ongoing project (scoping review for answering to the question: <i>What are strategies/intervention guidelines for supporting an injured worker to live and work with chronic pain?</i> and SH consultations).
Methods	
Design	Scoping review (Arksey and O'Malley's method) + SH focus group
Source of funding and competing interest	This work was supported by the Canadian Injured Workers Alliance under a grant from Employment and Social Development Canada. Authors declare non conflict of interest.
Search dates	2010 to 2015
Searched databases	Cochrane, CINAHL, Embase, ProQuest, PubMed, Scopus, and the Archives of Physical Medicine and Rehabilitation
Eligibility criteria	Population: Worker Disease: Chronic pain = lasting a minimum of 6 months Interventions: All interventions Design: All designs (guideline, effectiveness studies, qualitative studies...)
Exclusion criteria	Not relevant to the research question Primarily pharmaceutical approach to managing chronic pain.



<i>Q.A. used</i>	None
<i>(Statistical) analysis</i>	Not specified (one reviewer made the synthesis and discussed with other team members)
Description of the included studies	
<i>Number of included studies</i>	33 studies among them 7 studies were related to patient perspectives
<i>Design of included study</i>	Mixed (SR, RCTs, quanti, quali)
<i>Covered years</i>	2012-2015
<i>Countries</i>	Canada, USA, UK, Australia, India, Norway, Croatia, Tokyo, Netherlands, and Denmark
<i>Patient & disease characteristics</i>	General chronic pain, musculoskeletal pain, osteoarthritis, and low back pain.
<i>Interventions</i>	Holistic approach, self management, RTW...
<i>Involved professionals</i>	Physicians, nurses, physical therapists, occupational therapists, pharmacists, pain researchers, and pain specialists
<i>Settings</i>	Primary and secondary care in Canada, USA, UK, Australia, India, Norway, Croatia, Tokyo, Netherlands, and Denmark
Results	
<i>Summary</i>	One gap identified through this scoping review is research into strategies to support patients in engaging in occupations important to them while managing chronic pain. There is a disconnection between the availability of evidence-based strategies and the implementation of these strategies in a clinical and workplace setting. There is little information on when or how health professionals communicate information or dialogue with persons who have pain and the influences on doing and pain. Thus, more work needs to be done to examine the efficacy of knowledge transfer and educational programs to best support persons in living and working with pain. The other gap noted in this project, in particular from the scoping review, is that no information was found on how to improve current knowledge translation guidelines to treat and manage the needs of injured workers. Thus, the focus in this project offers insights into the areas for development. Further partnering will be needed to identify the mechanisms and types of knowledge transfer media and mobilization that will be of value to both health/helping professionals and workers living with chronic pain.
<i>Barriers</i>	Communication : The patients felt there were currently poor communication among their providers and noted that this was a barrier to less reliance on pharmaceutical medication.
<i>Enablers</i>	Attitude in self-management : a positive acceptance of pain (by acceptance and commitment therapy) allows patients to engage in more physical activities than they initially thought possible and felt more positive regarding their future

Possible strategies	• Holistic Approaches to Chronic Pain Treatment and Management (e.g. integrated care team to facilitate RTW, BPS model, pain management team) • Self-Managing Chronic Pain: across the 17 self-management approaches, there are five unique tools that may be considered part of a successful self-management approach: 1. Goal setting in the initial development of a self-management: identification of a medical goal (i.e. the reduction of pain) as well as, an overall health and well being goal (better work-life balance, the return to work). This will allow the patient and provider to remain cognisant of outcomes to strive for. 2. Education both individuals and HCPs. Findings from the perspectives of nurses indicated that the educational initiative was helpful but the learning curve to working with the chronic pain population required extra “on the spot” experience and time. By educating providers this can translate into well informed, educated patients who take an active role in their care and pain management and may lead to better health outcomes. 3. Balance: The concept of balance when referring to work and life revolves around having adequate time to enjoy meaningful, leisure occupations, commitments done out of necessity (i.e. paid work), as well as an overall healthy lifestyle. Occupational therapists suggested that having a meaningful involvement in occupations (both paid and unpaid) may be an integral piece to self-managing chronic pain.. 4. Communication between HCPs and/or patients and collaboration. In two surveys, one with pain clinicians and another with primary care physicians, both groups of providers suggested there was a necessary and important role for HCPs to communicate regularly to ensure the patient with chronic pain was receiving the best, most personalized treatment possible. Patients themselves recognized the need for better communication among health care providers. 5. Support: creation of a management guide for HCPs and following the publication, an online pain management learning module; social support quoted both by HCPs and patients. • Psychological and Alternative Therapies: 12 studies; CBT, ACT, positive coping strategies such as pacing (taking regular and frequent rest breaks) can facilitates the management of chronic pain according to occupational therapists) • Developing a Dynamic Work Plan: focus on strategies that may support an injured worker to return or remain at work (discussing workers needs in advance and plan according to their needs) • Establishing a Flexible and Supportive Working Environment.: infrastructure and relationship in the workplace (out-of-scope)
Interpretations	/
Clinical implications	/
Authors recommendations	For the many programs offered in chronic pain management by health professionals it is recommended that they review knowledge gaps, engage in professional education, and then reflect on how the use of new knowledge informs practice in achieving collaborative approaches and better outcomes for persons with pain.
Limitations and other comments	



<i>Limitations quoted by the authors</i>	• Ongoing research is always going to be published that can add to these domains • Consultations in this project did not include the perspectives from employers or family members.
<i>Other limitations</i>	• Extraction and synthesis performed by only one researcher. • No quality assessment of the included primary studies, • No robustness analysis • Bias from primary studies not taken into account in the analysis • Heterogeneity between studies not addressed
<i>Comments</i>	Also interesting for discussion (because of the step 2 of the article: SH points of view)
<i>KCE Q.A.</i>	High risk of bias



1.5.5 Evidence table – Chapman 2022

Chapman 2022 ³⁰	
Objective	
Clearly mentioned	To describe communication behaviours utilized by physical therapists when treating adults with chronic pain and inform the development of a conceptual framework to operationalize preferred communication behaviors in pain rehabilitation. In the context of psychologically informed physical therapy (PIPT) in chronic pain management. PIPT combines traditional biomedical physical therapy interventions (e.g. therapeutic exercise, physical modalities, manual therapies) with 1 or more behavioural elements adapted from evidence-based psychotherapies for pain management (e.g. Cognitive Behavioural Therapy, Acceptance and Commitment Therapy, Mindfulness Based Stress Reduction). Authors postulate that lack of confidence in managing psychosocial aspects of care through therapeutic pain communication may be 1 of several factors contributing to the limited impact of PIPT in clinical practice. The ability of physical therapists to recognize and implement effective communication skills is a key component of PIPT, yet lack of confidence in communication skills has been cited as a reason for physical therapists not implementing PIPT approaches in chronic pain rehabilitation despite recognition of their value. Moreover, lack of clarity regarding what behaviours constitute competent communication in the field of pain rehabilitation presents a major barrier for training initiatives to advance physical therapists' competency in therapeutic pain communication.
Methods	
Design	SR & meta-synthesis following procedures recommended by Sandelowski, Barroso, and Voils. (PROSPERO: CRD42020166258)
Source of funding and competing interest	This study was supported by a Ruth L. Kirschenstein National Research Service Award (NRSA) Individual Predoctoral Fellowship from the National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development (1F31HD101274–01) awarded to C. Chapman The funders played no role in the design, conduct, or reporting of this study.
Search dates	Inception – January 2021 A preliminary search of the literature was completed in December 2019 to pilot the study procedures. The full search was conducted from January to March 2020, and a final search was conducted on June 22, 2021.
Searched databases	MEDLINE (PubMed), CINAHL, Scopus, PsycInfo, ScienceDirect, SPORTDiscus, Linguistics and Language Behavior Abstracts (ProQuest), ComDisDome, PsycARTICLES, and Communication and Mass Media Complete.
Eligibility criteria	Population: Adult patients undergoing physical therapy management of chronic pain (anywhere in the body lasting 3 or more months). Intervention:



	• Exclusively or partially comprised of physical therapists. • Only settings in which physical therapy services were delivered face-to-face were included. • Interpersonal communication: Communication behaviour could be referenced explicitly (e.g. “open communication channels with the patients”) or implicitly (e.g. “the amount of support I give them in saying, ‘I’m gonna help you’ makes them believe they can get better”) by investigators, physical therapists, or their patients Design: Qualitative and mixed method studies.
Exclusion criteria	Intervention: • Studies using tele-health or other electronic platforms to deliver physical therapy services. • Studies that focused exclusively on patient communication or communication between providers rather than between patient and provider. Design: Studies with exclusively quantitative designs Language: Studies not published in English.
Q.A. used	CASP for the methodological quality of included studies GRADE-CERQual for critics of 4 areas for each theme: (1) methodological limitations (determined by CASP criteria), (2) adequacy of data, (3) coherence, and (4) relevance
(Statistical) analysis	Extraction of any intermediary or terminal variable linked with communication behaviors in the primary review and potentially important for patient outcomes, including but not limited to self-efficacy, therapeutic alliance, pain intensity, and pain interference. Additional targeted search to extract quotations with an explicit or implicit reference to nonverbal forms of communication due to their unexpectedly limited representation in the initial round of extracted communication behaviors. Meta-synthesis of included studies was conducted in 3 stages: (1) relevant findings were extracted, (2) data were grouped based on topical similarity using thematic synthesis using methods proposed by Thomas and Harden, and (3) findings were abstracted and formatted to eliminate redundancies while preserving the complexity of their content. In lieu of frequency effect sizes, a sensitivity analysis was conducted to assess the contribution of included studies to the final set of abstracted communication themes.
Description of the included studies	
Number of included studies	11 studies
Design of included study	Seven studies used structured or semi-structured interviews, 2 used focus groups, and 3 were observational (1 of these also used interviews)
Covered years	1998-2019

Countries	Sweden (n=2), England (n=2), Scotland, Spain, Switzerland, Norway, Greece, USA and of 4 countries (Belgium, Australia, Denmark, Ireland)
Patient & disease characteristics	Generalized chronic or persistent pain without serious causative or contributory disease to localized musculoskeletal pain in the low back and/or neck, with 1 study of posttraumatic paraplegia chronic pain.
Interventions	Most included studies did not conceptualize or operationalize communication with replicable specificity
Involved professionals	346 physical therapists and patients
Settings	Primary care hospitals, outpatient rehabilitation centres, sports medicine clinics, private practices, and home health services.
Results	
Attention points	Extracted quotations primarily focused on communication behaviors cited as preferred by participants and/or physiotherapists, with very few quotations explicitly defining competent or effective communication. It is important to note that the effectiveness of communication behaviors on treatment outcomes has not been established; therefore, authors used the term preferred to refer to communication behaviors cited as being preferred by investigators, physical therapists, and/or participants.
Summary of findings	Eight communication behaviors preferred by physical therapists in chronic pain rehabilitation (that should be explored as potential mediators of treatment effects in future studies) (1) Disclosure-facilitating communication: Physical therapists used several verbal and nonverbal communication behaviors to encourage patients to disclose personal information in interactions, such as using open-ended questions/formulations, gaze and nodding as conversation continuers, and asking about lifestyle, (2) Rapport-building communication: Much of this communication focused on physical therapists creating an atmosphere to foster trust. The specific rapport-building practices discussed were listening, using humour, and tailoring communication to the individual being treated. (3) Empathic communication i.e. which focused on identifying and attending to emotional matters. Similar to rapport-building, listening was understood as a key communication behaviour but with the stipulation that listening be paired with encouraging, working with, and not judging patients. Empathic communication also involved using touch to communicate a strong and supportive relationship and relaying personal pain experiences to patients. Timing along with delivery were considered important in this category. Physical therapists acknowledged several challenges with empathic communication, such as difficulty responding to sad emotions displayed by their patients. Physical therapists acknowledged that these situations were difficult, but they preferred their patients to display their emotions because “expression of feelings in the clinic facilitates the physiotherapist’s understanding of the patient’s problems and influences the result of treatment positively (4) Collaborative communication: communication behaviors such as seeking common ground and treating communication as a 2-way street. Collaboratively aggregating upon treatment goals, shared decision-making... Successful collaborative communication centred around the goal of ensuring individuals felt involved in their own care, engaging in communication behaviour like “taking time over explanations; using appropriate terminology; listening, understanding and getting to know the patient; and



	encouraging the patient's participation in the communication process. Involvement did not necessarily require individuals to be joint decision makers in their own care; participants were comfortable with their physical therapists making final decisions about their care "as long as they were accompanied by good explanations (5) Professional accountability communication : admitting limitations in professional skills or knowledge and asking for help when needed. (6) Informative communication: providing education and information, reconciling patient perspectives, developing patient insights and reconciling information from verbal and nonverbal (e.g. postures/movements, pain behaviors) communication cues during presentations of pain. Preferred communication was described as regular updates and correcting misguided patient beliefs. (7) Agenda-setting communication (in only 1 study): communication practice in which providers organize and guide conversations to prioritize selected topics or tasks during an interpersonal encounter that may be constrained by time; this can include shifting topics, shutting down a topic of conversation, or ensuring that a topic gets covered before the end of a visit. Physical therapists related that strategies to close down a pain conversation were to "summarize the consultation and to include a prognosis of the patient's problem." Physical therapists also described shifting from one topic to another through the strategic use of yes/no questions and "okay" terminators. (8) Meta-communication or communicating about communication: In 1 study, physical therapists asked their patients the open-ended question "If pain could talk, what would it say?"—an aspect of metacommunication was introduced, where patient and physiotherapist together reflected, giving new perspectives on the experience of pain." In this example, physical therapists encouraged participants to communicate about their communication through a third party anthropomorphized concept—their own pain as a human being with the ability to use language. Physical therapists acknowledged that "communication about communication, appeared as means to open locked dialogues, and was initiated by the physiotherapists and the patients," suggesting that both physical therapists and participants found meta-communication to be a helpful tool in furthering understanding.
Adherence to additional interventions	/
Clinical implications	/
Authors recommendations	These findings can inform future qualitative investigations by providing a foundation for (1) improving the operationalization of communication as a phenomenon; (2) describing elements of communication behaviour in standardized and replicable ways; and (3) exercising greater methodological rigor. Identification of goal-directed communication behaviours drawn from qualitative literature can also inform future quantitative studies seeking to assess the impact of provider communication on intermediary (e.g. informational and emotional disclosures) and terminal (e.g. pain intensity, pain interference, physical activity) treatment outcomes. Furthermore, the proposed conceptual framework can serve as a foundational step for designing evidence-based communication training interventions for physical therapists and other health care professionals involved in chronic pain rehabilitation. Finally, providers can use this conceptual framework as a guide for preferred communication behaviors to consider in their practice and for reflecting on their existing communication practices.



<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Limited operationalization of communication and lack of variety in rich quotations were the primary methodological issues contributing to lower evidence ratings. • Only 11 qualitative studies with relatively limited specificity in describing how physical therapists enact communication behaviours in clinical practice. • Included studies originated from mostly English-speaking countries and our meta-synthesis only included data (direct quotations) published in English. • Focused exclusively on physical therapy providers which may reflect the unique professional knowledge and training of physical therapy providers. For example, discipline-specific training in human movement may predispose physical therapists toward greater reliance on information communicated through nonverbal cues and pain-related behaviours during movement when determining therapeutic action.
<i>Other limitations</i>	/
<i>KCE Q.A.</i>	Low risk of bias



1.5.6 Evidence table – Chopra 2023

Chopra_2023 ³¹	
Objective	
Clearly mentioned	To describe the available information on home-based management of non-inflammatory musculoskeletal pain in the older population. Home-based management in older 75y and plus is proposed to increase motivation for physical therapy (to counter barriers as difficulty parking, cost of transportation, unfamiliar environment, limited social support, reluctance to group-based exercise... plus long WL for outpatient physiotherapy services.
Methods	
Design	Scoping review in accordance with the recommendations from PRISMA-ScR guidelines, the scoping review framework developed by Arksey et al. and the Joanna Briggs Institute Reviewers' Manual 2015.
Source of funding and competing interest	S.R.K. and P.G.C. are part-funded by the National Institute for Health Research (NIHR) Leeds Biomedical Research Centre (BRC). The authors declare no conflicts of interest.
Search dates	1946 - October 2019.
Searched databases	EMBASE, Medline, PubMed, Cochrane Library, Physiotherapy Evidence Database (PEDro), Cumulative Index of Nursing and Allied Health Literature (CINAHL), Scopus, and Web of Science. Manual searching of additional studies by cross-checking the reference lists of included studies.
Eligibility criteria	Population: 75 years or older. Studies including younger age groups were included as long as subgroup data for those 75 years and older were provided. Disease: Non-traumatic and non-inflammatory Musculo-skeletal pain, labelled as chronic, without requirement for minimum duration of symptoms. Intervention: Full or partial home-based management = a range of interventions delivered at home or in a residential care setting with the purpose of "promoting, maintaining, or restoring health along with maximizing the level of independence, while minimizing the effects of disability and illness; provided by a trained health professional; interventions included, and not limited to, physical therapy, occupational therapy, social support, medication reviews, motivational interviewing, psychological interventions, and nutritional support. Design: Empirical studies including randomized controlled trials, cohort studies, quasi-experimental studies, or feasibility studies.

Exclusion criteria	Design: Reviews, guidelines, commentaries, and conference abstracts (because of lack of details related to intervention delivery methods). Language: Other language than English
Q.A. used	Modified version of the Cochrane risk bias instrument
(Statistical) analysis	No Info
Description of the included studies	
Number of included studies	7 studies (2 of them from the same research group testing the same intervention)
Design of included study	Six of the 7 studies used a RCT design, while 1 study employed a mixed method single-group pre-/ poststudy design. (but in the Table 1 there were 5 RCTs, 1 controlled crossover and one mixed method single group)
Covered years	2003 - 2018.
Countries	Majority of the studies in the United States (n = 4), with 1 study each in China, Malaysia, and Sweden.
Patient & disease characteristics	• Average age of participants in the intervention group in 6 out of 7 studies was more than 75 years. One study had participants of average age 74.1 years in the intervention group and 75.6 years in the control group. • Small sample size (between 22 and 76 participants) • Generally on a single site of chronic musculoskeletal pain, including knee pain (n = 2), low back pain (n = 2), and hand pain (n = 1), but 2 studies did not require a specific location of musculoskeletal pain.
Intervention group	• The type of home-based interventions in the included studies was physical therapy (n = 2), psychotherapy (n = 3), and multimodal (multimodal therapies combine different therapies including medical treatment, physiotherapy, behavioral therapy as well as health-related education) (n = 2). • The intervention session frequency was 6 to 7 days/week in 5 studies. The multimodal studies had lower intervention session frequency with only 3 and 5 days/week. The exercise prescription in both multimodal studies did not fulfil the ACSM recommendations (e.g., in the Mat et al study, participants exercised only 3 days a week for 30 minutes, and in the Cederbom et al study, the exercise difficulty was not based on a physical assessment of the participants' exercise capacity, but on the subjective assessment of participants' expectations and needs) • The duration of each session ranged between 10 and 50 minutes. Three of the 7 studies were completely home-based and did not include any sessions outside the home. For 3 studies, weekly group meetings were scheduled in addition to the home-based sessions, whilst 1 study (Mat et al40) used monthly visits to the physiotherapist to assess outcome, followed by personalized prescription of a selection of exercises to the appropriate level of difficulty.



	All studies provided take-home material for participants, which included printed notes, tapes, and exercise equipment (e.g. resistance bands and ankle weights and Nintendo DS Brain game). All studies used participant diaries to track adherence, during the intervention period.
Control group	None, physical activity or general health advice, waiting list, sit in a quiet room, sham hand cream, health education
Follow-up duration	From 2 (n=1) to 48 (n=1) weeks
Involved professionals	Trained medical professionals, physical therapists, meditation practitioners, or nurses
Settings	Home
Results	
Summary of findings	- Scarcity of evidence related to home-based health interventions in older people 75 years and older, living with chronic, noninflammatory musculoskeletal pain. - Physical, psychotherapeutic, and multimodal interventions are usually well tolerated and can be delivered as a safe self-management option. - Results do not support an unequivocal prescription of home-based intervention in the older population with chronic musculoskeletal pain. - Inclusion of psychosocial components in the intervention could help improve adherence and encourage positive health-related behaviours in participants.
Adherence with additional intervention	- Improvement but no significant difference in pain and in function by comparison with control group. No adverse effect. - Home-based intervention well tolerated by the older population. - Adherence to the recommended exercise, to the meditation program or drop-out rate but no clear comparing results. Adherence was measured by activity diary and attendance to weekly group session. However only one study reported number of activity diaries returned. - In one study with multimodal intervention in Sweden (with exercise dose personalised on the SMART (Specific, Measurable, Attainable, Realistic, and Time-bound) goal setting method), no significant difference in pain-related disability or morale between control and intervention groups was found at the end of the 12 weeks' follow-up. However, there was a trend toward increased exercise adherence and exercise efficacy in the intervention group. A follow-up qualitative study assessing the perceptions of participants in the Cederbom et al study reported a positive and meaningful experience of the exercise program including a behavioral approach. Cederbom et al. did not report the number of diaries filled. - Only one study reported the number of diaries filled and returned at the end of the study. ..
Clinical implications	According to the authors, based on the findings in this scoping review, there are a number of important considerations for the successful implementation of a home-based intervention:

	• Provide instructions in simple, clear language and in multiple formats (spoken, written, pictorial, and/or recorded videos) so that the patient can refer to the materials when required and perform the exercises correctly in the long-term without continuous contact with the health care provider. • Tailor the exercise programs according to the patient's physical capacity and general health with physical assessment by physiotherapists using both objective and subjective assessment methods, in regular follow-up appointments (to record functional outcome and prescribe changes in exercise dosage accordingly, to determine whether the patient is mastering the exercise movements and providing evidence of adherence to the home-based exercise protocol). • In order to address the decline of the patient's adherence to home-based interventions over time, incorporate behavioral therapy, including SMART goal setting, incentives, and coping strategies, to positively encourage patients to self-manage their condition. • Train health care professionals to provide cognitive behavioral therapy to help their patients stay motivated and continue to exercise regularly in long-term.
Authors recommendations	• There remains a substantial need for more high-quality research with wider range of home-based interventions and comprehensive assessment of outcomes for this age group. • Due to a lack of a gold standard method for adherence assessment, utilizing a combination of both subjective (self-reported) and objective (e.g., continuous motion tracking) methods to gain better insight into this issue should be considered.
Limitations and other comments	
Limitations quoted by the authors	• Low quality of primary studies and small size (between 22 and 76 participants) • Low quality studies included (but considered as valid by the authors since this study is a scoping review and there is scarcity of publications on this topic) • Lack of consistent assessment of pain, physical function, physical activity, and exercise capacity and therefore inability to personalize the home-based intervention. • Only articles published in English
Other limitations	• Unclear process for data analysis • Search strategy not available (wrong hyperlink)
KCE Q.A.	Moderate risk of bias



1.5.7 Evidence table – Connell 2022

Connell 2022 ²⁷	
Objective	
Clearly mentioned	To identify relevant team structures and processes that may facilitate successful chronic pain management within primary care settings.
Methods	
Design	Systematic review of RCT
Source of funding and competing interest	Funders: Dr. Karleen Giannitrapani's VA HSR&D CDA (#19-075) and VA HSR&D Senior Research Career Scientist Award (Project #RCS 05-195). The authors declare that they do not have a conflict of interest.
Search dates	2009 – March 2021
Searched databases	PUMED, CINAHL, EMBASE
Eligibility criteria	Population: Adults (≥ 18 years of age) Disease: Chronic pain conditions of any aetiology or experiencing cancer chronic pain in both treatment and control settings. Intervention: Interdisciplinary interventions incorporating teaming. Teaming is defined as the dynamic action of bringing clinicians together to meet a patient's needs but without obligation to belong to a bounded team. Teaming was evidenced by: At least two clinicians involved in the delivery of the Intervention; Clinicians and patients interacting in an ongoing coordination process, defined by communication, coordination, or collaboration over at least two distinct time points. Comparator: Treatment as usual Outcomes: Difference in numeric value of patient-reported pain between baseline and post-intervention Total pain, pain-related disability, pain intensity, pain interference, pain severity, bodily pain, average pain, worst pain, least pain, and current pain <i>Pain scales included (range):</i> Brief Pain Inventory (0–10) GCPS: Graded Chronic Pain Scale (0–100) RMDQ: Roland-Morris Disability Questionnaire (0–24)

	NRS: Numerical Rating Scale (0–10) PDI: Pain-Disability Index (0–10) WOMAC: Western Ontario and McMaster Universities Osteoarthritis Index (0–100) SF-36: 36-Item Short Form Survey RAND (0–100) VAS: Visual analog scale (0–10) Follow-up: Any follow-up period Setting: Explicitly defined as primary care by the study authors or if a primary care provider was involved as one of the team members Design: RCT or SR including RCT Language: English
Exclusion criteria	Population: Patients < 18 years of age Disease: Pain in the perioperative period, acute pain, patients without chronic pain Intervention: A single referral between clinicians did not provide sufficient evidence of teaming Interdisciplinary interventions that layered different care modalities without any communication, coordination, or collaboration between clinicians of different modalities were not included in the intervention Outcomes: Medication effectiveness, effectiveness of technical medical interventions Non-numeric patient-reported pain-related outcome measure Setting: Intervention that did not include primary care Design: Non-RCT study or systematic reviews Language: Other language than English
Q.A. used	Cochrane Risk of Bias tool
(Statistical) analysis	Narrative summary
Description of the included studies	
Number of included studies	12 (with 13 interventions)
Design of included study	RCT
Covered years	2009-2019
Countries	USA, Canada, UK, Spain, Finland, Netherlands



Patient & disease characteristics	Adults (10 studies), veterans (1 study), low-income racially diverse adults (1 study): age ranging from 37 to 73 years old. Musculoskeletal pain (3 studies), chronic neurological pain or musculoskeletal pain (1 study), chronic low back pain (1 study), knee osteoarthritis (1 study), chronic pain and depression (3 studies), musculoskeletal pain or fibromyalgia (1 study), pain with regular medication (1 study) Sample size ranged between 100 and 300 participants for 11 of the 13 studies.
Interventions	Intervention group: Cognitive behavioral strategies (3 interventions), Physical/occupational therapy (2 interventions), Medication optimization/monitoring (8 interventions), Automated symptom monitoring (2 interventions), Take home materials/homework (4 interventions), Self-management strategies (4 interventions), Workplace intervention (1 intervention) Comparison: usual care Follow-up: range from 21 weeks to 12 months
Involved professionals	Primary care physician (9 interventions), Study physician (7 interventions), Care manager (5 interventions), Psychologist/mental health practitioner (4 interventions), Pharmacist (3 interventions), Physical/occupational therapist (4 interventions), Specialist physician/physician with pain expertise (4 interventions), Complementary integrated health provider (2 interventions).
Settings	Primary care setting (no study found for cancer pain in primary care)
Results	
Summary of findings	The systematic review focuses on the specific team structures and processes that are required when bringing multiple disciplines together. Eight out of thirteen interventions (reported in 12 papers) reported clinically meaningful improvements in pain. The role of the care manager emerged as a common structural feature of the interventions with some clinical effect on pain outcomes by promoting patient-centred care through additional patient support and helping to organise the team.
Potential strategies	- Team structures • Presence of a (nurse) care manager (5 interventions) - Team process • Regularly scheduled, weekly telephone conferences among clinical team members to review patient cases (3 interventions) • Joint patient assessment or development of treatment plans at baseline (3 interventions) • Prompted patient contact, either in response to patient automated symptom monitoring or to a patient request for follow-up. • Co-facilitation of patient education workshop (3 interventions)
Adherence to additional interventions	/
Clinical implications	Given the current evidence, future interventions might prioritize care managers and mechanisms for patient follow-up to help bridge the gap between clinical guidelines and the implementation of interdisciplinary, team-based chronic pain care.



<i>Authors recommendations</i>	Chronic pain care models could benefit from applying lessons from organizational theories, working to intentionally promote team structures and processes at the level of implementation.
<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Half of the studies were place in the Veteran care sector • Inclusion of only RCT design reduced the number of potential eligible studies but it allows a higher quality of the evidence • Some of the included RCTs were pilot/feasibility studies. • Using reported minimal clinically important difference (MCID) to identify clinically meaningful improvements in patient-reported pain outcomes may lead to large range depending of the method used to calculate MCID
<i>Other limitations</i>	• No list of excluded studies • No reporting of sources of funding for the studies included in the review
<i>KCE Q.A.</i>	Low risk of bias/High quality



1.5.8 Evidence table – Devan 2018

Devan et al. 2018 ⁶	
Objective	
Clearly mentioned	To synthesize the enablers (what works) and barriers (what does not) of incorporating self-management strategies for people in everyday life after completion of a pain self-management intervention .
Methods	
Design	SR & Meta-synthesis
Source of funding and competing interest	No info on funding No conflict of interest reported (ICJME Form)
Search dates	Inception – July 2016
Searched databases	MEDLINE, AMED, PsycInfo, Cochrane Library, PubMed, CINAHL, Scopus, and Google Scholar. + supplementary search (previous SR and Google Scholar citations of included studies)
Eligibility criteria	Population: Adults (16y old or older) Disease: Chronic pain persistent or recurring pain for more than 3 months, including chronic primary pain (pain in 1 or more anatomic regions and includes common pain conditions of unknown aetiology (e.g. nonspecific back pain, fibromyalgia, and irritable bowel syndrome)), posttraumatic and postsurgical pain, neuropathic pain, malignant pain, headache and orofacial pain, visceral pain, and musculoskeletal pain (e.g. osteoarthritis, rheumatoid arthritis). Intervention: • Self-management = “individual’s ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with chronic pain.” • Self-management intervention must have comprised at least 4 of the following 8 essential self-management skills: self-efficacy building, self-monitoring of symptoms, goal setting and action planning, shared decision-making, problem solving, self-tailoring, partnership between the views of patients and health professionals, and proactive follow-up. • No restrictions concerning the implementation of self-management intervention (i.e. setting, provider, mode, format, and duration). Design: Qualitative data collection methods (e.g. focus groups and individual interviews) and qualitative data analysis methods (e.g. phenomenology and grounded theory). Mixed-method studies with a qualitative component and/or qualitative studies conducted alongside or after a randomized control trial assessing the effectiveness of a self-management support intervention were also included Outcome: Perceptions of individuals.

Exclusion criteria	Design: Studies using a quantitative analysis approach for qualitative data. Outcome: Studies not focused on experiences of participating in a self-management intervention. Language: Non-English peer-reviewed articles and conference abstracts and proceedings.
Q.A. used	Critical Appraisal Skills Program (CASP) guidelines Confidence in the Evidence from Reviews of Qualitative Research (CERQual) Approach
(Statistical) analysis	Thematic analysis approach used to synthesize the review findings: First, a line-by-line coding of text segments specific to review objectives was made from results and discussion sections of the included articles. Second, the raw codes were labelled to form “descriptive themes.” Next, “analytical themes” were generated from “descriptive themes” that went beyond the synthesis of included articles.
Description of the included studies	
Number of included studies	33 studies with 512 participants
Design of included study	29 qualitative and 4 mixed-method studies. Two studies used focus groups and 31 used individual interviews for data collection.
Covered years	1999-2016
Countries	UK (n=12), Europe (n = 10), USA. (n = 4), Australia (n = 4), Canada (n = 3)
Patient & disease characteristics	Described per study in Table 1; no global view Chronic primary pain (n=28), musculoskeletal pain (n=2), orofacial pain (n=1), provoked vestibulodynia (n=1), migraine (n=1)
Interventions	• Predominantly active approaches (e.g. pacing, relaxation, cognitive behavioural strategies, counselling, and ergonomic advice), along with some passive approaches (e.g. education). • Only one provided additional support via booster session.
Follow-up duration	For 3 studies, the interventions were ongoing (e.g. patients attending a community choir, multidisciplinary clinics, and use of a self-management website), so it was difficult to interpret the long-term effects. In the remaining 30, data were collected between 0 and 72 months after the completion of the intervention.
Involved professionals	Not reported
Settings	No restriction (and no details)



Results	
Summary of findings	The review found 3 barriers and 3 enablers of incorporating self-management strategies for people in everyday life after completion of a pain self-management intervention. A new framework that goes beyond the results of individual studies is also described with a link between limited ability based on the barriers and greater ability due to enablers. This framework shows there is potential for a bidirectional relationship between one's ability to view "self" in context (self-discovery) and the confidence to implement strategies learned from the intervention (self-efficacy) into daily life. Concurrently, these strategies may positively influence the degree of accepting the new "self" with pain and along with support from family, friends, and clinicians could positively influence the ability to self-manage and facilitate meaningful participation in life despite pain. Shifts in ability to self-manage were not necessarily gradual along the continuum. These shifts encompassed changes at the personal (cognitive and behavioural strategies) level, and were influenced by external inputs (i.e. clinicians, family, friends, and work) and the systems in which individuals worked or lived.
Barriers	• Difficulty with sustaining motivation for pain self-management; (time constraints, cognitive behavioral techniques). Practicing not thinking about pain often resulted in mental conflict, which reportedly increased their focus on pain instead of helping them to cope; and this was particularly difficult during flare-ups of pain. For some, inability to practice self-management strategies made them feel guilty, which led to self-criticism and self-dislike. In addition, accepting pain as part of "self" was perceived as an act of surrender, with pain being in control. The term and action of "acceptance" seemed counterintuitive, especially for those who held fixed biomedical beliefs toward their pain; thus, these participants continued to battle against pain by focusing on fixing their pain (i.e. pain reduction/resolution) and consequently perceived the intervention as "unhelpful." For some, letting go of biomedical beliefs was a constant battle. • Distress experienced from ongoing pain, anxiety, and depression; For some, due to fear of pain and/or reinjury, they continued to be fear avoidant and perceived using the strategies learned from the intervention (e.g. pacing) as not useful.^{27,32,51,55} A few studies reported participants saying that symptoms of depression influenced their problem-solving abilities and compounded their sustained efforts to manage their chronic pain after intervention completion. • Unsupportive relationships with clinicians, family, and friends. In particular, conflict with clinicians was felt as a major barrier to engage in the self-management process. In addition, poor explanation for their symptoms, conflicting views provided by different clinicians, feeling like they were not being listened to, and that clinicians were sceptical of their symptoms created a poor relationship. When self-management interventions were not flexible enough for individual tailoring, this was also perceived as a barrier. Limited understanding of the context of individuals' lives and a lack of collaborative environment impeded participation in the intervention and negatively influenced clinical outcomes. In addition, individuals felt that it was difficult for significant others (family and friends) to acknowledge the ongoing struggle in self-managing pain, owing to the invisible nature of pain, and this acted as a barrier. Sometimes, well-intended advice from friends and family was not considered helpful, and could even be seen as blaming. This led to resentment and relationship conflict.
Enablers	• Self-discovery= ability to distinguish self (i.e. body, thoughts, and feelings) from pain. Understanding the biopsychosocial nature and mechanisms underpinning chronic pain via education and peer learning provided an explanation for their pain and was perceived to be critical for changing core beliefs about pain and provided stress relief. Their change in relationship to

	pain was reported as an ongoing “trial and error” process where strategies (e.g. knowledge, pacing, cognitive techniques) learned from the intervention were tested and tried during and following the intervention. Positive experiences from trying new strategies acted as a catalyst for individuals to consistently try those new strategies and acted as a positive reinforcement to further self-reflect and change their relationship with pain. The new awareness also enabled them to be “in the present,” which brought them a sense of calmness and integration between their mind and body • Feeling empowered by incorporating self-management strategies into practice (e.g. guided problem solving, goal setting, and self-tailoring) with similar others. Their change in relationship to pain was reported as an ongoing “trial and error” process where strategies (e.g. knowledge, pacing, cognitive techniques) learned from the intervention were tested and tried during and following the intervention. Positive experiences from trying new strategies acted as a catalyst for individuals to consistently try those new strategies and acted as a positive reinforcement to further self-reflect and change their relationship with pain. The new awareness also enabled them to be “in the present,” which brought them a sense of calmness and integration between their mind and body. • Supportive ambience via collaborative relationships with clinicians (therapeutic alliance) and support from family and friends (+supportive work environment). A strong therapeutic alliance was achieved via open and nonjudgmental communication, being believed and listened to, valuing the person and person centeredness by means of shared decision making and guided problem solving. Active participation of significant others in the intervention fostered understanding and was perceived to be beneficial for continued self-management in home. Furthermore, a supportive work environment (e.g. symptom legitimization and work place modification) empowered individuals with chronic pain and facilitated ongoing self-management.
<i>Clinical implication</i>	Need for better communication across all stakeholders (i.e. patients, clinicians, family, and friends) to positively support self-efficacy of self-management strategies: • For patients, self-management interventions could focus on strategies to enhance communication skills enabling them to engage in productive discussions with clinicians communicating their pain experiences, treatment preferences, and discussing management plans. • For clinicians, upskilling person-centred practice and communication skills should be encouraged. Clinicians need to acknowledge the patient’s chronic efforts to manage symptoms, some of which might be erratic, and recognize the extraordinary struggle required for ongoing control. This acknowledgement and empathy will help to foster trust and deepen the therapeutic alliance. • For health services, approaches focusing on an interprofessional model of self-management support is important for building a shared understanding, consistency in communication and integrating self-management support principles in clinical practice.
<i>Authors recommendations</i>	• For self-management interventions to positively influence the lives of people with chronic pain, fostering self-discovery was crucial to facilitating acceptance and improved self-efficacy. • Providing intermittent support in the form of booster sessions and peer support groups may be important. • Clinicians involved in the management of chronic pain need to be cognizant of the importance of person-centeredness by means of shared decision making and guided problem solving to facilitate ongoing self-management.



<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Informative studies may have been missed (included interventions that involved at least 4 self-management skills; • English language only; • Uncertainties about which of the key enablers and barriers were most influential long term. (Follow-up period varied from immediately after the intervention to 72 months following the intervention); • Studies conducted in low- and middle-income countries could not be located.
<i>Other limitations</i>	/
<i>KCE Q.A.</i>	Low risk of bias

1.5.9 Evidence table – Dickson 2024

<i>Dickson 2024</i> ⁷	
<i>Objective</i>	
<i>Clearly mentioned</i>	- To identify, evaluate and, summarize patient-related barriers to or enablers of the implementation of High-value physiotherapy (HVP) (or EBP evidence-based physiotherapy) chronic pain management. - To describe the efficacy of patient-interventions that have been used to facilitate implementation of HVP (or EBP) for chronic pain.
<i>Methods</i>	
<i>Design</i>	Systematic review
<i>Source of funding and competing interest</i>	Funding: one author is supported by a Leadership Investigator grant from the National Health & Medical Research Council of Australia (NHMRC) (ID 1178444) to G. Lorimer Moseley. Conflicts of interest: the same author. has received speaker fees for lectures on pain and rehabilitation and received support from ReturnToWorkSA and Kaiser Permanente
<i>Search dates</i>	Inception to January 25, 2023
<i>Searched databases</i>	APA PsycInfo, Embase, CINAHL, Medline, Scopus, and PEDro.
<i>Eligibility criteria</i>	Population: Adults ($\geq 18y$) Disease: Chronic musculoskeletal pain > 3 months duration Intervention: HVP or interventions to enhance implementation of HVP or EBP chronic pain management Outcome: Patient-related barriers to or enablers of the implementation of high-value HVP or EBP chronic pain management Design: Peer-reviewed publication
<i>Exclusion criteria</i>	Population: healthy participants Disease: Non-neuromusculoskeletal chronic pain (e.g. cancer pain, migraine, neuropathic pain) Intervention: Non-physiotherapeutic management (e.g. osteopathy, chiropractic). Design: report on analyses of primary data (e.g. is an editorial, letter to the editor, short communication, or study protocol), review of literature, thesis.
<i>Q.A. used</i>	Qualitative: Joanna Briggs Institute Checklist for Qualitative Research RCT: Joanna Briggs Institute Critical Appraisal Checklist for Randomized Controlled Trials



<i>(Statistical) analysis</i>	NA
<i>Description of the included studies</i>	
<i>Number of included studies</i>	23 studies (13 on barriers and enablers + 9 on intervention + 1 on both topics)
<i>Design of included study</i>	Qualitative studies: • Semi-structured interviews (n=7) • Interviews embedded in RCT (n=2) • Survey (n=2) • Focus group and workshops (n=1) • Focus group (n=3) RCT: • RCT (n=4) • Cluster RCT (n=1) • Proof-of-concept RCT (n=1) • Feasibility RCT (n=1) • Pilot RCT (n=1)
<i>Covered years</i>	2010-2022
<i>Countries</i>	Australia (n=6), Australia and New Zealand (n=1), Canada (n=2), Denmark (n=1), France (n=2), Israel (n=1), Norway (n=1), Saudi Arabia (n=1), Spain (n=1), Switzerland (n=1), The Netherlands (n=1), UK (n=3), USA (n=2)
<i>Patient & disease characteristics</i>	Chronic low back pain (n=4) Chronic neck pain and chronic low back pain (n=1) Chronic pain (n=1) Musculoskeletal pain (n=1) Patellofemoral joint pain (n=1) Knee osteoarthritis (n=11) Hip and knee osteoarthritis (n=2) Rheumatoid arthritis (n=1) Upper and low limb Musculoskeletal pain (n=1)
<i>Interventions</i>	Exercises with high-value physiotherapy

Involved professionals	Physiotherapists
Settings	Not stated
Results	
Summary	Patients with chronic pain experience barriers to HVP, including their beliefs, the nature of their interaction with their physiotherapist, perceived treatment efficacy, and cost. Enablers include rapport with their physiotherapist, achievable exercises, and seamless cost-effective care. Patient-related interventions have predominantly aimed to increase adherence to exercise through the use of technology, and they have demonstrated moderate effectiveness.
Barriers	• Knowledge: Understanding of the benefits of exercise and uncertainty about what type and intensity of exercise to do • Memory, attention, and decision processes: Forgetfulness, difficulty remembering to do their exercises when not supervised • Beliefs about capacities: Unwillingness and inability to accommodate the exercises into everyday life, insufficient feedback from physiotherapists on exercise performance, perceived burden of exercise • Optimism: Previous advice proving fatalistic prognosis, challenges undertaking physical activity and nonmodifiable predisposing factors such as genetic influences, concerns about potential symptom exacerbation • Intentions: Lack of motivation to engage in exercise • Beliefs about consequences: Perceived severity, treatment perceived as unhelpful because of nonmodifiable factors, such as age or degenerative changes, false beliefs (fear of movement), exercise complexity, fear of hurting themselves when unsupervised exercises, lack of understanding of the benefits of exercises. • Reinforcement: Pain subsequent to exercise, frustration that pain medication regimen did not provide sufficient pain relief to allow adequate physical activity levels • Emotion: Exercise programs as boring and repetitive, despondency subsequent to longstanding symptoms, depressive symptoms, and lack of motivation, transition from supervised to a home-based exercise program resulting in feelings of abandonment from reduced follow-up and communication with clinicians • Social influences: Lack of social support and perceived stigma associated with their condition, fragmented care, including insufficient interprofessional communication, lack of formal referral between their GP and physiotherapist, feelings of anger when no further options or onward referrals were made available to them if they were unresponsive to treatment, lack of trust in their physiotherapist, exercising in group. • Environmental context and resources: Programs took too much time to complete, lack of access to physiotherapy services and cost
Enablers	• Knowledge: Clear explanation of their condition and treatment rationale



	• Memory, attention, and decision processes: Specific exercise plan with explicit parameters and with clear goals related to their function and symptoms. • Beliefs about capacities: Ability of patients to integrate exercise into day-to-day life • Optimism: Positive influence of exercises on functional activities such as walking and standing. • Goals: Patient-centred goal setting • Beliefs about consequences: Positive perception of exercise efficacy, exercise likely to prevent the need for surgical intervention, treatment perceived as a part of the treatment • Reinforcement: Symptom relief after exercise, social networks and forums led by a professional answering questions, gaming technology • Social influences: Communication with the physiotherapists, review of progress with the physiotherapist with regard to pain, function, and exercise technique, as well as follow-up consults after the initial session to check on progress, personalized care, communication of patients' needs and expectations to physiotherapists, , timely referral, social support (i.e. telephone-based support). • Environmental context and resources: Keeping exercise simple, structured (in-person) exercise program, accessibility of location
Strategies	Interventions aiming to improve exercise adherence: • Telephone-based coaching • Technology (i.e., activity tracker) • Messaging services • Software applications (online or smartphone) • Structured model of care for patients delivered by physiotherapist • Integrated care models
Clinical implications	/
Authors recommendations	Interventions seeking to enhance implementation of HVP need to consider the multifactorial barriers experienced by patients with chronic pain conditions.
Limitations and other comments	
Limitations quoted by the authors	• Studies pertaining to hip or knee OA and CLBP are highly represented compared with other chronic pain conditions, the findings need to be considered in this context. • Different chronic pain conditions from various settings could have influenced the barriers and enablers reported. • Quality of the included studies:



	○ Qualitative studies: No statement on the researcher's cultural or theoretical position or on the potential influence of the researcher on the study itself that might have impacted the interpretation and presentation of findings ○ RCT No blinding of the individuals delivering treatment and outcome done or reported in several studies
<i>Other limitations</i>	/
<i>KCE Q.A.</i>	Low risk of bias



1.5.10 Evidence table – Driver 2017

Driver 2017⁸	
Objective	
Clearly mentioned	To identify the knowledge, behaviours, attitudes, and beliefs of physiotherapists (PT) towards the use of psychological interventions in their practice.
Methods	
Design	SR
Source of funding and competing interest	No info on funding The authors report no declarations of interest.
Search dates	Search performed between January 2016 and February 2016.
Searched databases	Scopus, Web of Science, PubMed, and PsychInfo + crosschecking of reference and citation lists
Eligibility criteria	Population: Physiotherapist Disease: All diseases Interventions: At least one psychological intervention : Goal setting, cognitive behavioral therapy (CBT), mental imagery/visualization, relaxation, positive reinforcement, motivational interviewing, self-talk, and encouraging social support or coping strategy. Involved the discussion of knowledge, beliefs, attitudes, behaviors, views, perceptions, or similar concepts. Design: All study design published in peer reviewed journal excepted review article Language: Any language
Exclusion criteria	Population: No physiotherapists, physiotherapy students or athletic trainers Interventions: Testing of outcomes when using psychological interventions with patients, rather than the perception of the physiotherapists using them Discussion of nonspecific psychological aspects as opposed to specific psychological interventions Design: Review article
Q.A.	Guidelines for Critical Review Forms (GCRF): two separate checklists for qualitative and quantitative study designs
(Statistical) analysis	Thematic analysis (following the six steps outlined by Braun and Clarke) Meta-analysis method of synthesis was not adopted due to the heterogeneity of the included studies.

<i>Description of the included studies</i>	
<i>Number of included studies</i>	15 studies
<i>Design of included study</i>	Quantitative design (online or phone cross-sectional closed question survey n=9), qualitative design (semi-structured face-to-face or phone interviews n=5, online cross-sectional open-ended survey n=1)
<i>Covered years</i>	January 1996 - February 2016
<i>Countries</i>	US (n=2), the UK (n=7), Australia (n=4), Australia-New Zealand-Canada (n=1) and one international study did not report on the nationality of respondents (n=1).
<i>Patient & disease characteristics</i>	Nine studies focused on sports injuries, four on chronic pain , one on mental health, and one on neurological rehabilitation.
<i>Interventions</i>	Goal setting, Motivational strategies (positive reinforcement, motivational talk/interviewing, effective communication), creating variety in exercises, encouraging social support, activity pacing (CBT). Less used: teaching emotional control strategies and reducing depression, cognitive restructuring and distraction methods, mental imagery, relaxation techniques.
<i>Involved professionals</i>	Physiotherapists
<i>Settings</i>	No info
<i>Results</i>	
<i>Summary of findings</i>	Physiotherapists are aware of psychological interventions (but with some confusion), are using a variety within practice (including goal setting, positive, and motivational talk, cognitive behavioral therapy strategies and offering social support), and have positive attitudes and beliefs towards their use.
<i>Barriers</i>	Barriers affecting the use of psychological interventions in physiotherapy practice were only documented in a few of the included studies. • Lack of knowledge and skills : • Limited formal training (especially at undergraduate level) • Lack of understanding of types and appropriateness of interventions • Lack of practical skills to confidently implement in practice • Time and money constraints: • Practice/clinic environment constraints (reimbursement) • Consultation limitations (time constraints and client attendance)



	• Perceived need to prioritize physical care due to consultation times • Scope of practice: • Personal role clarity within individual scope of knowledge • Public perceptions of physiotherapists traditional role • Unsure when to address issues and when to refer to a psychologist
Enablers	• Physiotherapists had positive attitude towards the use of goal setting, effective communication to increase confidence, positive self-talk, pain tolerance support (coping strategies), mental imagery and activity pacing particularly with regards to encouraging proactive rehabilitation, adherence to rehabilitation, and recovery speed. • Positive attitudes towards PS interventions were linked to formal training in psychological interventions
Clinical application	Need further training (CBT at postgraduate level; Effective goal setting, communication and motivational techniques for optimal practice)
Authors recommendations	Incorporation of training in psychological interventions in physiotherapist qualifying studies, but also as continued professional development opportunities for physiotherapists currently working in the field
Limitations and other comments	
Limitations quoted by the authors	• Appropriate studies may have unintentionally been overlooked + unpublished papers not included. • Heterogeneity of the included studies presents issues with regards to generalisability, as the emphasis of psychological interventions differed between the studies. • Although the included studies predominantly involved physiotherapists working with sports injuries (n=9) and chronic pain (n=4) (due to the lack of literature considering other specialties), common themes were obvious, across all practice settings
Other limitations	• Generalizability of the review findings could be restricted because only 4/15 studies focus on chronic pain.
KCE Q.A.	Low risk of bias

1.5.11 Evidence table – Emerson 2022

<i>Emerson_2018⁹</i>	
<i>Objective</i>	
<i>Clearly mentioned</i>	1. To summarize the evidence of the attitudes and beliefs of patients and health care providers (HCPs) involved in the clinical conversation about chronic musculoskeletal pain (CMP), and To examine whether and how these perceptions impacted the process of care.
<i>Methods</i>	
<i>Design</i>	Systematic review according to the PRISMA guidelines - PROSPERO (ID: 151998)
<i>Source of funding and competing interest</i>	No funding received No conflicts of interest to declare
<i>Search dates</i>	July 6, 2020
<i>Searched databases</i>	CINAHL, PubMed, Scopus, Sociology Database in ProQuest, and Web of Science Hand searches within the authors' libraries and within the bibliographies of identified articles, related reviews, theses or commentaries, and systematic reviews
<i>Eligibility criteria</i>	Population: Vulnerable adult populations (i.e. patients who are at an increased risk of lower health status and limited access to health care) Disease: CMP (= presence of pain persisting longer than 3 months). Diagnoses included widespread, persistent, or chronic musculoskeletal pain; rheumatoid arthritis; osteoarthritis; and ankylosing spondylitis. Intervention: Clinical conversation (therapeutic alliance) Outcomes: Influencing variables to the clinical conversation Patients' perspectives or attributes, providers' perspectives or attributes, and/or the resultant clinical decisions Language: English
<i>Exclusion criteria</i>	Population: Participants < 18 years of age Disease: Patient population included non-musculoskeletal diagnoses, such as cancer, osteoporosis, amputation, post-surgery, neurogenic/neuropathic pain, sickle cell disease, or HIV/AIDS Design: Book chapters, standalone abstracts, theses, opinions, and correspondences.
<i>Q.A. used</i>	Downs and Black tool (five sections: reporting, external validity, study bias, confounding and/selection bias, and power)



(Statistical) analysis	No information on the studies synthesis
Description of the included studies	
Number of included studies	7 studies
Design of included study	Retrospective studies only (n=7)
Covered years	2004-2018
Countries	USA (n=5), the Netherlands (n=1), Sweden (n=1)
Patient & disease characteristics	All studies included patients with CMP Patients were primarily female (7,140/10,878); Sample size ranged from 99 to 81,302 participants.
Interventions	Pharmaceutical management and multidisciplinary referrals
Involved professionals	Three studies explicitly stated provider types that were involved with care: primary care providers supporting a pain management team, a multidisciplinary pain diagnostic team, or a rehabilitation physician. Three studies broadly reported on the general types of providers in the health care system, and one study did not report details on HCPs but noted that they worked at a tertiary care pain center. One study examined primary care providers' self-rated knowledge of chronic pain.
Settings	Qualified health centres, ambulatory care settings, managed care organizations, multidisciplinary pain centres, managed care organizations with and without opioid initiatives to decrease opioid prescriptions, and rehabilitation centres or hospital rehabilitation departments.
Results	
Summary of findings	Patients with CMP may experience a marginalized process of care due to HCPs' negative implicit biases, unmet patient expectations, and the health care setting. Results suggest several factors may contribute to inequitable care and the recalcitrant nature of CMP, particularly in vulnerable populations with limited health care choices. Findings also indicated that some HCPs did not rate themselves as highly knowledgeable with regard to CMP. Additionally, this review highlights that CMP management decisions were focused primarily on pharmaceutical interventions rather than multidisciplinary referrals, with opioid prescriptions most frequently studied. These findings suggest that there may be an iatrogenic contribution to the current chronic pain epidemic due to the discordant clinical conversations in vulnerable population.
Barriers	Patients perspective:

	• Unmet patient expectations (when CMP management decisions were not congruent with patients' expectations), resulted in higher dropout rates at multidisciplinary pain management programs. • Patients' trust was influenced by the health care setting, and patients often had limited options secondary to health insurance type/status. • Language and communication were not significant between the dropout rates of native and nonnative citizens according to one study. HCPs barriers: • HCPs biases and perceptions related to pharmaceutical management: implicit biases toward black people <65 y old (fewer medication, more likely non-opioid) and younger women (more inadequate medication). • HCPs biases and perceptions related to multidisciplinary referrals: negative implicit biases toward women with lower educational attainment. • HCPs did not rate themselves as highly knowledgeable with regard to chronic MSK pain; CMP management focused primarily on pharmaceutical interventions rather than multidisciplinary referrals, with opioid prescriptions most frequently studied.
Enablers	/
Strategies	The second part of the present review will examine how the educational/training practice of using CMP case vignettes may contribute to providers' biases and subsequent decisions in the clinical conversation.
Clinical implication	HCPs working with populations with limited health care access who may also be at risk of receiving marginalized care should be aware of this potential influencing institutional role and advocate for institutional changes when necessary.
Authors recommendations	The system-wide change that needs to occur begins with clinicians seeking continuing education programming to increase awareness of their own implicit biases. Additionally, managers and administrators should provide training and resources to create a culture that positively engages with vulnerable populations. This includes diversity, equity, and inclusion training, as the demographics of many health care professionals may not reflect the demographics of patients with CMP (particularly salient for clinicians who work in settings that treat patients with limited health care access options or who work with vulnerable or marginalized populations.) The system-level decisions that influence the scheduling of patients need to allow for a sufficient clinic time, given the complexity of CMP. Finally, a re-examination of the sociopolitical influences on marginalized populations would help with increasing awareness of how implicit biases are culturally ingrained and may encourage patients and providers to seek ways to improve equitable health care management for patients with limited health care choices.



<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Only articles published in English. • Lack of standardized quantification of the process of care with heterogeneity of the studies. • The overall quality of included studies identified for this review was fair to poor, indicating that further higher-quality studies are needed. • Capturing the clinical conversation, in real time and in health care settings, is difficult. As such, the studies relied on retrospective medical chart reviews, which is another potential limitation.
<i>Other limitations</i>	• Unclear relevancy (multidisciplinary referrals is only one step of the multimodal management).
<i>KCE Q.A.</i>	Low risk of bias

1.5.12 Evidence table – Fernandes 2022

Fernandes_2022³²	
Objective	
Clearly mentioned	To synthesize the perceptions of people with chronic musculoskeletal pain regarding enablers and barriers for engaging in telehealth interventions* supporting pain self-management. *Telehealth is considered as a promising approach to support self-management with the potential to overcome geographical barriers. Telehealth comprised web-based, videoconference-based, telephone-based, video-based, and smartphone app-based programs delivered solely or combined.
Methods	
Design	SR of qualitative studies with Meta-synthesis PROSPERO (CRD4201913148) Not found
Source of funding and competing interest	No conflict of interest to declare No info on funding
Search dates	Inception – December 2020
Searched databases	MEDLINE, Embase, CINAHL, LILACS, and PsycInfo + Forward and backward citation searches of included articles and relevant SR
Eligibility criteria	Disease: Any diagnosed or self-reported chronic musculoskeletal pain conditions (knee or hip osteoarthritis, chronic low back pain, neck pain), including post-surgical procedures for a primary MSK condition, persistent pain (chronic joint pain or nonspecific chronic musculoskeletal pain), rheumatoid arthritis, and functional fatigue syndrome. Population: People who have engaged entirely or partially in telehealth interventions, e.g. people who started a telehealth intervention program and completed it and people who started a telehealth intervention but did not complete Interventions: - Any intervention provided at a distance using information and telecommunication networks as a medium to deliver rehabilitation care.. - No distinction between telehealth, telemedicine, telerehabilitation, telecare, eHealth, and other similar terms. - In this review, telehealth broadly included professional and patient interaction (synchronous and asynchronous, individual, and group) and delivery of pain management intervention at distance (e.g., home exercises, pain education, self-management



	strategies, and telephone counselling). Studies that also presented face-to-face or use written or paper-based material in combination with telehealth interventions were included only if they reported qualitative data specific to the telehealth component. Outcomes: Studies that reported patients' perceptions and experiences regarding their participation on telehealth interventions. Design: Qualitative studies
Exclusion criteria	Outcomes: - Needs assessment studies (i.e. to guide the development of a telehealth intervention) and usability studies - Qualitative data from clinicians Design: Mixed-method studies primarily reporting quantitative data.
Q.A. used	Critical Appraisal Skills Programme checklist; Confidence in the Evidence from Reviews of Qualitative Studies (GRADE-CERQual)
(Statistical) analysis	3-step thematic synthesis method for meta synthesis guided by an inductive approach (verbatim quotes, line-by-line coding and generating analytical themes)
Description of the included studies	
Number of included studies	21 studies (429 participants)
Design of included study	Qualitative studies If mixed-method studies, only qualitative data extracted
Covered years	2005-2020
Countries	UK (n = 5), the Netherlands (n = 4), Norway (n = 2), Sweden (n = 2), Switzerland (n = 1), Australia (n = 4) and USA (n = 3)
Patient & disease characteristics	Variety of chronic musculoskeletal conditions, such as OA (hip and/or knee), rheumatoid arthritis, chronic pain, shoulder joint replacement after primary OA, persistent pain (chronic joint pain or nonspecific chronic musculoskeletal pain), chronic widespread pain, and functional fatigue syndrome.
Interventions	Telehealth interventions included the following components, solely or in combination: graded exposure to patients' preferred physical activity, education and strategies for self-management, supervised and unsupervised muscle strengthening exercises, acceptance and commitment therapy, cognitive behavioural therapy, pain coping skills training, physical activity plan, social support, and pain management. Delivery of interventions comprised web-based, videoconference-based, telephone-based, video-based, smartphone app-based programs, used solely or in combination.
Involved professionals	No info

Settings	No info
Results	
Summary of findings	Telehealth interventions with well-designed interactive platforms that provide tailored information, with flexibility to fit patients' routine, and the broad availability of material may favour better engagement. Encouragement of self-efficacy is linked to successful telehealth delivered self-management programs. Barriers to patient engagement are associated with the remote aspect of telehealth interventions and information overload. Furthermore, telehealth interventions were challenging to engage when delivering irrelevant content and with limited options to support patients with low digital (health) literacy.
Barriers to additional strategy	Theme 1: impersonal (moderate confidence) • Difficult to build rapport (moderate): The lack of physical presence, the inability to touch (hands-on), and the lack of nonverbal communication contributed to the difficulty in establishing rapport. Hampered interaction between practitioners and patients created feelings of social disconnection and a lack of peer-support; • Lack of content flexibility (moderate): perceived when the intervention was presented with limited scope for individual adaptations and when participant expectations did not match intervention reality (e.g. expectation of exercises vs reality of counselling) ; similarly, the lack of cultural tailoring was a barrier to engage. Theme 2: technological challenges (low confidence) • System malfunction leads to bad mood (low): poor Internet connection and technical issues with app-based or web-based programs, such as temporary malfunction; • Privacy concern (very low). Theme 3: irrelevant content (moderate confidence) • Difficult to follow (moderate): the patients could not perform the proposed activities (e.g. because of physical or pain limitations or lack of time) or the patients did not find the proposed activities useful ; • Information overload (high): the volume of tasks led to feelings of overwhelm and confusion; • Unhelpful reminders (very low): Some patients viewed the presence of daily reminders as a barrier, finding them a driver of hypervigilance instead of encouragement. Theme 4: limited digital (health) literacy (low confidence) • Lack of familiarity with web-based mobile phone technology created difficulties in logging in and navigating intervention content, creating the need for support from others.



	Participants with lower digital literacy mentioned difficulties in concentrating and felt overwhelmed with online information rather than considering a helpful resource?
Enablers to additional strategy	Theme 1: at my own pace, space, and place (moderate confidence in evidence quality): - Ease of access (high), having user-friendly platforms, and the presence of interactive or gamified interfaces (=Attractive factors for engagement and sustained participation to telehealth interventions); - Safe zone – reduced sense of judgement (moderate) (free from stigma or feeling to be judged by the clinician); - Attention and support from HCPs (moderate): Undivided attention from HCP during synchronous communication - Convenience (moderate): flexibility of interventions tailored to individual pace, space, and preferred time; - Tracking progress (moderate) including the ability to set goals and receive feedback (e.g. daily reminders); - Family and friends support (high): ability to count on family and friends to share and talk about their condition and participation in the telehealth interventions - Continued engagement with telehealth interventions reinforced when participants' interacted with other telehealth participants by peer-supported online forums. Theme 2: empowered patient (moderate to low confidence) - Credibility of information (high) (e.g. evidence-based information and real coping stories from similar people) during communication with HCPs professionals was crucial for initial engagement with telehealth interventions - Promoting self-knowledge (very low): enhanced individuals' knowledge of and control over their condition (i.e., increased self-efficacy), which was a further stimulus for learning; - Flexible self-management strategies (low): use of multimodal strategies for information provision (e.g. combination of video and written material, synchronous and asynchronous mode, and/or flexible structure; - Self-efficacy (moderate): Situations where examples from online information matched participants' situation elicited self-identification, strengthening self-knowledge, and led to individual empowerment.
Clinical implications	/
Authors recommendations	Decision-making process and implementation strategies may consider enablers and barriers for engaging in telehealth interventions identified from this review to develop effective initiatives in telehealth. Further studies encompassing other platforms or technologies (e.g. virtual reality or virtual assistants using big data and artificial intelligence) may identify other enablers and barriers.



<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Only articles published in English. • Studies from high-income countries; • Enablers and barriers explored in this study might be particular to certain modes of delivery of telehealth interventions, such as web-based, video-based, and telephone-based.
<i>Other limitations</i>	/
<i>KCE Q.A.</i>	Low risk of bias



1.5.13 Evidence table – Fu 2016

<i>Fu 2016¹⁰</i>	
<i>Objective</i>	
Clearly mentioned	To explore the influence of patient–professional partnerships on patients’ ability to self-manage chronic back pain, and to identify key factors within these partnerships that may influence self-management.
<i>Methods</i>	
<i>Design</i>	SR
<i>Source of funding and competing interest</i>	This study was funded by the School of Healthcare, the University of Leeds. All authors have no financial or personal relationships with other organisations or companies who might be interested. The authors declare no conflicts of interest.
<i>Search dates</i>	1980-2014 Because self-management emerged as a priority in health science in 1980
<i>Searched databases</i>	- Cochrane Library, CINAHL, Medline, EMBASE and PsycInfo - Government publications and reports - Reference lists and citation indexes of relevant articles were scrutinised.
<i>Eligibility criteria</i>	Population: Patients with chronic pain Disease: Chronic back pain Interventions: - Patients were supported by having a partnership with health professionals to experience chronic back pain self-management. - Patients were actively involved with health professionals in developing treatment or care plans for self-managing chronic back pain. Outcome: The influence of patient–professional partnerships on chronic back pain self-management was reported. Language: English
<i>Exclusion criteria</i>	- Studies reporting views of the general public. - Studies of patients undergoing cancer treatments or related therapies. - Letters of opinion to peer-reviewed journals. - Editorials or commentaries.



	Non-English language.
Q.A. used	Critical Appraisal Skills Programme (CASP) checklist for appraising qualitative research
(Statistical) analysis	Simple thematic synthesis guided by the principles outlined by Thomas and Harden
Description of the included studies	
Number of included studies	10 studies (223 patients and 11 health professionals). 9 studies investigated patients' view and only one HCPs view (from UK)
Design of included study	Qualitative methods (semi-structured interviews, open-ended questions, phenomenological hermeneutics, focus groups) Small samples ranging from 11 to 34 participants.
Covered years	2001-2013
Countries	UK (n=6), USA (n=2), Sweden (n=1), Australia (n=1)
Patient & disease characteristics	Chronic MSK pain (low back, cervical, hip, knee, shoulder pain)
Interventions	Modes of communication discussed in the reviewed studies included face-to-face communication, written communication and telephone contact.
Involved professionals	Physical therapists (including the single HCPs perception study), nurse care managers
Settings	No info
Results	
Summary of findings	Seven factors within patient–professional partnerships influence self-management: communication, mutual understanding, roles of health professionals, information delivery, patients' involvement, individualised care and healthcare service. Review findings suggest that a partnership between patients and professionals supports patients' self-management ability, and effective communication is a fundamental factor underpinning their partnerships in care. It also calls for the development of individualised healthcare services offering self-referral or telephone consultation to patients with chronic conditions.
Barriers	Difficulties in effective communication: Difficulties in effective communication may create tension between patients and health professionals (with need of training that improves health professionals' communication skills as well as enhancing their partnerships with patients. Effective



	communication is also limited by health professionals' personalities, behaviour, resources and whether or not they are willing to involve and motivate the patients in order to achieve a higher level of patients' satisfaction and centredness. Not enough individualised care: Some patients reported that their exercises were not sufficient, only focusing on one aspect of their lives such as lifestyle, while others felt the type of exercise they received was too easy or hard to complete, leading to poor motivation. Furthermore, patients felt that some self-management strategies recommended by health professionals were not achievable, for example attending a gym or exercise classes, due to time and financial constraints. They had to work out their own exercise programme such as cycling or walking. This reflected that a standard self-management plan might not be working for all. Being misunderstood: Being misunderstood experienced by health professionals, who sometimes felt their treatment advice conflict with patients' views of their pain. They felt that these patients were seeking a 'magic cure' and did not understand the reality of what therapy could offer. Healthcare service issues: Having a large number of patients but limited consultation time restricted the availability of health professionals' support. Patients were also concerned about the structure of the provision of healthcare services, suggesting that they should be able to decide when to return to their health professionals (e.g. physiotherapists). However, the fact is that open access or self-referral is not always the routine pathway into pain management services in the National Health Service.
Enablers	Effective communication (fundamental factor that could contribute towards patients ability for pain self-management) : Patients' views of effective communication included being listened to and encouraged, feeling understood and understanding why they had the pain. Patients felt most positively about face-to-face communication, as the language and non-verbal communication that health professionals used made them feel at the centre of care and involved in the process of their treatment (written feedback rarely helpful, telephone only helpful if contact with the HCP in person). Providing explanations and educate patients need to be a two-way communication process which enables the patient to contextualise the shared knowledge to their own reality so that they can then improve their ability to manage their pain. <u>Both patients and HCPs</u> highlighted the role of effective listening respectively for learning relevant strategies and for offering specific treatment and SM skills. Mutual understanding: Mutual understanding enabled patients and HCPs to exchange their different types of expertise and knowledge in order to reach a common goal, to build partnerships, to facilitate the development and maintenance of trust between patients and HCPs. <u>For patients</u>, visiting the same professional would improve the continuity of the treatment, and enable professionals to gain a deeper understanding of them. Patients suggested that taking time over explanations and effective listening by health professionals would help them gain a better understanding of their conditions and expectations. <u>HCPs</u> wanted their patients to understand their rationale for providing chronic back pain treatment.

- **Role of health professionals:**

For patients, important role of HCPs in helping them find solutions to cope with their pain, holding them accountable for pain management and encouraging them and providing emotional support. These features of health professionals facilitated a strong partnership with patients, and were believed by patients to be integral to their ability to self-manage pain.

Patients also complaints of being treated as a number.

HCPs believed their role was to educate patients about appropriate behaviour and help strengthen their confidence in their ability to manage the pain.

- **Information delivery:**

Both patients and health professionals highlighted the importance of providing information and skills to help patients manage chronic back pain (in particular explanations of the cause and prognosis of the pain and other functional problems).

A good clear explanation was sought by both patients and health professionals by means of using lay language, drawing, charts and anatomical models and pamphlets (e.g. a model of the spine or their MRI picture), some forms of group activities organised by health professionals (but largely due to the individual physiotherapists who led the groups).

Health professionals also believed part of their role was to educate patients about appropriate behaviour to achieve self-management, for example, how to live with the pain and what to do to control it when it occurred.

- **Patient involvement:**

Patients' involvement increased when the health professional applied their understanding of the patients' values, preferences and lifestyle to the development of individualised exercise programmes.

- **Individualised care:**

Individualised approaches were important for patients, and involved specific treatment for different health needs, personalised self-management strategies, regular communication, motivation and encouragement. Not only the treatment of chronic back pain but also the way in which it was delivered by health professionals was expected to be individualised. Patients were seeking a 'professional mentor', referring to a health professional who has the ability to offer individual care with a supportive treatment approach.

- **Healthcare service:**

Easy and quick access to health services, such as physiotherapy, with the availability of follow-up contact or review sessions were desired by most patients.

Clinical implications

Partnership between patients and health professionals may support patients to self-manage their chronic back pain with, among 7 themes identified, effective communication highlighted as fundamental to the development of mutual understanding between patients and health professionals.

Health professionals need to increase their awareness of the life circumstances of patients with chronic back pain and endeavour to make their service more individualised and flexible. This may also maximise the opportunity for health professionals to involve



	patients, and to enable the transformation from paternalism to partnerships in health services. Emotional support needs to be given as an essential part of health professionals' role to enable genuine sympathy with and respect for patients. To healthcare organisations, the provision of self-management support in the form of self-referral or telephone consultation may be considered to facilitate patients to self-manage their chronic conditions. It also would be beneficial to explore ways of guiding health professionals in developing and delivering individualised services to service users.
Authors recommendations	Further studies since little is known about patients' age, gender, life stage and mental health. More research concerning health professionals or health service providers' perceptions would be useful.
Limitations and other comments	
Limitations quoted by the authors	• Search strategy challenged by the absence of a search subject heading clearly delineating 'patient–professional partnerships'. • Only articles published in English. • No inclusion of grey literature • Qualitative studies, involving small samples ranging from 11 to 34 participants, and not all of the studies were of high quality, thus findings not necessarily transferable. • Of the ten studies, nine explored patients' experiences of living with chronic back pain, while only one examined health professionals' views on pain management.
• Other limitations	No clear separation between the results and the discussion.
• KCE Q.A.	Low risk of bias

1.5.14 Evidence table – Goldsmith 2023

Goldsmith_2023 ¹¹	
Objective	
Clearly mentioned	To synthesize evidence regarding barriers and facilitators to implementation of evidence-based psychotherapy (EBP) i.e. cognitive behavioural therapy, acceptance and commitment therapy, and mindfulness-based stress reduction for chronic pain
Methods	
Design	SR
Source of funding and competing interest	No information
Search dates	Inception to March 2021
Searched databases	MEDLINE, Embase, PsycInfo, and CINAHL
Eligibility criteria	Population: Adults with chronic pain Interventions: Cognitive behavioural therapy (CBT), acceptance and commitment therapy (ACT), Mindfulness-based stress reduction (MBSR) Comparators: Any (active or inactive) Outcomes: • Pre-implementation studies: patient-, provider-, and system-level barriers and facilitators • Evaluations of implementation strategies: - Reach—uptake by target population - Effectiveness—patient outcomes, cost-effectiveness - Adoption—uptake by clinical staff (e.g. participation in delivery, referrals) - Implementation—consistency and fidelity - Maintenance—sustainability Timing: Any duration Setting: Any outpatient setting (including telehealth or mobile technology) in US, UK, Ireland, Canada, or Australia Design: RCTs or observational studies Language: English language



Exclusion criteria	Population: End-of-life (in hospice and/or ≤ 6 mo life expectancy); pain caused by advanced stage cancer (eg, bone metastases); receiving urgent or acute medical therapy for pain-causing condition (eg, chemotherapy, radiation, or surgery) Interventions: Yoga, Taichi, Qigong Design: Reviews, study protocols, editorials, case reports Setting: Acute care (i.e. emergency rooms and inpatient floors) or institutional settings (e.g. nursing homes)
Q.A. used	Critical Skills Appraisal Programme Checklist (qualitative studies) and Newcastle-Ottawa Scale (quantitative studies)
(Statistical) analysis	Qualitative synthesis
Description of the included studies	
Number of included studies	34 studies included
Design of included study	17 RCTs and 17 observational studies 28 studies evaluated patient perspectives and experiences of EBPs for chronic pain; 3 studies evaluated therapists and 2 primary care staff perspectives
Covered years	2000 -2021
Countries	USA (n=21), UK (n=10), Ireland (n=1), Australia (n=2)
Patient & disease characteristics	Adult patients in 28 studies, age not reported in 3 studies, adult not mentioned as inclusion criteria, but mean age is > 18y in 3 studies. Fibromyalgia, chronic widespread pain, neck or back pain, recurrent abdominal pain or discomfort, chronic low back pain, back pain or musculoskeletal pain, non-malignant pain, knee and hip osteoarthritis, HIV patients with self-reported neuropathic foot pain, chronic pelvic pain, HIV patients with neuropathic and/or musculoskeletal pain, or chronic pain without definition provided or disease associated
Interventions	EBP (i.e. CBT, ACT, MBSR)
Involved professionals	Eligible studies enrolled GPs, mental therapists, Veteran administration therapists, nurses and practice managers
Settings	Veterans' Health Administration, community setting (large health systems / smaller independent clinics), academic clinical setting, community general practice
Results	
Summary of findings	Consolidated Framework for Implementation Research (CFIR) is a framework to define the barriers and the facilitators that influence the outcome of the implementation efforts. CFIR framework includes 5 domains: (1) Intervention characteristics, (2) Outer setting, (3) Inner setting, (4) Characteristics of the individuals involved, and (5) Process of implementation

	Results mainly addressed multiple subdomains within: 1. Intervention characteristics including new sub-domains i.e. Group Dynamics (n=8) and Patient-Therapist Dynamics(n=3). 2. Outer Setting CFIR domain(n=29), including 2 new sub-domains: A. Patient Knowledge and Beliefs (n=21) i.e. pain-related knowledge and beliefs, therapy-related knowledge and beliefs, pain characteristics, pain treatments experienced, religion, values, and age and other demographics B. Other Patient Attributes(n=18). 3. Inner Setting, including 2 new subdomains: Provide Decision-Making and Patient-Provider Relationships (CBT (n=3) and MBSR (n=1)) 4. Characteristics of Individuals (CBT (n=2) 5. No results were found for the Process of Implementation <u>Remarks:</u> CBT mostly addressed individual therapy (online, via telehealth or in person), while most ACT and all MBSR had group in-person formats.
Barriers	• Patient needs and resources : telephone delivery for CBT, group intervention for CBT, sitting in a hard chair for ACT, other time commitment (e.g. work, caregiving, parenting) for MSBR, online program or too short programme for half of participant MBSR • Patient pain knowledge and beliefs : pain view as a natural warning system responding to mechanical stress or dysfunction for CBT; fear of causing damage to self, associated negative imagery, and belief that a specific pain diagnosis or cure could be found for ACT, not being belief, past experience, involvement of psychologist perceived as “all in the mind” for MSBR • Patient knowledge and beliefs on therapy: psychotherapy questions the validity of pain for CBT, nothing concrete for ACT, insufficient or inaccurate information about MBSR. • Pain characteristics: higher baseline interference only for MBSR (not for CBT or ACT), opioid medication for CBT • Patient characteristics: lower income and fewer years of education for CBT • Intervention characteristics: therapy being too hurried, repetition techniques and simplicity of videos for ACT, group dynamic for MBSR and CBT (Some felt the group detracted from their experience and would have preferred a one-on-one format), • Structural characteristics: lack of pathways reported need for pathways to and/or establishment of new services situated in primary care for psychotherapy and/or multidisciplinary teams to treat chronic pain and insomnia treatment; need of culturally informed CBT, lack of psychotherapy resources, provider decision-making (e.g. irrespective of patient preference), limited understanding of CBT by GPs and primary care staff, limited culturally appropriate GP,
Enablers	• Patient needs and resources: CBT in patient primary language, online program for half of participant MBSR, 90 min session length for MSBR • Patient pain knowledge and beliefs : higher self-awareness and self-management of symptoms for CBT, Identifying psychological factors in pain expression for ACT,



	• Patient knowledge and beliefs on therapy: CBT viewed as a non invasive , low risk therapy, higher treatment expectation for CBT, perception of having time and space to reflect, (re-)engaging with mindfulness/meditation, and taking small steps toward change/goals for ACT, multiple skills and practices for CBT and MBSR. • Patient values and religion • Patient characteristics: female gender for CBT, • Intervention characteristics: evidence strength and quality for CBT, CBT self-management materials (for home use), online materials tailored to specific chronic pain conditions, user-friendly/well-structured/manageable sessions and mix of presentation formats for ACT, sessions only once a week and materials more fun for ACT, recording of training sessions and handouts for MBSR, quiet space for MBSR, group dynamic for ACT, MBSR (but with exception), CBT (with exception), patient-therapist dynamic (direct interaction, high therapist-patient task agreement, facilitator such as a nurse...) • Structural characteristics: training and resources (e.g. prompt sheets and online information) of facilitators
Authors recommendations	• To assess systematically of heterogeneity of treatment effects and of treatment uptake may identify specific patient-level targets for future implementation or hybrid effectiveness-implementation work. • To identify and clarify cultural and social factors that may mitigate both effectiveness and adherence for EBPs for chronic pain • To perform further study of provider and system-level barriers and facilitators to EBP for chronic pain • To perform further study of barriers and facilitators at all levels within clinical practice settings (real word setting). • To perform further study to identify barriers and facilitators of group versus individual formats of therapy delivery • To perform future implementation research to evaluate telehealth, asynchronous digital, and brief formats as possible avenues to increase reach of EBPs by addressing patient-level barriers (e.g. transportation, time ,and geographical distance).
Limitations and other comments	
Limitations quoted by the authors	• Intervention focused on CBT, ACT and MBSR (therapies with demonstrated effectiveness for chronic pain) but other emerging therapies could be relevant • Focus on evidence to support implementation in the near term. • Limiting inclusion criteria to United States, Canada, UK, Ireland, and Australia which was relevant to the research context (US VA health system) but may lead to the loss of relevant information
Other limitations	Few elements about heterogeneity and sensibility
KCE Q.A.	Moderate risk of bias

1.5.15 Evidence table – Grant 2019

Grant 2019 ¹²	
Objective	
Clearly mentioned	To understand obstacles to returning to work, as perceived by people with chronic non-malignant pain and as perceived by employers, and to develop a conceptual model.
Methods	
Design	Meta-ethnography
Source of funding and competing interest	Funding This research is part of the RISE (Return to work with Individualised Supported Employment) feasibility study supported by the Versus Arthritis charity (project number 9401), and the funder has had no involvement in this paper. Competing interests RF is chief investigator on the Versus Arthritis grant from which this project was funded. He has published multiple papers on chronic pain, some of which are referenced in this paper. RF and MU are part of an academic partnership with Serco related to return-to-work initiatives. RF and MU are directors and shareholders of Clinvivo, a university spin-out company that provides data collection services for health services research. MU was Chair of the NICE Accreditation Advisory Committee until March 2017 for which he received a fee. He is chief investigator or coinvestigator on multiple previous and current research grants from the UK National Institute for Health Research and Versus Arthritis, and is a coinvestigator on grants funded by the Australian NHMRC. He is an NIHR Senior Investigator. He has received travel expenses for speaking at conferences from the professional organisations hosting the conferences. He is a coinvestigator on a study receiving support in kind from OrthoSpace. He has accepted an honorarium from CARTA. He is an editor of the NIHR journal series, and a member of the NIHR Journal Editors Group, for which he receives a fee. KS is an investigator in multiple previous and current research grants from the UK National Institute for Health Research and Versus Arthritis. She has received travel and accommodation expenses for speaking at conferences from the professional organisations hosting the conferences. She has published multiple papers on pain, some of which are referenced in this paper.
Search dates	Inception to 25 April 2017
Searched databases	Allied and Complementary Medicine (AMED); Applied Social Science Index and Abstracts (ASSIA); The Cumulative Index to Nursing and Allied Health Literature (CINAHL); EMBASE; International Bibliography of the Social Sciences (IBSS); MEDLINE; PsycInfo; Social Services Abstracts; Sociological Abstracts; Web of Science and Westlaw
Eligibility criteria	Population: Employers and people who were off work or sick-listed Disease: Chronic pain Intervention: Return to work Design: Face-to-face interviews or focus groups which explored perceptions of obstacles to return to work



Exclusion criteria	Language: Non-English-language papers
Q.A. used	Critical Appraisal Skills Programme (CASP) GRADE-CERQual (Grading of Recommendations Assessment, Development and Evaluation-Confidence in the level of Evidence from Reviews of Qualitative research)
(Statistical) analysis	NA
Description of the included studies	
Number of included studies	41
Design of included study	Qualitative studies
Covered years	1997 - 2017
Countries	Sweden (n=13), Canada (n=8), UK (n=7), Norway (n=4), Denmark (n=3), France (n=2), Australia (n=1), South Africa (n=1), Switzerland (n=1), USA (n=1)
Patient & disease characteristics	Neck pain (n=1), back or upper body (n=1), low back pain (n= 9), low back pain related to work (n=3), musculoskeletal pain (n=8), musculoskeletal disorders (n=7), spine-related pain (n=2), fibromyalgia (n=2), not specified chronic pain (n=1), back pain (n=2), non-malignant chronic pain (neck and back pain, traffic injuries – n=1)), back, neck or shoulder diagnosis (n=2), whiplash-associated disorders (n=1),back injury (n=1)
Interventions	Interviews with patients or employers
Involved professionals	Non reported
Settings	Community
Results	
Summary of findings	For people with chronic pain, and for their employers, navigating obstacles to return to work entails balancing the needs of (1) the person with chronic pain, (2) work colleagues and (3) the employing organisation. Managing pain, managing work relationships and making workplace adjustments appear to be central, but not straightforward, and require substantial effort to culminate in a successful return to work.
Barriers	• Managing pain by the worker • Managing work relationships between people with pain and their employers and colleagues • Making workplace adjustments • Social expectation to return to work despite pain

	• Lack of self-belief/ self-efficacy (concerns about their ability to meet the job demands, obtain help from others and manage their pain) • Health and illness and pain representations impact on return to work (those who perceived themselves as disabled by the pain and therefore unable to work and those who accepted the pain as part of their lives but something they could exert some control over and therefore felt able to work) • Not being understood by health professionals or people's closest relatives • Being believed by the employers (feeling of being judged and doubted and having to justify absence or limitations) • Impact of and on family (significant others are also seen to be highly influential in terms of their beliefs and thinking in relation to pain and return to work / conflicting demands of family and work) • Mismatch between employee and employer expectations of return to work (fear of letting employers down and not being able to fulfil work expectations) • Social isolation as a consequence of pain • System factors (obstacles to access to healthcare, social security and workplace systems) • Finance and benefits (e.g.: concerns about their finances, receiving state support struggled with shame)
Enablers	• Meaning of work as central to their identity • Autonomy (individual's ability to have control or agency in relation to their pain and their work situation i.e. being allowed some control and flexibility at work according to pain) • (Positive) influence of pre-return to work support and rehabilitation
Clinical implications	Obstacles faced by people with chronic pain in returning to work after a period of sick leave or unemployment can be used to inform the development of a return to work intervention
Authors recommendations	• Intervention to support return to work should be working collaboratively with the person who has chronic pain and the employer to explore ways of addressing managing pain, managing work relationships and making workplace adjustments. • Implication of clinicians to assess what is most important for the person and employer with whom they are working because of highly individual relationship between the different factors impairing the return to work • Interventions could be located in community/primary healthcare and delivered by case managers, for example, occupational therapists or occupational health nurses working alongside general practitioners or by employment specialists working in employment services and trained in pain management strategies. • Interventions would provide support tailored to the specific needs of people with chronic pain. • Collaborative approach including employer, the employee and the case manager should enable exploration of the ways in which obstacles to return to work might be overcome • More research is required from the employer's perspective (only 5 papers in the review)



Limitations and other comments

Limitations quoted by the authors	• Lack of precision in data reported in one study including It is apparent that small and large employers did not specify the nature of the industry in which they were engaged. • Reviewers' backgrounds (healthcare professional and non-healthcare professional) and experiences had potentially an impact on synthesis findings. • At the time of publication, the eMERGe Reporting Guidance for meta-ethnography had not been published.
• Other limitations	• Only articles published in English. • No clear robustness analysis
• KCE Q.A.	Low risk of bias

1.5.16 Evidence table – Leaviss 2020

Leaviss 2020¹³	
Objective	
Clearly mentioned	- To provide an overview of the evidence for patients' and HCPs' perspectives on the acceptability, relative benefits and potential harms of primary care or community-based behaviour modification interventions for MUS (medically unexplained symptoms) [chapter 4] - To provide an overview and analysis of the evidence for the contribution of contextual factors associated with the ongoing primary care consultation and the patient's interaction with primary care professionals to the success or failure of behaviour modification interventions ('behavioural interventions') for MUS [chapter 5]
Methods	
Design	Qualitative systematic review [chapter 4] Realist synthesis (i.e. review and synthesis evidence which focuses on understanding the mechanisms by which an intervention works (or not) [chapter 5]
Source of funding and competing interest	<u>Competing interest:</u> Rona Moss-Morris has published papers that met the criteria for inclusion in the review, and she was previously an advisor to the NHS Improving Access to Psychological Therapies programme. Peter White does consultancy work for a re-insurance company. He also is a member of the Independent Medical Experts Group, a non-departmental body, which advises the UK Ministry of Defence regarding the Armed Forces Compensation Fund. Peter White was also an unpaid chairperson of One Health between 2002 and 2010. One Health is a not-for-profit company that was set up to promote the British Psychological Society model within medicine. Andrew Booth is a member of the National Institute for Health Research (NIHR) Complex Reviews Advisory Board, the NIHR Health Services and Delivery Research Funding Board and the NIHR Systematic Review Advisory Group. <u>Source of funding:</u> the National Institute for Health Research (NIHR) Health Technology Assessment programme
Search dates	Inception to December 2015
Searched databases	MEDLINE, CINAHL, PsycInfo, EMBASE, Cochrane Database of Systematic Reviews, DARE, CENTRAL, HTA Database, Science Citation Index, Social Sciences Citation.
Eligibility criteria	Population: Patients in UK letting criteria for MUS, MUPS (medically unexplained physical symptoms) and somatoform disorders. Populations with FSSs (functional somatic syndrome) - (e.g. IBS (irritable bowel syndrome), CFS (chronic fatigue syndrome), fibromyalgia).



	- Health-care providers who had delivered behavioural modification interventions designed for patients with MUS (medically unexplained physical symptoms) including, for example, somatoform disorders, FSSs (functional somatic syndrome), irritable bowel syndrome, CFS chronic fatigue syndrome or fibromyalgia). Interventions: Behavioural modification interventions Outcomes: Qualitative data Design: Qualitative research, mixed-methods research, qualitative data embedded in trial reports or process evaluations
Exclusion criteria	Population: Subacute patients with intermittent pain (where current episode was < 3 months – or this information was not available from the paper/or they cannot be disentangled from the rest of the sample) Outcomes: Studies of management of MUS where evidence relating to a treatment of interest was not separately identifiable Design: Quantitative reports without qualitative evidence
Q.A. used	Critical Appraisal Skills Programme (CASP) Confidence in the Evidence from Review of Qualitative (CERQual)
(Statistical) analysis	Thematic synthesis to aggregate the findings Framework for HCPs: Positive factors relating to behavioural modification interventions as reported by HPs/what did you gain from being trained to deliver and/or delivering a behavioural modification intervention? Factors reported as important, wanted or expected for training in and delivery of behavioural modification interventions What did not help or was detrimental to the patients or delivery of the intervention Barriers – from the perspective of HPs as to why patients did not want behavioural interventions/or could not engage with them, or barriers to delivery of the intervention Neutral effects (neither benefits or harms)
Description of the included studies	
Number of included studies	<u>Chapter 4</u> - 10 papers reported from 8 studies among whose 3 focusing on HCPs <u>Chapter 5</u> – 104 papers spread across 19 different clusters
Design of included study	Surveys (n=6) and interviews (n=2)
Covered years	2007-2016
Countries	UK
Patient & disease characteristics	Total number of patients = 130



	• MUS/MUPS (6 studies in 78 patients) • CFS/myalgic encephalomyelitis (1 study in 46 patients) • Somatisation (1 study in 6 patients) More women than men contributed data for the studies, and age varied widely, ranging from 19 to 84 years
Interventions	Behaviour modification interventions
Involved professionals	<u>Chapter 4</u> : 38 HCPs: 3 nurse therapists, 3 supervisors, 24 GPs & 8 CBT therapists. More of the HCPs who contributed data were women and the age of the participants ranged from 30 to 60 years, where reported.
Settings	Primary care or community : at patient home, in a primary care mental health trust.
Results	
Summary of findings	Both patients and HCPs reported positive gains from taking part or delivering interventions: • For patients: ○ Positive aspect of the intervention: gaining support, being accepted and validated by the HCP (and participants, in the case of group interventions), receiving empathy and being listened to, receiving an explanation for their symptoms ○ Positive practical intervention elements: gains made from the self-management techniques they had learned, support for learning such techniques, by a good relationship between patients and the HCPs delivering the intervention, having a balance between psychological and physical elements (in GP interventions only) • For HCPs: ○ being trained or delivering the interventions helped to develop their own knowledge and skills around MUS ○ the experience was rewarding when patients engaged with them ○ important facilitators were training and supervision for the interventions ○ primary care or the community an appropriate and helpful but, only observed in the intervention for CFS/myalgic encephalomyelitis, the home setting could also be a source of difficulties (e.g. issues with privacy and interference from family members) ○ setting for the delivery of the intervention A number of reported barriers appeared to be underpinned by the relationship between the patients and HCPs delivering the intervention, and by beliefs and attitudes held by both parties. • Patients' own attitudes and beliefs: not to believe in the treatment model or found it unworkable, or had a belief in dealing with problems themselves. • Conflicts between HCPs and patients could impede success.



	• A lack of confidence in their (HCPs) own skills and abilities to deal with MUS or with HCP and patient's emotion • Patient attitudes and beliefs that went against the intervention, HCP attitudes and beliefs • Resource constraints. Both positive and negative experiences of the primary care setting were reported. • Relationship between HCPs and patients could sometimes lead to conflict – in some cases patients felt that the HCPs were asserting the intervention (in this case pragmatic rehabilitation) as the only right answer and disregarded the patient's point of view • Specifically relating to GP-delivered interventions, patients reported that they felt that there was a lack of understanding from the GP, and they also reported a feeling of being blamed by the GP. • Potential inadvertent detrimental consequences for patients suspected by HCPs. Detrimental effects of the intervention were associated with an abrupt end to the intervention and frustration attributable to symptoms not improving. Some patients and HCPs did not feel it could add anything for them. Relating to GP-delivered interventions, the evidence suggested that some patients may hold a belief that you should deal with the symptoms yourself and that they should self-manage without the input of HCPs.
Barriers	<u>Chapter 4</u> What patients did not like about behavioural interventions: • It made things worse/did not make any difference (adverse effects): frustration – things are not getting any better, negativity of the intervention, made symptoms worse, inflexibility of the model/not workable in everyday life [Low confidence] • HCPs' lack of understanding: HP does not understand, feeling of being blamed by the GP [Low confidence] • It ended (feeling of loss when the intervention ends/lost a friend) [Low confidence] • Conflicts between HCPs and patients: intervention asserted as the only right answer, patients felt the intervention did not address their symptoms, belief exercise is damaging despite HCP advice [Low confidence] Patients barriers: • Lack of information/choice given by referrers [Low confidence] • Sceptical of HCPs : GPs aim is to assert problems are psychological, mention of psychosocial problems data diverts GPs attention from other problems (so should not mention them), simplistic explanations, disagreements with HCPs that illness is physical [Moderate confidence] • Physical limitations: cannot physically undertake the intervention [Low confidence] • HCPs' lack of knowledge/skill at treating the symptoms: GPs are unskilled, nurse therapists are novices [Moderate confidence]

- Patients beliefs that you should deal with it yourself: Patients should self-manage, Inappropriate to discuss psychosocial problems (with GP), stigma related to psychosocial problems [Low confidence]

According to the HCPs, what did not help or were detrimental to the patients or delivery of the intervention?

- When HCPs felt that they were a novice or did not have the required skill levels (being a novice therapist/lack of experience, anxiety because of a lack of training/ knowledge, unfamiliarity with MUS, No specific MUS model to work with, not as comfortable with mental health aspects of the interventions (as physical health)) [High confidence]
- When HCPs struggled to deal with their own or patient emotions (not dealing well with failure, pessimism (from HCP) about dealing with MUS, angry patients) [Moderate confidence]
- HCPs' anxieties that the intervention may have detrimental consequences for the patients (nurse therapists worries about the interventions consequences, could increase patient dependency) [Moderate confidence]
- Too much complexity (difficulty of applying when the patients have multiple symptoms/complaints)
- The community setting was unhelpful (difficulties of being in the patients' home) [Low confidence]
- It's nothing new (neutral effects) (ride it out (when the intervention is not addressing needs and both parties know it), nothing new (HCPs felt that they were coherent data across the studies already doing it) [Moderate confidence]

According to the HCPs, why patients did not want behavioural interventions/or could not engage with them, or barriers to delivery of the intervention?

- Resource constraints (not enough time, other time constraints/competing pressures, other pressures go against applying reattribution (medicolegal), lack of clarity on service provision for MUS) [Moderate confidence]
- Patient beliefs (patients' belief in a physical cause, patients benefit from their symptoms (an agenda – secondary gain), patients have an agenda (e.g. target the locum)/patients' pre-existing beliefs/an agenda, patients' beliefs about not being able to do physical activity, patients' resistance to intervention/patients did not want to engage with the model [High confidence]
- HP skill, beliefs and attitudes (some GPs more skilled than others, GPs' prior expectations of patients, GPs' mood, personality clash (between HPs and patients) [Low confidence]
- Patient barriers (patients not able/willing to share, patients' physical difficulties were barriers to attendance and adherence [Moderate confidence]
- Not knowing if it is actually MUS [Low confidence]

Chapter 5: five programme theory but most of them were mentioned by patients and results are mainly enablers

- Use of labels is located firmly within a biomedical disease model which is not generally helpful within the context of MUS.
- A healthy professional-patient relationship is fundamental: However, this provides particular challenges within the pressured time and resource context of primary care. Central to trust is empathy; this may be challenging if patients are felt to be 'heartsink' or demanding of time and resources.



	• A contextually sensitive therapeutic response facilitates resolution: time available, heavy patient caseload, financial factors and lack of local mental health resource may negatively impact the role of primary care. • Congruity between disease models facilitates treatment: dissonance frequently exists between the mental conception, or models, of disease held by the patient and those held by the GP. • Working together, professional and patient can exit the diagnostic cycle: GPs find themselves in a paradoxical situation where the ordering of diagnostic tests may be variously seen as a response to patient demand, a signal to the patient that they are unable to resolve the situation within their more immediate resources, an abdication of interest or commitment to the therapeutic relationship and a potential cause of additional frustration when faced with a subsequent negative result. • Psychosocial talk only to be cued by the patient (IF HPs introduce psychosocial explanations, THEN the patient feels that they are being problematised) • A useful explanation can be good enough: PCP sometimes feel unable to explain symptoms; myth of certainty
Enablers	<u>Chapter 4:</u> <u>Patients enablers:</u> • Support (acceptance, validation, empathy, being listened to) [High confidence] • Explanation leading to understanding (accepting and understanding the treatment model) [Moderate confidence] • Learning achieved/gains from the interventions (self-management techniques, improved confidence, improved communication with family and friends) [Moderate confidence] • Benefits from being part of a group (sharing experiences with other patients, learning from other patients) [Low confidence] • Other important factors: ○ Balance between psychological and physical elements, flexibility [Very low confidence] ○ Group-based treatment [Low confidence] ○ More consultation time [Very low confidence] ○ More investigations, [Low confidence] ○ diet/nutrition advice [Low confidence] ○ Faith in the intervention [Low confidence] ○ Explanation (specialist knowledge of the symptoms, explanation of the symptoms) [Moderate confidence] ○ HCPs' understanding of the patient and symptoms (reassurance, relationship with the GP) [Low confidence] ○ Learning skills to deal with the symptoms (self-management techniques, support for learning) [Moderate confidence] <u>HCPs enablers:</u> • Training and supervision was useful (supervision in managing tensions, therapist peer support, increased GPs' awareness and altered perceptions, addressed professional and/or training needs) [Moderate confidence]

- Extended knowledge and skill of the HP (learning and applying boundaries of their role, flexibility of the therapist, increasing confidence in discussing MUS, helped structure MUS consultations) [High confidence]
- The primary care/community setting was helpful (secondary care may support a belief in a physical cause, tool to protect patients (from secondary care), primary care allowed a more tailored approach, being in patients' homes was helpful in building a therapeutic relationship) [Moderate confidence]
- Rewarding experience when patients engaged [High confidence]
- Factors reported as important: more training and supervision required [Moderate confidence]

Chapter 5: five programme theory but most of them were mentioned by patients and results are mainly enablers

- Belief:
 - Patients want their concerns to be taken seriously, THEN the patient will engage with treatment
 - Locating or co-ordinating treatment within primary care is also described as being likely to activate a further programme theory, not as a location but in recognition of the GP role, namely that of better knowledge of personal circumstances, which is achieved through continuity of care; It is important that a GP works continuously on maintaining this belief beyond the initial consultation, making sure that any referrals and tests are justified and explained so that they are not misconstrued.
 - The reality of demands of GP workload must understandably recognise instances where GP and patient negotiate an agreed explanation for and understanding of the patient symptoms.
- Focus on symptom management vs labels (IF HPs focus on the patient's symptoms and how to manage them, THEN the patient feels that something is being done about their symptoms and that their symptoms are not being dismissed as all in the mind): Some clinicians report not giving the patient a formal 'label', suggesting that there are circumstances when either patient or clinician, or even both, do not feel it productive to 'trigger' a label; informal terms or stories could productively be used as an alternative to labels.
- A healthy professional-patient relationship is fundamental: Although trust is key to most medical contexts, it becomes even more important within a context where epistemological incongruence and communication challenges are likely to occur. In this context, trust has both a supportive function and an enabling function, and it affects not only what is said but how it is said and interpreted. Central to trust is empathy; GPs, when interviewed, felt that showing an empathy with the patient, and taking an interest in them, enabled the patients to gain personal trust in the doctor.
- A contextually sensitive therapeutic response facilitates resolution (IF diagnosis, management and treatment takes place within a primary care setting, THEN the patient experiences continuity of care that may lead to progress and resolution): **operational and conceptual benefits of a primary care setting.**
- Congruity between disease models facilitates treatment (IF the disease model advanced by the HP matches, or is compatible with, that of the patient, THEN the patient will accept treatment):



	• Working together, professional and patient can exit the diagnostic cycle (IF patient and professional can avoid perpetuating extensive and unproductive diagnostic tests, THEN patient and professional achieve a sense of progress): • Psychosocial talk only to be cued by the patient (IF HPs introduce psychosocial explanations, THEN the patient feels that they are being problematised): mention the psychosocial aspects ASAP • A useful explanation can be good enough (IF HPs offer an explanation that they believe is congruent with current facts and uncertainties AND this explanation makes sense to, and is accepted by, the patient, THEN the patient believes that it is possible to maintain the therapeutic relationship): explanation; training
Clinical implications	A minority did not find the intervention helpful or did not want to take part in the intervention at all. If patients do not have the information that they need to make an informed choice, it is less likely that the intervention will be suitable for them. Other barriers that would need to be addressed in any future intervention include : • Patients' scepticism of HCPs, with patients reporting disagreements with HCPs regarding the nature of their symptoms, and an expectation that simplistic explanations will be provided. • Patients' belief that the HCPs delivering the intervention had an appropriate level of knowledge and skill. • Patient's physical limitations, • Problems of stigma around asking for help • Patient's belief in dealing with problems oneself. A further consideration for all interventions, but specifically • Continuity of care from the same HCP or team • Interventions should not end suddenly or without adequate follow-up.
Authors recommendations	Consider matching of intervention type to patients, taking into account patient preferences Further research is required to ascertain the generalisability of results and importance in the development of future interventions. Based on the realist synthesis, the authors recommended: • take concerns seriously • focus on symptom management • maintain positive relationship • provide a context-sensitive response • share congruent disease models • avoid futile diagnostic cycle • consider the appropriateness of initiating psychosocial cues • offer useful explanations



<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Some of the included primary studies were of moderate or low quality, as assessed using CASP • Confidence in some of the findings was assessed as moderate or low using the CERQual assessment. • Selection bias : data included in the main from patients who had agreed to take part in an intervention. • Recruitment bias : some HCPs found delivering the interventions to be a rewarding experience, and it might therefore be assumed that such HCPs would be more likely to recruit patients.
<i>Other limitations</i>	• Limited to UK studies • Generalizability of the review findings could be restricted because broader topic than chronic pain
<i>KCE Q.A.</i>	Moderate risk of bias



1.5.17 Evidence table – Liedberg 2021

Liedberg 2021¹⁴	
Objective	
Clearly mentioned	To synthesizes the qualitative literature reporting the experiences of persons with chronic musculoskeletal pain (CMSP), employers, and health professionals to determine which interventions are most effective in terms of return to work (RTW) and stay at work (SAW).
Methods	
Design	Meta-ethnographical review
Source of funding and competing interest	This research was funded by the Swedish Research for Health, Working Life and Welfare (grant number 2016-07414). The authors declare no conflict of interest.
Search date	Studies published between 2002 and 2018 were included (results)
Searched databases	Web of Knowledge database incorporating also PubMed
Eligibility criteria	Population: adults of working age (16–67 years) on sick leave with chronic musculoskeletal pain lasting more than three months whatever the gender Disease: a clinical diagnosis related to chronic musculoskeletal pain (e.g., chronic neck/shoulder and low back pain or generalized widespread pain including fibromyalgia) Intervention: interventions facilitated employee RTW (rehabilitation program) and SAW in paid jobs irrespective of position or organization; Outcome: experience of persons with CMSP, employers and health care professionals regarding interventions Design: qualitative studies or mix-methods
Exclusion criteria	Not mentioned
QA used	Critical Appraisal Skills Programme (CASP) The strength of the evidence of the emerging second-order themes from the qualitative analysis was evaluated by GML and CT using the Confidence in Evidence from Reviews of Qualitative research (CERQual)
(Statistical) analysis	Thematic synthesis
Description of the included studies	
Number of included studies	18 studies



	12 studies focused on patients; 3 focused on patients and health care professionals; 2 focused on patients and employers; and 1 focused on health care professionals.
Design of included study	Study designs were qualitative and mixed methods. For mixed method, only the qualitative part was included.
Covered years	2005-2018
Countries	One study from South Africa, one from Asia, one from Australia, two from North America, and 13 from Europe
Patient & disease characteristics	In total, 504 participants were included in the studies: 299 patients (127 males and 172 females), 187 health care professionals, and 18 employers. Three of the studies used the same sample, but the aims of these studies differed, so the participants from these studies were included in the analysis but the sample was only included once in the total number of study participants. Chronic pain, back pain, low back pain, musculoskeletal disorders, chronic (no specific) musculoskeletal pain, fibromyalgia
Interventions	RTW or SAW In this study, RTW interventions were defined as the act or an instance of intervening, provided by different stakeholders and described by the participants as focusing on facilitating/hindering a RTW/SAW.
Involved professionals	187 health care professionals 9 clinicians, 154 occupational therapists, 12 rehabilitation professionals and 12 HCPs (discipline non specified)
Settings	/
Results	
Summary of findings	The interventions in the review emphasised how the social and structural levels influence the RTW and SAW process. Five third-order themes emerged that influenced the RTW and SAW processes in different ways: 1. Societal structures influencing interventions; 2. Participating professionals' approach (=the way in which agency, social welfare, employers, and health care professionals exercise their role implementing interventions); 3. The need of support; 4. Parameters for personal change of behaviour; 5. Facilitating interventions at the workplace. These third-order themes contained 19 s-order themes..
Barriers	Societal structure: • Being doubted or judged by stakeholders, including employers as a lack of support from society • Increased expectations on work ability



- Form of employment (self-employed because reduced possibility of adjustments)
- Environmental barriers in the form of legal aspects such as the need for the employers to be aware and have knowledge of their obligations and increased costs needed to support employees and employers

Participating Professionals' Approach according to patients:

- Poor communication between professionals from different organizations resulting in conflicts between the medical professionals, employers, and the employees
- Disrespectful attitude of the medical profession or administration (Swedish Social Insurance Agency)
- Administration (Swedish Social Insurance Agency) providing vague or incorrect information creating a feeling of lost human value
- Being met with an unsympathetic attitude, a lack of empathy from employers, and a feeling of being doubted concerning personal abilities
- Uncaring attitude from the employer leading to an uncaring climate at the workplace and a decrease in work productivity.

Need of support

- Limited assistance in the health care system, especially primary care; waiting times resulting in feeling of putting life on hold.
- Lack of dialogue between GPs and employers
- Lack of helpful advice and or support in relation to work provided by GP
- GPs mainly prescribed medication, and the participants questioned the value of medication, since the medications often negatively impact their ability to work
- Lack of support from the employer

Parameters for Personal Change of Behaviour:

- Uncertainty about one's ability to accomplish work tasks, feelings of inadequacy, and other people's judgment
- Fear that a recurring injury might increase their pain and restrict their ability to make a living, further impacting their psycho-social conditions
- Anxiety about their future work capacity and that their condition may be regarded as progressive deterioration.
- Despair since patients with despair may externalize their problems as unsolvable and pain oriented.

Enablers

Societal structure:

- Social contacts, a feeling of responsibility, loyalty toward colleagues, self-respect, and a way to accomplish self-realization
- Form of employment (self-employed as an advantage)

Participating Professionals' Approach:

- According to employers, trust employees, and maintaining contact with absent employees



- Good inter-personal collaboration between the stakeholders (i.e., all professionals included in the RTW process) seen as positive (this confirmed that a rehabilitation process regularly supervised fostered a quicker RTW)
- Transfer of information/knowledge between health professionals and stakeholders in general (e.g. an external exchange of documentation as well as the agreement in reaching goals towards RTW were seen as facilitators for successful RTW.
- According to patients, more contact with professionals and positive encounters (e.g., during meetings) that considered a person's situation seriously, reflecting trust in the person's judgment and respect for their views regarding their pain.
- Symbolic gestures of trust and value from employers in terms of fitness rather than sickness improved how the participants viewed their capacity.

Need of Support:

- Significance of support from partner, family, and friends but also professionals from the different organizations involved in the RTW process, colleagues at the rehab clinic, workplace settings.
- Life situation (e.g., access to close friends and family) of the workers when identifying factors for gradual RTW.
- Strong and explicit desire from informant to have guidance
- Need for accessibility of HCPs, including psychological support and support with practical issues concerning the rehabilitation process in general.

Parameters for Personal Change of Behaviour:

- One's own "thoughts, beliefs and attitude" were identified as important for self-efficacy and RTW
- Increased self-awareness facilitates a change in how people viewed their health situation
- Possibility to reconstruct their own thoughts and identity was achieved during the rehabilitation program, and changing own behaviour and thinking was regarded as most important for interventions and therefore RTW
- Importance of the individual responsibility to make decisions and efforts to bring about changes in one's life
- Physical, cognitive, and level of self-adjustment capacity
- Personal skills, abilities, and resources—i.e., the belief (self-efficacy) to perform the job in spite of health and a physical capacity to perform the required duties
- Accepting and coping with the pain and keeping a positive attitude help build competence and reconceptualize one's role as an employee
- According to HCPs, Empowerment and self-management but also to be compliant (i.e., the extent an employee accepts functional restoration and RTW rather than pain reduction), where graded activity of unconscious motor skills or techniques were readjusted to prevent wrong postures at work.

Possible strategies**Facilitating interventions at the workplace.**



	- Several adjustments and strategies that accommodate a person's physical needs were identified as facilitators for RTW and SAW—e.g., reduction of working hours, involvement in decision making, extra time to complete tasks and schemes, regular breaks, and the possibility to change one's posture and position [- In addition, several studies identified facilitators for RTW and SAW related to education in how to perform duties safely, an adapted work technique/equipment/technical aids/assistive device, the possibility to work as supernumerary, gradually being reintroduced into the workplace, trying alternating duties/tasks, and retraining in other jobs.
Clinical implication	Oriented to RTW - Improved collaboration between stakeholders is essential, where the perspectives from the health care system, the employer, and the policy representative must be considered and intertwined when supporting an individual's RTW process. - It is necessary to enable active and regular support in the form of recurring meetings among the individual, the employer, and other stakeholders during the RTW process. - There is still a need to visualize and facilitate women's complete life situation and accompanying opportunities for returning to or staying in work, and this should be considered by all involved stakeholders in the process. - Supporting increased self-awareness and promoting change in behaviour, thinking, and level of self-adjustment capacity are key facilitators of RTW/SAW.
Authors recommendations	Not mentioned
Limitations and other comments	
Limitations quoted by the authors	- Possible that some studies were missed - Common limitations in the included studies were lack of information in relation to quotations (i.e., who expressed what) and a missing discussion on the potential influence of the researchers' positions on their results.
Other limitations	No sensibility analysis
KCE Q.A.	Low risk of bias

1.5.18 Evidence table – Magalhães 2017

Magalhães 2017¹⁵	
Objective	
Clearly mentioned	To uncover HCPs' beliefs and perspectives on how to best facilitate successful RTW in people with chronic pain (Research question: what are HCPs' perspectives with regards to the mechanisms (triggers of change) and approaches to support RTW for people with chronic pain?)
Methods	
Design	Qualitative meta-synthesis
Source of funding and competing interest	Not mentioned
Search date	Inception – October 2017
Searched databases	ProQuest, PsycInfo, Business Source Complete (BSC), EMBASE, CINAHL, and PubMed
Eligibility criteria	Population: Occupational therapists, physical therapists, physicians, psychologists, nurses, nurse practitioners, kinesiologists, chiropractors, ergonomists, recreational therapists, social workers, speech language pathologists, massage therapists, vocational therapists, and any others involved in the RTW process Disease: Chronic pain Intervention: RTW Outcome: Perceptions of health care providers Design: peer reviewed paper including a clear identifiable demographics of participants and using qualitative methodology Language: English
Exclusion criteria	Population: Individuals who have never been employed/lost time from work due to chronic pain Disease: acute pain Intervention: studies which do not examine the RTW process Outcome: studies that do not emphasize the perceptions of HCPs on the process of RTW Design: Grey literature; Not qualitative methodology; Studies which do not specify the required demographic information of individuals with chronic pain Language: Written in language other than English
QA used	Critical Appraisal Skills Programme Qualitative Research Checklist assessment tool (CRITICAL)



<i>(Statistical) analysis</i>	Inductive and interpretive meta-ethnography analytic approach
Description of the included studies	
<i>Number of included studies</i>	6 studies
<i>Design of included study</i>	Thematic analysis, triangulation of methods, and grounded theory approaches.
<i>Covered years</i>	2002-2013
<i>Countries</i>	Canada (2 studies) North-western Europe (4 studies)
<i>Patient & disease characteristics</i>	Chronic/persistent pain, long term non-malignant pain, back pain, low back pain, musculoskeletal disorders
<i>Interventions</i>	RTW
<i>Involved professionals</i>	GP, physiotherapists, chiropractors, occupational therapists, ergonomists, osteopaths, health and safety consultants, nurses, psychologists, social workers, and kinesiologist
<i>Settings</i>	/
Results	
<i>Summary of findings</i>	The findings from this synthesis highlight the importance of collaboration between all stakeholders involved in the RTW process and not solely focusing on HCPs' to be agents of change for successful RTW.
<i>Barriers</i>	Social interaction: significance of stigma and its role in delaying the RTW process (perception of patients hesitating; HCPs acting to fulfil the wants of patients rather than needs; family and community environmental factors; relationships at work) Inadequate coordination and excessive bureaucracy in systems employers, job nature health care treatments acts because needs of booking in outside of work hours. HCPs overwhelmed by the amount of occupational health knowledge required for the provision of successful RTW; GPs burdened by sickness-certification to provide. Issues in communication between patient, HCP and all other SH Unable HCPs to communicate effectively with patients and SH due to several reasons. HCPs unclear about their roles within RTW for chronic pain and RTW best practices Biomedical vs psychosocial; multidisciplinary rather than interdisciplinary team. No congruence between HCPs and patients perspectives and goals

	- Patients preferred passive treatment strategies (i.e. medication and massage) whereas HCPs recommended active treatment strategies.
Enablers	- Social interaction Attitudes of the workers towards the RTW, role within the family - Adequate coordination Dynamic multidisciplinary team - Communication between patient, HCP and all other SH Effective communication as a key to collaboration: <u>"integrational leadership"</u> as a prerequisite for interdisciplinary teams, where a member is responsible for developing internal and external communication structures to promote collaboration and integration; <u>Allotting time for all HCPs</u> to meet and discuss patient, administrative, and organizational developments and outcomes; <u>Providing a translator</u> when necessary is another way to provide aid in the information translation process. Collaborative approach with <u>mutually shared decisions and goals</u> with the patient: both the patient and the HCP working towards the <u>same goals</u> in the development of the treatment program. Establishing a <u>care coordinator</u> who is responsible to form and maintain a stable communication structure (all members on the therapeutic team kept informed about the patient's changing needs and goals; each interdisciplinary team member held equally accountable for maintaining and working within the pre-established treatment plan; needs of all stakeholders heard and considered for the most holistic delivery of RTW interventions).
Clinical implication	1. Training private musculoskeletal practitioners to focus more on work aspects and RTW, as opposed to having a patient led therapy with a focus merely on managing pain. GPs more education in occupational health to be able to make judgments about occupational fitness, as findings suggest that GPs feel they are not in the best place to be sole determiners of sickness certification. Organizational system plans to support the returning worker without disadvantaging co-workers and supervisors. It is important to avoid creating an unpleasant environment for the returning worker. Compensation system and unions for contributing in motivating injured workers to RTW after a workplace injury.
Authors recommendations	Congruence between stakeholders and patient perspectives on plan and goals for RTW can enable best practices for treatment and outcome performance. All stakeholders need to understand their roles and responsibilities in the RTW process. Communication and coordination among stakeholders is paramount for successful RTW outcomes, and most importantly, taking a collaborative approach with mutually shared decisions and goals with the patient, can lead to better results.
Limitations and other comments	
Limitations quoted by the authors	Only 6 studies included Healthcare systems and employment settings differ internationally: the findings may not be applicable to settings outside these regions.



	Difference in qualitative methodologies of the six studies, possibly causing analytical discrepancies. Studies incorporated in the meta-synthesis lacked identification of effective treatments and interventions for chronic pain, instead focusing on what needs to be changed in the system for better outcomes. Research team unable to explore articles published in languages other than English.
<i>Other limitations</i>	No grey literature
<i>KCE Q.A.</i>	Low risk of bias

1.5.19 Evidence table – Makris 2014

Makris 2014 ¹⁶	
Objective	
Clearly mentioned	To describe barriers to the management of persistent pain among older adults, summarize current management approaches, including pharmacologic and nonpharmacologic modalities; present rehabilitative approaches; and highlight aspects of the patient-physician relationship that can help to improve treatment outcomes
Methods	
Design	Clinical review
Source of funding and competing interest	Funding: This work was supported by funding from The SCAN Foundation. Dr Makris was supported by a National Institute on Aging GEMSSTAR grant (R03AG040653) and a pilot grant award from the Cornell Translational Research Institute for Pain in Later Life (P30AG022845); she is currently supported by the Rheumatology Research Foundation/ASP Junior Career Development Award in Geriatric Medicine and by Center for Translational Medicine, National Institutes of Health/National Center for Advancing Translational Sciences grants KL2TR001103 and UL1TR001105. Dr Gurland is supported by the Columbia University Stroud Center. Dr Reid is supported by grants from the National Institute on Aging (P30AG022845) and Agency for Healthcare Quality and Research (R01HS020648). Dr Abrams and Dr Reid receive support from the Howard and Phyllis Schwartz Philanthropic Fund. Dr Reid reported serving as a consultant to Endo Pharmaceuticals Role of the Funders/Sponsors: The funders/sponsors had no role in the design and conduct of the study; the collection, management, analysis, and interpretation of the data; the preparation, review, or approval of the manuscript; or the decision to submit the manuscript for publication Competing interests: All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Reid reported serving as a consultant to Endo Pharmaceuticals. No other authors reported disclosures.
Search dates	From January 1, 1990 through May 31, 2014
Searched databases	MEDLINE, Cochrane
Eligibility criteria	Population: Older adults (≥ 65y) or studies with a mean sample age of 60 years or greater or ones that reported age stratified results (i.e., for groups with a mean age above 60 years) Disease: Persistent, intractable or refractory pain. Interventions: Pharmacologic or nonpharmacologic interventions



	Design: RCT, randomized, systematic reviews, published guidelines, and consensus statements. Language: English
Exclusion criteria	Population: Sample mean age less than 60 years Disease: Cancer pain, pain at the end-of-life, pain at time of (or after) surgery including anaesthesia, specific pain states (e.g. dental pain, burn pain, rectal pain, facial pain), acute pain Intervention: Interventional approaches to pain reduction (e.g. nerve blocks, nerve stimulation), specific pain treatment focus (e.g. botulinum toxin, laser therapy, ketamine, shock waves), use of imaging to diagnose and/or treat pain Design: Qualitative study, epidemiologic study, health services research, non-systematic reviews, case reports, basic pain research Outcomes: Pain assessment and instrument development, provider attitudes/beliefs or targeted educational intervention, no pain outcomes
Q.A. used	Only level of evidence was rated: Ia, evidence from meta-analysis of RCT; Ib, evidence from at least 1 RCT; IIa, evidence from at least 1 controlled study without randomization; IIb, evidence from at least 1 type of quasi-experimental study; II, evidence from nonexperimental studies, such as comparative studies, correlation studies, and case-control studies.
(Statistical) analysis	NA
Description of the included studies	
Number of included studies	92 studies among those 11 reported about barriers and enablers
Design of included study	35 provided results on various pharmacologic interventions to include randomized controlled trials (n = 11), meta-analyses (n = 8), reviews or guidelines (n = 4), and other types of study designs, e.g. pilot or open-label studies (n = 9); 3 focused on safety outcomes. Of the 57 studies that evaluated nonpharmacologic interventions, most were randomized controlled trials (n = 26), followed by meta-analyses (n = 9) and nonrandomized pilot studies (n = 11); 11 used other types of designs (e.g., crossover studies).
Covered years	2001 - 2013
Countries	USA, UK (but not systematically stated for all studies)
Patient & disease characteristics	Older adults



	Osteoarthritis was the target pain condition in 50 studies, 29 enrolled individuals with persistent pain attributable to a noncancer cause, 7 focused on neuropathic pain disorders, and the remaining 6 enrolled older patients with other pain problems (e.g. back pain).
Interventions	Pharmacologic, nonpharmacologic, rehabilitation approaches
Involved professionals	Physicians, physical therapists, occupational therapists
Settings	Not mentioned
Results	
Summary of findings	- Formulating an effective treatment plan for older patients with persistent pain requires a clear understanding of their comorbidities, cognitive and functional status, treatment goals and expectations, and resources, including both social and family supports. - Reinforcement of the regimen based on methods of managing executive dysfunction, including cues for steps in treatment; rehearsing choices, planning, and sequencing; encouraging self-monitoring; and problem-solving with the physician (and family members) may yield additional benefits - Cultivating an enduring, trusting therapeutic alliance in which mutual treatment goals are established may be one of the most rewarding aspects of delivering (for the physician) and receiving (for the older patient) longitudinal pain care.
Barriers	Barriers pain specific to geriatric populations are mainly related to the pharmacological aspect of the pain management : - Age-related physiologic changes resulting in altered drug absorption and decreased renal excretion; - Sensory and cognitive impairments; - Polypharmacy; - Multimorbidity, particularly involving chronic conditions such as cognitive impairment, gait disorders, and kidney, lung, and cardiovascular disease. - Fatalism: patient holds out little hope of future benefit - Older adults' beliefs about pain and pain treatments. Barriers for health professionals: - Limited evidence base to guide management of pain in the older adult, - Physician concerns about the potential for treatment-related harm, - Attitudinal, access, and system-level barriers identified that also contribute to undertreated pain in vulnerable populations, including the elderly.



Enablers	Enablers to reinforce adherence set up by physicians: • Explaining and reemphasizing at each visit the benefits of the recommended intervention(s) • Tailoring the management program to the individual's preferences and abilities (the patient has identified aspects of the program that are most desirable, realistic, and feasible, thus increasing likelihood of adherence to nonpharmacological intervention) • Appropriate and accessible environment in which the older patient engages in a therapeutic activity • Leveraging social supports in the form of family members, home attendants, and community-based agencies Other enablers: • Reinforcement of socialization: encouraging more frequent communication with family and loved ones, group-based activities (e.g. chair yoga, music appreciation classes) • A strong therapeutic alliance
Strategies	To counter patient negative treatment expectations : • Remaining readily available to respond to questions and concerns with each intervention, • Providing an effective backup or “rescue” pain medication during each new analgesic trial, and • Taking the patient's reports of pain seriously, while at the same time refraining from promises about the results of treatment. • Making clear that HCP will not abandon her patient, emotionally or otherwise. • Linking potential treatment benefits with an important patient goal • Recommending the use of nonpharmacologic treatments that emphasize a positive attitude To reinforce motivation/adherence to non pharmacological treatment:: • Explaining and reemphasizing at each visit the benefits of the recommended intervention(s) • Tailoring the management program to the individual's preferences and abilities • Promoting appropriate and accessible environment in which the older patient engages in a therapeutic activity • Leveraging social supports in the form of family members, home attendants, and community-based agencies. • Encouraging patient engagement in pleasurable activities (e.g. reading, listening to music, shopping for clothes).and educating paid and family caregivers to reinforce and support her engagement in these activities.
Clinical implications	Key Points Regarding Overall Approach to Management of Persistent Pain in the Older Adult • Determine patient's comorbidities, cognitive and functional status, treatment goals and expectations, and social and family supports prior to initiating treatment • Intervene using a multimodal approach, including pharmacologic and nonpharmacologic treatments as well as physical and occupational rehabilitation modalities

- Develop and enrich therapeutic alliance between patient and physician (physician must respond promptly and reliably to patient calls and provide backup coverage when away; consider all patient input seriously; encourage hope without overpromising therapeutic success)
- Be willing to revisit previously used pharmacologic and nonpharmacologic treatment modalities with indicated modifications
- Involve and engage caregivers and seek out other resources (e.g. community-based programs) that can help to reinforce treatment adherence and maintain treatment gains
- Reinforce positive outcomes at each visit

Key Points Regarding Pharmacologic and Nonpharmacologic Approaches

- 1. Link potential treatment benefits with important patient goals (e.g. increased ability to perform activities of daily living)
- 2. Use medication combinations (in which each analgesic works by a different mechanism) to enhance analgesic effectiveness
- 3. Acetaminophen remains first-line pharmacologic treatment for older adults with mild-to-moderate pain
- 4. Avoid long-term use of oral nonsteroidal anti-inflammatory drugs, given their significant cardiovascular, gastrointestinal, and renal risks
- 5. Trial of opioid is appropriate for patients not responsive to first-line therapies and who continue to experience significant functional impairment due to pain
- 6. Consider serotonin-norepinephrine reuptake inhibitors or selective serotonin reuptake inhibitors in patients with comorbid depression and pain
- 7. Implement surveillance plan (i.e. efficacy, tolerability, adherence) with each new treatment
- 8. Physical activity (including physical therapy, exercise, or other movement-based programs such as tai chi) constitutes a core component of managing persistent pain in older patients
- 9. Educate older patients about safety and efficacy of cognitive behavioral and movement-based therapies and identify local practitioners or agencies that provide them
- 10. Determine whether treatment goals are being met; if goals are not met, medication should be tapered and discontinued, physical and occupational therapy prescription modified, or both.

Authors recommendations

- Intervene aggressively using a multimodal approach that includes both pharmacologic and nonpharmacologic treatments provided by a multidisciplinary team, including a geriatrician, rheumatologist, physical medicine and rehabilitation physician, physical and occupational therapists, and a psychiatrist or psychologist when appropriate. There is broad consensus around.
- Collaborative multi-component intervention includes physician and patient education, activation, and symptom monitoring in targeted primary care patients with persistent pain



<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	Limitations not discussed
<i>Other limitations</i>	• Only articles published in English. • Poor description of the included studies • Poor reporting of the results (reference is often missing) • One qualitative study included while this was described as a cause of exclusion. • No quality assessment of the primary studies • No robustness analysis
<i>KCE Q.A.</i>	High risk of bias

1.5.20 Evidence table – Mariano 2021

Mariano 2021³³	
Objective	
Clearly mentioned	To evaluate the benefit (& strength of the evidence) of group teletherapy for chronic pain. *many patients cannot access well-trained cognitive behavioural therapy (CBT) practitioners due to clinician availability, affordability, mobility, family care needs and/or living in a remote under-resourced area. Teletherapy = treatment delivery in which therapists connect with patients at a distance using an Internet device or telephone rather than seeing patients face-to-face; some reviews showed that use of digital health technology can be feasible, improve accessibility and increase adherence for chronic medical conditions) ->3 quoted references = reviews 2017 & 2018!
Methods	
Design	SR guided by PRISMA recommendations PROSPERO (CRD42018103686)
Source of funding and competing interest	No funds received The author(s) declared the following potential conflicts of interest with respect to the research, authorship and/or publication of this article: TYM was partially supported by a 2015 National Alliance for Research on Schizophrenia & Depression (NARSAD) Young Investigator Grant and a 2017 Harvard Medical School Norman E. Zinberg Fellowship in Addiction Psychiatry Research. TYM is an employee of Sage Therapeutics, Inc. and has served on an advisory board for Janssen Pharmaceuticals and as a consultant for Ad Scientiam, all outside the scope of this work. The other authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article. The contents do not represent the views of the Department of Veterans Affairs or the United States Government.
Search dates	1998 - April 2019
Searched databases	PubMed, EMBASE, PsychINFO, Web of Science Core Collection and Cochrane Library Screening of references of all selected articles for additional potentially eligible publications
Eligibility criteria	Population: Adult > 18y old Disease: Chronic, persistent or recurrent pain treatment Interventions: • Applied teletherapy



	• Components of CBT or one of three components of (a) acceptance commitment therapy (ACT), (b) mindfulness pain management, or (c) pain coaching and pain self-management • Used valid and reliable measures Design: • Prospective studies • Total sample exceeding 40 participants Publication format: Access to full report
Exclusion criteria	Interventions: • No components of either CBT or related psychosocial treatments (e.g. mindfulness meditation, coping skills training, ACT) • Exclusively using stand-alone pain applications (apps) or interactive voice response (IVR) • Only in-person therapy (NB group is term used in the search strategy) • Goal other than to determine effect of treatment Design: Analysis of retrospective data Publication format: Reviews, letter, meeting abstract and not peer-reviewed original research article, no abstract in English
Q.A. used	Bias assessment of RCTs (Verhaegen 1998)
(Statistical) analysis	M.A. not possible due to high heterogeneity Instead, qualitative analysis of the pooled findings
Description of the included studies	
Number of included studies	12 studies (17 publications)
Design of included study	Prospective studies, with a total sample > 40 participants, access to full report; using valid and reliable measures All RCTs except 1 English only
Covered years	2004-2019
Countries	No directly accessible info (Aust-NZ-Canada, US); The Netherlands; Sweden (n=3); Canada; Australia; U.S.A (n=5)
Patient & disease characteristics	- 1758 unique participants - Mixed diagnoses of chronic non cancer pain (LBP, Fibromyalgia, primary knee pain (n=1), arthritis (n=1))
Intervention group	Online Web-based course (75% of the studies); videoconferencing alone (n=2); telephone- delivered CBT alone (n=1)



	Some commercially available pain management programmes such as PainCOACH, Pain Course, Take Charge of Pain and WEB-SM.
Control group	Control conditions included treatment as usual (e.g. wait list, 66.7%), active comparison (16.7%) or either online discussion or education only (16.7%).
Follow-up duration	None to 24 months
Involved professionals	/
Settings	No restriction
Results	
Summary of findings	Preliminary evidence that Internet-based self-management of pain can be beneficial, although those trials with limited therapist involvement appeared to be less beneficial and showed greater noncompliance than those which had higher levels of therapist guidance or peer support. No articles found that conducted synchronous (i.e. live) group-based pain management using teletherapy (which was particularly surprising since there are a number of commercially available platforms for offering online group meetings (e.g. Skype, WebEx, GoToMeeting, VSee, Zoom)).
Efficacy and adherence of additional interventions	• Internet-based CBT and teletherapy were found to be helpful in improving pain (58.3% of studies), mood (50% of studies), activity level/disability (50% of studies) and catastrophising (41.6% of studies). Two of the studies showed a significant reduction in risk of current opioid medication misuse. • Results of comparative studies between interventions given in-person and those using video-conferencing suggested that, even though some preferred in-person treatments, both types of interventions were equally effective compared with treatment-as-usual controls • Trials with limited therapist involvement appeared to be less beneficial and showed greater noncompliance than those which had higher levels of therapist guidance or peer support.(BUT REFERENCE IS LACKING) ... If a person with chronic pain were instructed to use an online pain management programme and the user knew that his or her provider was tracking use of the programme there is a greater likelihood that the programme would be used. • Few of the selected studies seem to take advantage of technology that would allow chronic pain patients to interact directly with others and to establish a bond as part of a group membership.
Clinical implications	Support for the creation of online synchronous pain management groups in which a therapist is available to interact with the participants should be emphasised in future work. The rapid proliferation of mobile technology also offers an opportunity to enhance teletherapy approaches with smartphone apps to improve adherence and provide additional therapeutic exercises between virtual group meetings.



Authors recommendations	More rigorous long-term RCTs are needed to help establish the efficacy of remote group teletherapy for pain.
Limitations and other comments	
Limitations quoted by the authors	• Only articles published in English. • This review included a small number of trials and each study contained variability in design, content, populations investigated, outcome measures and interventions: e.g. some of the programmes were brief (e.g. four modules) and others were extensive (e.g. 20-week programme), and this has implications for comparing compliance in completing an online programme. • Most of the studies were unblinded and many had issues with treatment compliance/adherence and selection bias. Some studies were underpowered, had mixed subject type, included mostly women, had a F-U limited to 3 mo or less and/or had significant dropout. It was not always clear how use of programmes was tracked to assess compliance. Few studies used a comparative treatment group (active control). • Some studies used commercially available pain management programmes such as PainCOACH, PainCourse, Take Charge of Pain and WEB-SM, although there were no independent comparative studies using the same programme, and the programmes were not critically evaluated. • Because the video conferencing platforms varied based on availability of different modalities (e.g. PowerPoint presentations, live chat, videos and visual imaging) it was difficult to make comparisons between studies and to know whether the available technology played a role in improving compliance or outcome.
Other limitations	• Eligibility criteria not so clear (group intervention in the search strategy but not in the criteria) • No explanation of the method used for synthesis of results
KCE Q.A.	Low risk of bias

1.5.21 Evidence table – Mullins 2022

Mullins 2022³⁴	
Objective	
Clearly mentioned	To examine the evidence for pre-outpatient* group interventions in chronic pain In spite of recommendations, many patients are unable to obtain this care in a timely manner because of limited access, long wait times, and fragmented delivery systems; services are fragmented, lacking in multidisciplinary input, and limited by lack of psychologists or other allied HCPs. * “Pre-outpatient” refers to the time period after referral to the chronic pain outpatient service and before the outpatient visit.
Methods	
Design	Systematic review (+ MA but non conducted due to heterogeneity)
Source of funding and competing interest	No funding received; no conflicts of interest to declared.
Search dates	Inception – August 5, 2020
Searched databases	PubMed, EMBASE, Web of Science, CINAHL, ABI-Inform, and the Cochrane Library.
Eligibility criteria	Population: Adults >18 years of age Disease: Chronic pain, including chronic low back pain, chronic musculoskeletal pain, and fibromyalgia Intervention: Group pre-outpatient interventions Design: Randomized controlled trials, observational studies, retrospective studies, or descriptive studies Language: English language Publication format: Published in a peer-reviewed journal and full text of studies available.
Exclusion criteria	Disease: Cancer pain; pain from specific causes (e.g. osteoarthritis); headache; and conditions in which pain is not the main symptom.
Q.A. used	Version 2 of the Cochrane Risk of Bias (ROB-2) tool for RCTs and the Risk of Bias in Non-randomized Studies—of Interventions (ROBINS-I) for cohort studies.



	Assessment of the confidence in the individual outcome measures was reported with the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) approach.
(Statistical) analysis	For between-group comparisons over time, the paired Student t test was used for normally distributed data, and the Wilcoxon test was used for nonparametric data. For more than two groups, analysis of variance was used to compare groups at baseline, and repeated-measures mixed-model analysis was used to compare differences over time. M.A. non conducted due to heterogeneity
Description of the included studies	
Number of included studies	4 studies Smith 2016, Burke 2016, Davies 2011, Hayes 2011
Design of included study	Two randomized control trials (162 and 346 patients), one prospective observational study (143 patients), and one descriptive study (328 patients)
Covered years	2011 - 2016
Countries	No direct info; Australia (n=4)
Patient & disease characteristics	No direct info
Intervention group	RCT 1: 5-hour group assessment on topics such as pain neuroscience education, medical treatments and medication, and psychological factors related to pain, nutrition and activity + self-assessment RCT 2: 3-hour education session facilitated by HCPs: Information about chronic pain processes, psychological factors, the pain clinic, goal setting, sleep, self-care, exercise, activity, distraction/attention focus, and pacing. Printed handouts also distributed. Prospective study: 2-day pre-outpatient group education program, which was run over six sessions and featured topics such as orientation and importance of self-management, participation in activities and movement, patient stories, dealing with pain from a psychological perspective, and medical options for pain management Descriptive study: 80-hour group program: Understanding Pain involved a single pre-outpatient 90-minute education session based on pain neuroscience education delivered by pain consultant and psychologist. Lifestyle and Pain was a 5-hour pre-outpatient educational session for a maximum of 8 participants, which developed pain management action plans for participants. A website and pain videos were also developed. Moving with Pain and Living with Pain were not pre-outpatient interventions and instead were run by a physiotherapist or a psychologist over multiple sessions.
Control group	Individual assessment by a multidisciplinary team for 1 hour or standard waiting list management .



	In one RCT, a third arm was also included of patients who declined to attend or failed to attend.
Follow-up duration	3 mo or 6 mo
Involved professionals	RCT 2: Pain consultants, psychologists, physiotherapists Descriptive study: Pain consultants and psychologists
Settings	Before (tertiary) pain unit
Results	
Summary of findings	Moderate-to-low levels of participant engagement with the initiative, which varied across the included studies. No evidence that a pre-outpatient group intervention improves pain intensity, pain-related interference and psychological distress, very low-quality evidence that it improves pain self-efficacy, increases use of pain management strategies and low evidence that it produces high satisfaction levels.
Adherence to additional interventions	Moderate-to-low levels of participant engagement with the initiative, which varied across the included studies: • In Smith et al., 420 participants were screened, and 207 (49.3%) declined to participate. A further 17 were excluded. Of the 194 remaining, 86.5% attended the individual assessment (n=90), and 80% attended the group assessment (n=72). • In the study by Burke et al., 698 were screened, and 50.4% declined to participate (n=352). Of the 220 participants randomized to the interventional group, only 30% attended (n=66). • In the study by Davies et al., 291 patients were triaged to attend the pre-outpatient education intervention. Of a total of 319 patients (which included those referred to the education session after attendance at the outpatient clinic), 6.3% declined to participate (n=20), and 60% of the recruited 291 attended (n=176). Very low quality evidence of increased usage of pain management strategies from group pre-outpatient interventions. • In Smith et al., there were no statistical differences in the percentage of strategies implemented ($z=-1.723$, $P=0.085$) between individual assessment (median 73.9%, interquartile range 29.8%) and group assessment (median 66.7%, interquartile range 26.9%), but the number of strategies was not reported. There were no statistical differences on a five-point Likert scale in the confidence in implementing strategies ($z=-1.197$, $P=0.231$) between individual assessment (median 4, interquartile range 2) and group assessment (median 4, interquartile range 1). • In Davies et al., the use of active-behavioral strategies increased from a mean of 2.9 (standard deviation [SD] 3.0) at baseline to 5.5 (SD 3.3) at 3 months (mean change 2.5, SD 3.0, $P<0.0001$); active-cognitive strategies increased from a mean of 1.7 (SD 1.6) at baseline to a mean of 3.2 (SD 2.8) at 3 months (mean change 1.4, SD 2.6, $P=0.0004$), and passive strategies increased from a mean of 3.1 (SD 2.5) at baseline to 4.0 (SD 2.9) at follow-up (mean change 1.2, SD 2.5, $P=0.0014$). • In the descriptive study by Hayes et al., attendees reported intending to pursue an average of two active management strategies.



Very low quality evidence that group pre-outpatient interventions are associated with **improvements in pain self-efficacy**. This was reported in two studies.

- The RCT by Smith et al. showed an improvement in both group assessment ($t[36] = -3.472$, $P=0.001$) and individual assessment ($t[43] = -2.934$, $P=0.005$), with no between group differences at follow-up ($t[77.56] = -0.13445$, $P=0.89343$).
- Davies et al. also reported an improvement in pain self-efficacy with the intervention; however, the data for this were not presented in the article.
- There was a high risk of bias present in Smith et al., and reported findings and improvements were also seen in the control arm. The findings reported in Davies et al. cannot be used because of the absence of data for reported outcomes.

Low-quality evidence that group pre-outpatient interventions result in **high satisfaction levels**. This was assessed in three studies with different methodologies.

- Smith et al. reported equivalent satisfaction levels across both group assessment (mean 4, interquartile range 2) and individual assessment (mean 4, interquartile range 2) as rated on a five-point Likert scale ($z = -0.134$, $P=0.894$).
- In Burke et al., 77% reported that they were at least “moderately” satisfied with the education program, 33% were “mostly” satisfied, and 26% were “completely” satisfied.
- Patient satisfaction also improved in Davies et al. on a seven point Likert scale, from a mean score of -0.79 (not satisfied) (SD 1.61) at baseline to 0.09 (satisfied) (SD 2.11) 3 months later (change score = 0.88 , SD 1.76; $P=0.0003$).

Other outcomes measured: Low-quality evidence that a pre-outpatient group intervention reduces waiting times and costs per patient, very low-quality evidence that it reduces health care utilization, and very low-quality evidence that it improves service throughput.

Clinical implications

Group interventions before individual appointments have the potential to provide important improvements in service delivery, including improvements in waiting times and cost per patient. Benefits for patient outcome measures are less clear.

Authors recommendations

Ideally, patients recruited to these interventions could be followed up over a longer period of time to investigate how they responded to subsequent treatment approaches.

Individual factors need to be considered in order to identify reasons for nonattendance to ensure greater therapeutic alliance and patient engagement.

Feedback from those who did not participate or did not attend should be examined in future studies, and efforts should be made to identify whether individual factors exist that predict who might benefit from group based interventions, such as those described in the present review.

The need for assessing multiple domains in chronic pain should be balanced against the burden of assessment. Furthermore, when different tools are used

across studies, it complicates the process of smooth comparisons of outcome domains. Perhaps future studies should consider consolidation of these scales to reduce attrition and to allow comparisons to be made more easily across studies.

**Limitations and other comments****Limitations quoted by the authors**

- High heterogeneity (in interventions, outcomes) and high levels of bias existed in the included studies.
- Inconsistencies were apparent across studies in certain outcome domains, which affected confidence in the results.
- Both randomized controlled trials had a high risk of bias related to missing data, and one also had a high risk of bias related to the randomization process. The only prospective study in the review was at critical risk of bias particularly because of the presence of confounding variables [28]. One study reported outcomes, but no data were contained within the publication for these results

Other limitations

Australia only

KCE Q.A.

Low risk of bias



1.5.22 Evidence table – Ng 2021

Ng 2021. ¹⁷	
Objective	
Clearly mentioned	To investigate the barriers and enablers that can influence healthcare professionals' adoption and clinical implementation of a biopsychosocial approach to musculoskeletal pain
Methods	
Design	Meta-synthesis and qualitative evidence synthesis – PROSPERO (CRD42019137844)
Source of funding and competing interest	One author is supported by an Australian Government Research Training Program Scholarship for her PhD studies. No other conflict of interest to declare
Search dates	Inception – July 9, 2019
Searched databases	MEDLINE, PsycInfo, EMBASE and CINAHL + secondary search from citations of the included studies in 6 previously published qualitative reviews related to the current topic of interest in Scopus
Eligibility criteria	Population: Adults Disease: All noncancer, musculoskeletal pain conditions. Intervention: Biopsychosocial model of pain care (defined as any clinical approach that systematically considers biological, psychological, and socioenvironmental factors, and their complex interactions in understanding musculoskeletal pain.) Outcomes: Primary healthcare professionals' attitudes, beliefs, experiences, and perspectives of using a biopsychosocial approach or intervention to manage musculoskeletal pain or adhering to biopsychosocial-oriented clinical practice guidelines. Primary healthcare professionals (e.g. general practitioners, physiotherapists, occupational therapists, psychologists, and chiropractors) can be from the same profession or a mixture of professionals from a multidisciplinary team. Design: Primary qualitative studies using qualitative data collection and analysis methods or mixed methods presenting separately the quantitative data.
Exclusion criteria	Population: Pain in juveniles, paediatric, or the adolescent populations, non-outpatients (e.g. emergency department, palliative care, or hospital wards) Disease: pregnancy-related low back pain, palliative care pain or cancer pain Interventions: opioid or drug prescription in musculoskeletal pain care, no clear indication of using a biopsychosocial approach to musculoskeletal pain care, clinical practice guideline that did not advocate a biopsychosocial framework, Outcomes: (1) patients' perspectives of their healthcare professionals, (2) reporting mixing healthcare professionals' perspectives and patients' perspectives (3) entry-level medical and health science students' perspectives (4) reporting mixing healthcare professionals'

	perspectives and entry-level medical or health science students' perspectives, (5) evaluation of the experience of healthcare professionals after participating in a biopsychosocial training intervention related to musculoskeletal pain (which was already the topic of a contemporary review).
Q.A. used	Critical Appraisal Skills Programme (CASP) checklist for qualitative studies, in combination with the Consolidated criteria for reporting qualitative research (COREQ) checklist. To assess the credibility of a qualitative study, emphasis was given to 4 of the CASP domains: (1) recruitment strategy, (2) data collection procedures, (3) consideration of ethical issues, and (4) data analysis methods.
(Statistical) analysis	Meta synthesis approach using both deductive and inductive process with an epistemological basis in objective realism
Description of the included studies	
Number of included studies	25 studies
Design of included study	24 primary qualitative studies (semi-structured interview, in-depth interviews, focus groups, medical records, observations of video-recorded treatment sessions, reviews of Documents regarding local directives and regulations.) and one dissertation
Covered years	2007 – 2019
Countries	Canada (n=5), Germany (n=3), Ireland (n=1), Italy (n=1), Netherlands (n=1), New Zealand (n=2), Sweden (n=1), United Kingdom (n=7), Australia (n=1), US (n=2) and Brazil (n=1).
Patients & disease characteristics	Low back pain (LBP) was the most studied among the MSK pain:
Interventions	Biopsychosocial-oriented clinical practice
Involved professionals	413 healthcare professionals from diverse professions (9 acupuncturists, 6 anaesthetists, 20 chiropractors, 127 GPs, 7 nurses, 17 occupational therapists, 14 osteopaths, 1 pain management consultant, 13 physicians, 191 physiotherapists, 6 psychologists, and 2 rheumatologists)
Settings	Outpatient setting
Results	
Summary of findings	Three main conceptually overlapping metathemes emerged from the data, namely barriers and enablers at the clinical level (micro), service level (meso), and system level (macro). Micro level factors were (1) HCP knowledge and skills, (2) HCP personal factors, (3) misconceptions of clinical practice guidelines, (4) HCP perceptions about patient factors, (5) HCP perception of time Meso level factors were (1) clinical practice guideline formulation, (2) clinical community factors, (3) funding models, (4) health service provision, (5) resourcing issues, (6) workforce training issues



	Macro level factors were (1) Health policy (2) organisational factors, (3) social factors Interdependency of the microlevel factors identified in this review, taken along with the contextual factors in the mesolevel and macrolevel, likely need consideration when designing biopsychosocial education, training, or facilitating implementation for musculoskeletal pain care. At present, encouraging healthcare professionals to capture patient narratives, foster presence and connection with patients, and seeking collaboration within the clinical community can support and enable person-centred biopsychosocial musculoskeletal pain care. In parallel, there is an urgent need for policymakers to invest in high-value person-centred pain care; for professional and work organizations to similarly promote value-based care; and incorporate patients' perspectives into models of care and pain training programs. The consideration of appropriate whole-of health system frameworks to guide the implementation and evaluation of biopsychosocial interventions is recommended.
Barriers	- Theme 1: Microlevel <u>HPCs knowledge and skills</u>: lack of clarity on what psychosocial factors are (no formal assessment scale) ; lack of understanding of the concept of evidence-based practice and the hierarchy of evidence to critique what they read; inability to identify or manage psychosocial factors, to make connection between biological and psychosocial factors or to apply BPS model; approach of addressing biomedical first or only; difficulty forging a strong clinical-patient alliance; inability to use communication and interpersonal skills; lack of knowledge of what other healthcare professionals do, other treatment options, and when and where to refer to; lack of skill to manage and negotiate health beliefs and patients' expectations; lack of skill to manage patients' emotions and reactions; <u>HCPs personal factors</u>: HCPs' negative emotions associated with the management of chronic pain, psychosocial factors and the use of CPGs and questionnaires (HCPs felt frustrated, uncomfortable, professionally insecure, embarrassed and reluctant to ask about patients' psychosocial factors); HCPs habits that they subconsciously continue with (e.g. preference to explore psychosocial factors informally and intuitively rather than using questionnaires, may avoid discussing psychosocial factors entirely or find it easier to take the biomedical approach first or use the biopsychosocial approach as a tool when needed rather than an approach that informed the entire patient encounter), or they may consciously not feel a desire to learn; consideration that BPS is not their role (including the role to refer on) and scope of practice; HCPs biomedical treatment orientation or professional identity; HCPs unhelpful beliefs (including misconceptions) towards the use of a BPS approach or the use of guidelines; <u>HCPs misconceptions of clinical practice guidelines (CPGs)</u>: Guideline recommendation(s) perceived as uncertain OR unhelpful; Guidelines perceived as generic OR simplistic(one-size-fits-all) OR too mechanistic, prescriptive OR rigid in the management of patients' musculoskeletal conditions; Guidelines perceived as not providing adequate clinical tools OR perceived as having too many psychosocial questionnaires to choose from; HCPs generally not inclined to pay attention to CPGs, presentation of CPGs not appealing and may be incompatible with HCPs' way of learning; HCPs unclear of what 'nonspecific' means in the nonspecific musculoskeletal pain diagnosis in CPGs; <u>HCPs perceptions about patient factors</u>: HCPs interpretation or judgment of patients' lack of motivation or ulterior motives (wanting stronger pain medication or being invest in the sick role for financial benefit or compensation or playing the sick role to escape pressure or avoid working or manipulate family relationship); Patients' biomedical focus or expectations (e.g. to have passive treatment or a quick fix), unhelpful beliefs and attitudes (e.g. not being open minded to acknowledge psychological factors and refusal to understand the relationship between psychosocial factors, pain, and disability) and poor health literacy; HCPs' judgments about patients' circumstances, including the judgment of patients' social issues (e.g. emotional problems, relationship problems, unhappiness with work, alcohol misuse)

and involvement with a legal case, which may overemphasize the negative stereotype (exaggerating, dependent, beyond help) of chronic musculoskeletal pain.

HCPs perception of time: insufficient time to communicate, explore and manage psychosocial factors within a typical clinical consultation, and no time to reflect, or read and learn about CPGs.

Theme 2: Mesolevel

CPG formulation: Because of some uniformity in practical procedures, GL may not be compatible with the concept of delivering individualized care; GL development may not take into account HCPs' previous clinical practice, former knowledge, training, and real-world situation of lack of resources such as funding and time and geographically separate clinics.

Clinical community factors: lack of access and availability of a clinical support system or network with an efficient communication channel (lack of access to other healthcare professionals (through collaboration or meetings) because of spatial or organisational distance); Conflict between HCPs in the interpretation about what care is required (may result in inefficient communication, be disturbing to the relationship with peers or give rise to contradictory patient information and confusion); biomedical focus within peers could supersede any GL recommendation.

Funding models: patients' lack of adequate health insurance or lack of money to afford treatment; lack of funding from government or organizations to remunerate healthcare professionals to explore psychosocial aspects in compensation for their time and qualifications; anticipatory loss of income for some private clinics because of a reduced number of treatment sessions for some patients if a biopsychosocial approach or guideline care was used; and funding required to reconstruct existing practices to incorporate psychologists and training.

Health service provision: The work processes or requirements within organisations, such as completing a large amount of administrative work may disincentivise HCPs to comply with guidelines; The work environment could challenge HCPs in addressing psychosocial factors—it was just not operationally feasible for a busy hospital outpatient department or the structure of group therapy sessions limited healthcare professionals' ability to explore psychosocial factors at an individual level.

Resourcing issues: Short clinical consultation time and limited frequency of follow-up consultation, and time delay on referral to other professional and long wait list for specialist services and investigations; lack of specialist services, appointment slots, changes in the attending doctor on every patient encounter, clinic infrastructure to offer privacy (private rooms), and resources (such as educational content and tools) to support a BPS approach.

Workforce training issues: Lack of counselling/psychosocial training to help HCPs apply a BPS approach (Suggested content of such training from the healthcare professionals' perspectives include what are psychosocial factors (including how much emphasis to place on it in a patient) and how to connect the biological to the psychosocial factors or component parts of the biopsychosocial model).

Theme 3: Macrolevel

Health policy = level of political support or attention provided by governments, compensable bodies, professional associations, and regulatory boards to provide evidence-based care: Musculoskeletal conditions (e.g. back pain) were not part of the government's target to receive the attention and funding needed; Stature may be lacking for some professions listed as an important part of evidence-based medicine, in some countries (e.g. physiotherapy in Germany); Audit of HCPs' adherence to guidelines imposed by government agencies was perceived as a threat to medical autonomy.



	<u>Organizational factors</u>: Criterion for the funding set by healthcare systems, insurers, or organizations can be incompatible with the use of a BPS approach, could influence how HCPs worked (e.g. remunerated per visit, per physician's referral, or lump-sum payment), who to refer to, treatment type, time, duration, and frequency to see patients, which may not be perceived to align with recommendations from guidelines or person-centred care ; Regulations within healthcare systems or workplace culture may not explicitly endorse the use of a biopsychosocial approach; may penalize doctors for over-referring to other professionals; or employers of patients may be resistant to grant access to the workplace for rehabilitation. <u>Social factors</u>: persistence of a biomedical culture in healthcare professions and systems; Social stigma and negative connotation towards psychological services prevented some healthcare professionals from referring patients for appropriate help. In addition, pressures from patients and stakeholders for imaging and the pervasiveness of misleading information spread on the Internet were also challenging social barriers to tackle towards psychological services.
Enablers	- Theme 1: Microlevel <u>HCPs knowledge and skills</u>: knowledge on how to identify or manage psychosocial factors and apply BPS model (e.g. Knowing how to use questionnaires and instruments for psychosocial screening and ability to see pain as only a component of the patient's overall health that can be exacerbated by psychological and social stress); ability to build trust and rapport, be empathetic and validate the patient's perspective, and knowing how to manage conflicts and treatment goals in the doctor-patient or therapeutic relationship (clinical-patient alliance); ability to use communication and interpersonal skills (ability to use patient-centred communication, lay medical vocabulary and language to engage, motivate, and provide explanations to patients, and having the skills to listen, provide reassurance and promote or talk about the biopsychosocial approach to patients); knowledge of what other healthcare professionals do, other treatment options, and when and where to refer to; skill to manage and negotiate health beliefs and patients' expectations; skill to manage patients' emotions and reactions; knowledge of individualized or personalized care; knowledge that to treat chronic pain, it is not about curing it; rather, managing pain; knowledge that the pain score is a means for the patient to communicate a more general suffering; and the skill to identify and modify pain, specific to patients' aggravating activity or affected behaviour. <u>HCPs personal factors</u>: HCPs ability to be self-aware of their gaps in knowledge, with an ability to separate informal judgements about patients from the clinical reasoning process, with an ability to reflect on evidence and clinical experience separately; consideration that BPS is their role (including the role to refer on) and scope of practice; HCPs biopsychosocial treatment orientation or professional identity; HCPs helpful beliefs (including misconceptions) towards the use of a BPS approach or the use of guidelines; HCPs additional qualifications through upskilling or postgraduate courses and relevant work experience associated with the use of a BPS approach. <u>HCPs misconceptions of clinical practice guidelines (CPGs)</u>: / <u>HCPs perceptions about patient factors</u>: Patients' complexity of clinical presentation (such as those with long-term disability, multiple yellow flags, clinical presentation of allodynia or kinesiophobia, or those who were not progressing) prompts the exploration of psychosocial factors or the use of recommendations from CPGs. <u>HCPs perception of time</u>:/ - Theme 2: Mesolevel <u>CPG formulation</u>: Compatibility of guideline care to HCPs' clinical practice, former knowledge, training, and real-world practice; Existence of CPGs help to justify evidence-based practice and facilitate teamwork and common language among HCPs, provided HCPs are familiar with the content; Guidelines are a good source of information to patients and contribute to their understanding of their condition and

evidence-based treatment options; Guidelines provide up-to-date, useful information and decisional algorithms to help HCPs in their clinical decision making and navigate clinical uncertainty;

Clinical community factors: access and availability of a clinical support system or network (multidisciplinary, interdisciplinary or intradisciplinary) with an efficient communication channel (team meetings for integrated care; general support by peers who were interested to manage psychosocial factors; administrative staff working within the clinical team; and experiential learning from colleagues); alignment between HCPs in the interpretation about what care is required.

Funding models: specific financial support from workers' compensation board or health insurance.

Health service provision: level of alignment of work processes within organizations to evidence-based methods or a BPS approach (When there was strong leadership support within organizations to adhere to guidelines, or if there was an expectation from organizations and local directives for healthcare professionals to keep up with professional development and evidence-based practice).

Resourcing issues: availability of specialist services, appointment slots, clinic infrastructure, and resources (such as educational content and tools) to support a BPS approach (e.g. embedding risk stratification tools within a computer, tablet, or mobile device to save time in assessing psychosocial factors; ready availability of psychosocial screening tools or questionnaires in the clinic setting; educational videos and resources to explain pain; one-on-one therapy sessions for patients (rather than group therapy); and access to private treatment rooms.

Workforce training issues: /

Theme 3: Macrolevel

Health policy: Endorsement and political support by professional organizations and compensable bodies for the use of clinical practice guidelines may be seen as a form of assurance and support to healthcare professionals.

Organizational factors: When the funding criterion from compensable bodies or healthcare systems aligned with recommendations from guidelines or multimodal rehabilitation as a biopsychosocial treatment model, this facilitated the uptake of evidence-based guidelines; Employers supportive of a graduated approach for the return to work served as an enabler to promote the use of a biopsychosocial approach for rehabilitation.

Social factors: /

Authors recommendations

Skills training needs to be aligned with what healthcare professionals need and contextualized to their care setting and jurisdiction; Emerging workforce pain training through universities and continuing pain education upskilling through professional associations may need to more deliberately target skills, such as counselling, effective communication, and behavioral management, to drive improved adoption of a biopsychosocial model of pain care. Moves towards competency-based training might help.

Encouraging policy makers to reorient funding models towards high-value pain care while concurrently disinvesting in low-value or no-value care is one lever that could help drive reform. Engagement with consumers and incorporation of patients' perspectives into the design of models of care and health professional pain training programs may also be a crucial lever to narrow the evidence-to-practice gap.

Considering the barriers and enablers that emerge from this evidence synthesis, we suggest that frameworks such as the Sustainable integrated chronic care modeLs for multi-morbidity: delivery, Financing, and performance (SELFIE) or the Consolidated Framework for Implementation Research may be more appropriate and helpful to guide improved adoption/implementation of a biopsychosocial model



of pain. These frameworks present the concepts and constructs across multilevel and take into account the complex interplay across multistakeholders in a context-specific manner (i.e. what works in a specific jurisdiction). The SELFIE and Consolidated Framework for Implementation Research do not just focus on the determinants of individual-level behaviour change but align the organizational-level factors with the individual-level factors to promote thorough analysis, effective implementation, and systematic evaluation of outcomes. Future research should aim to comprehensively explore how these specific mesolevel and macrolevel factors might develop a systems-based approach to better support healthcare professionals' adoption of the biopsychosocial approach to musculoskeletal pain in clinical practice.

Limitations and other comments

Limitations quoted by the authors

- Only articles published in English.
- Team were all physiotherapists
- Contextual factors (low-middle-high income country, rural vs urban, public vs private healthcare) not deeply considered
- Capturing the perspectives of healthcare professionals who chose not to engage with the biopsychosocial approach may be valuable but difficult to achieve.

Other limitations

/

KCE Q.A.

Low risk of bias

1.5.23 Evidence table – Schafer 2018

Schafer2018 ³⁷	
Objective	
Clearly mentioned	To compare the efficacy of eHealth-supported home exercise interventions with no or other interventions regarding pain, physical function, and health-related QoL in patients with osteoarthritis of the knee. Nonsurgical interventions such as exercise, enhanced physical activity, and self-management have shown beneficial effects for pain reduction, physical function, and quality of life (QoL), but access to these treatments may be limited (because of the patients' mobility limitations, transport problems, and time constraints, especially in rural areas, and also limited health care resources due to the increase of chronic disease). Therefore, home therapy is strongly recommended. However, adherence to these programs is low. Patients report lack of motivation, feedback, and personal interaction as the main barriers to home therapy adherence. To overcome these barriers, electronic health (eHealth) is seen as a promising opportunity.
Methods	
Design	SR in accordance with the PRISMA recommendations. PROSPERO (CRD42017072079)
Source of funding and competing interest	No information on funding. The authors declared none conflict of interest.
Search dates	Inception – July 27, 2017
Searched databases	MEDLINE, CENTRAL, CINAHL, PEDro and journal websites + hand-searching in reference lists of included studies
Eligibility criteria	Disease: Osteoarthritis (OA) of the knee; symptomatic unilateral or bilateral OAK based on self-report, radiography, clinical signs, or physician diagnosis. Interventions: All types of eHealth-supported home exercise interventions compared with no treatment or other treatments Outcomes: pain, function, and QoL. Design: RCTs and CCTs (controlled clinical trials) Language: English or German.
Exclusion criteria	Design: All other forms of arthritis
Q.A. used	The Cochrane tool to assess risk of bias in individual studies,



	GRADE for the quality of evidence across studies
<i>(Statistical) analysis</i>	For continuous data, standard mean differences (SMDs) and 95% CIs were calculated from means and SDs using the following formula: $SMD = \text{mean difference} / \text{pooled SD}$. An inverse variance random-effects meta-analysis was carried out pooling standardized mean differences (SMDs) of individual studies. I^2 statistic was used to assess statistical heterogeneity across pooled studies. Values of 25%, 50%, or 75% were considered as low, moderate, or high level of heterogeneity, respectively. Subgroup analysis (not prespecified) was conducted for different eHealth modes of delivery (mobile apps vs telephone). A sensitivity analysis to assess the impact of treatment duration on heterogeneity (excluding the 2 studies with the shortest intervention duration).
<i>Description of the included studies</i>	
<i>Number of included studies</i>	7 studies for 6 RCTs
<i>Design of included study</i>	6 RCTs
<i>Covered years</i>	2013-2017
<i>Countries</i>	Netherlands, US, Canada, Australia (n=2), Nigeria (n=2)
<i>Patient & disease characteristics</i>	742 participants randomized in intervention (n=376) or control (n=366) groups. Sample sizes in individual studies ranged from 34 to 211 participants. Four studies included participants with unilateral or bilateral OAK ; one study included a mixed group with knee OA (67%), hip OA (21%), or both (12%); and one study included participants with chronic knee pain
<i>Interventions</i>	Exercises supported by mHealth (Internet-based programs or mobile apps) and telephone-supported exercises. Exercise interventions most commonly strengthening exercises, walking, or PA reinforcement. The eHealth component included education on topics such as exercise, healthy diet, pain management, and self-management. A counselling component, typically consisting of reminders, encouragement, and discussion of experienced barriers in varying proportions was also present.
<i>Comparators</i>	Internet-based educational material, Information on the benefits of walking, waiting list, delayed program (same program 1 month later), same exercise program in clinic
<i>Follow-up</i>	Short-term follow-up time points of measurements included 1 Month, 6 weeks, 3 months, and 6 months. Long-term follow-up ranged from 9 months to 12 months. One study reported long-term outcomes at 18 months.

Involved professionals	No info
Settings	Home
Results	
Summary of findings	eHealth-supported exercise interventions resulted in less pain, improved physical function, and health-related QoL compared with no or other interventions; however, these improvements were small (SMD<0.5) and may not make a meaningful difference for individual patients. The quality of evidence was low to moderate for short-term outcomes, therefore future trials are likely to change the results for short-term outcomes. The quality of evidence for long-term outcomes were moderate to high; it seems unlikely that future studies may change results substantially.
Efficacy of additional interventions	Beneficial short-term: • pain (n=6): SMD=-0.31, 95% CI -0.58 to -0.04, small effect size (5%), high I² (67%), low quality; • QoL (n=4): SMD=0.24, 95% CI 0.05-0.43, small effect (3%), low I² (10%), moderate quality Long-term effects: • pain (n=3): SMD=-0.30, 95% CI -0.53 to -0.07, small effect (5%), low I² (29%), moderate quality; • physical function (n=3): SMD 0.41, 95% CI 0.17-0.64, small effect (6%), moderate I² (33%), high quality; • QoL (n=3): SMD=0.27, 95% CI 0.06-0.47, small effect (3%), low I² (12%), high quality. Effect size between delivery modes • A significant difference between mHealth (SMD=-0.55) and telephone (SMD=-0.04) supported exercise studies in pooled effect estimates for the outcome pain short-term ($\chi^2=7.2$ P=.007). • A substantial, but not significant difference for the outcome physical function short-term between mHealth (SMD=-0.66) and telephone (SMD=0.13) supported exercise studies in pooled effect estimates for outcome pain short-term ($\chi^2=3.4$ P=.06). • Possible reasons for the observed greater beneficial effect of mHealth interventions are (mHealth interventions are more complex information, educational material, training of self-management skills, and exercise compared with telephone interventions that typically included telephone coaching and exercises; difference in control group (supervised physiotherapy in the telephone studies), shorter treatment duration in the telephone studies).
Adherence to additional interventions	/
Clinical implications	Taking into account the balance between benefits and harm, the magnitude of effects, the importance of outcomes, the quality of evidence, the values and preferences of patients, and cost-effectiveness, the following recommendation is put forward:



	In patients with OAK, clinicians should consider using eHealth interventions to support home exercise and self-management (weak recommendation, moderate quality of evidence). This recommendation places a high weight on the positive balance of (small) benefits against possible adverse events and on patient's values and preferences. Less weight is placed on implementation barriers because of lack of training and financial incentives of health care providers
Authors recommendations	Future research should focus on participatory development of eHealth technology integrating evidence-based principles of exercise science and ways of increasing patient motivation and adherence.
Limitations and other comments	
Limitations quoted by the authors	• Patients with OAK have an identifiable specific structural pathology, whereas patients with chronic pain are heterogeneous in regards to pathology and contributing factors and possibly respond to a lesser extent to exercise therapy • Minimal clinical important changes from baseline are 20% for pain (VAS or NRS) and physical function and 12% for QoL. These are substantially higher than absolute changes found in this meta-analysis • 2 of the 6 studies used a waiting list control group and another 2 studies used an education control group; this choice of the control group may have inflated the effect size. • Lack of blinding of patients, therapists, and outcome assessors in all of the studies (with risk of effect overestimation). • Heterogeneity between study population (knee but also hip OA, different countries...) • Only articles published in English and German. • Rapid increase of studies on this topic.
Other limitations	No list of excluded studies
KCE Q.A.	Low risk of bias/High quality

1.5.24 Evidence table – Smith 2019

Smith 2019 ³⁸	
Objective	
Clearly mentioned	To highlight couple-focused methods that may serve as additional tools for therapists to use when working with patients with chronic pain.
Methods	
Design	SR of RCTs
Source of funding and competing interest	No info on funding No conflict of interest to declare
Search dates	Inception – January 2018
Searched databases	PubMed, Embase, and PsycInfo
Eligibility criteria	Population: Romantic couples in which 1 or more partners had a chronic pain condition Design: RCTs where couples randomized to ≥1 couple interventions for chronic pain, and another active intervention for chronic pain and/or a control arm
Exclusion criteria	Not specified
Q.A. used	None
(Statistical) analysis	Standardized coding
Description of the included studies	
Number of included studies	18 studies (22 publications)
Design of included study	18 RCTs In 13 studies, 1 couple intervention was tested, and in 5 studies, 2 couple interventions were tested (23 total couple interventions).
Covered years	1985-2016
Countries	No direct info: USA (n=9) , Australia (n=2), The Netherlands (n=2), Iran, Spain, UK, Finland, unknown.
Patient & disease characteristics	Pain condition: Chronic back pain 5 studies (28%), Osteoarthritis 4 (22%), Rheumatoid arthritis 3, Multiple chronic pain conditions 3, Cancer pain 2, Chronic headaches 1 (6)



	Types of couples: Either married or dating 10 studies (56%), Married 8 (44%) Sex of individual with pain: Either female or male 16 studies (89%), Female only 1, Not reported 1.
Intervention group	A variety of strategies were used for couple interventions, from reflexology to strategies from the CBT, ACT, and operant behavioral traditions. • Most couple interventions for pain (83%) provided psychoeducation to both partners about the physiological and psychological processes that contribute to pain. • Nearly half of the interventions (48%) taught couples relaxation or meditation skills to help manage pain and stress. • In 39% of the interventions, couples were taught the joint practice of cognitive and behavioral coping skills (e.g., joint distraction; self-control skills). • Teaching partners to avoid reinforcing pain behaviors occurred in 39% of the interventions (e.g., consider the amount of assistance the individual with pain needs and reinforce well behaviors)
Control group	Individual interventions or control arm
Follow-up duration	No info
Involved professionals	No info
Settings	No info
Results	
Summary of findings	• Strategies that derive from CBT, ACT, and operant behavioral approaches and are applied in a relational context may enhance couples' understanding of the biological and psychological processes underlying pain, boost their sense of efficacy in coping with pain, help with communication and effective problem solving, and provide a path to move forward together in the face of a chronic pain condition
Efficacy of additional intervention	• Across the studies that compared a couple intervention to an individual intervention or control arm on any outcome, 41% demonstrated a statistically significant improvement because of the couple intervention. • When comparing couple interventions with individual interventions or control arms on a pain intensity outcome, 3 (20%) found that the couple intervention brought about a statistically significantly greater reduction in pain intensity. • When comparing couple interventions with individual interventions or control arms on other pain-related outcomes (e.g., function, pain coping, and depression), 7 (44%) resulted in a statistically significantly greater reduction because of the couple intervention.
Authors recommendations	• To optimize results, therapists working with patients with chronic pain should consider additional training in couple therapy to develop expertise in a relational approach to treating pain.



	• Future research is needed to understand the benefit of each strategy, and whether there are moderating effects on the basis of couple characteristics (e.g. relationship duration, chronic pain conditions, pain duration, education level, and psychological health in both patients and their partners) and interventionist characteristics (e.g. areas of expertise).
Limitations and other comments	
Limitations quoted by the authors	• RCTs only, and therefore this is not a comprehensive review of all interventions for couples with chronic pain. • Given the lack of dismantling and mechanistic studies across psychological interventions, the relative effectiveness of each strategy used in the included couple interventions for pain cannot be examined. • Although research has shown that couples interventions are, in general, more efficacious in reducing pain than individual interventions, the specific strategies have not been directly compared.
Other limitations	• USA mainly • Old studies also included • Poor description of eligibility criteria • Poor description of the included studies • No quality assessment. of the included studies • No heterogeneity explanation • No list of excluded studies • Risk of publication bias not mentioned
KCE Q.A.	Critically low quality



1.5.25 Evidence table – Spink 2021

Spink_2021¹⁸	
Objective	
Clearly mentioned	To identify the commonly reported barriers and facilitators for the commencement and continuation of self-management* in adults with chronic musculoskeletal pain (CMP) from the patient perspective. *Self-management is defined as “the individual’s ability to manage the symptoms, treatment, physical and psychosocial consequences and life style changes inherent in living with a chronic condition” (Barlow et al., 2002, p178). It forms part of a biopsychosocial approach with the aim of changing beliefs that can perpetuate pain (Elbers et al., 2018).
Methods	
Design	Systematic review of qualitative studies
Source of funding and competing interest	No information on competing interest No information on funding
Search dates	2009 - May 2020
Searched databases	MEDLINE, AMED, PsychINFO, Cochrane Library, PubMed, CINAHL, PEDro, and Google Scholar. No additional search mentioned
Eligibility criteria	Population: Adults 18y and + Disease: Chronic musculoskeletal pain (CMP) defined as affecting the joints and bones of the body lasting longer than 3 months, including some of the most prevalent chronic pain conditions such as osteoarthritis (OA) and chronic low back pain (CLBP); If the chronic pain conditions were heterogeneous, the studies were included if types of pain were clearly stated, and the majority (>75 %) of participants had CMP. Outcomes: Perspectives of individuals (perceived barriers or facilitators). Interventions: - Both self-management strategies employed by the patients and self-management interventions that aided the patients to learn and apply those strategies. - Before or after interventions that teach self-management strategies, including mindfulness, breathing techniques, cognitive behavioural therapy, acceptance and commitment therapy, pacing, goal setting, and exercise, or participants that found self-management on their own. - Articles with at least one component or strategy of self-management.



	Design: Peer-reviewed qualitative or mixed-method studies. Language: English language
Exclusion criteria	Population: Paediatric patients Disease: Chronic pain conditions that were not from musculoskeletal origin such as cancerous, post-surgical, visceral pain Outcomes: Practitioner perspectives only Interventions: Interventions of pharmacological origin or focus. Design: - Opinion pieces, case reports, protocols, study proposals, reviews and quantitative studies - Grey literature, theses, dissertation, evaluation or implementation reports.
Q.A. used	CASP (Critical Appraisal Skills Programme) questionnaire specific to qualitative studies. Confidence in findings was assessed using CERQual (The Confidence in the Evidence from Review of Qualitative Research).
(Statistical) analysis	Thematic synthesis as recommended by the Cochrane Handbook for systematic reviews of interventions. Qualitative data was coded using a three-stage thematic synthesis process (coding, developing 'descriptive themes', generating analytical themes'.
Description of the included studies	
Number of included studies	27 studies
Design of included study	26 qualitative studies and 1 mixed-method RCT & qualitative group interviews. The majority of the included studies (n=18) used semi-structured interviews for data collection; other methods are focus groups, group interview, community based cross-sectional survey
Covered years	2009 - 2020
Countries	UK (n=9), the Netherlands (n=2), Ireland-Australia (n=1), Denmark (n=1), Norway (n=1), Sweden (n=2), Switzerland (n=1), Malta (n=1), Canada (n=4), USA (n=4), Australia (n=1)
Patient & disease characteristics	- In total, 487 participants contributed to the qualitative data. - Of the 27 studies, 22 had 100 % CMP conditions, 5 had more than 75 % related CMP. - Conditions included CLBP, OA, fibromyalgia, rheumatoid arthritis (RA) and general CMP.



Interventions	N.A. Interventions include cognitive behavioural therapy (CBT), acceptance and commitment therapy (ACT), mindfulness-based interventions, breathing techniques, pacing, goal setting, and exercise, or participants that found self-management on their own. both self-management strategies employed by the patients and self-management interventions that aided the patients to learn and apply those strategies
Involved professionals	No info
Settings	No restriction
Results	
Summary of findings	- Six major themes : 3 external influencing factors (HCPs role, supportive environment, accessibility and 3 internal influencing factors (physical factors, knowledge and understanding, and psychological factors). - Findings indicate a combination of acceptance, self-efficacy and pain education was most effective to shift belief patterns around pain, further supporting a similar convergence of themes found in the previous systematic review of Devan et al., 2018. - Important role of HCP. Practitioners could influence outcomes through support, providing clear education about CP, and offering self-management options relevant to the individual. - Patient knowledge was not exclusively gained from the HCP, it was also linked to the major theme of group support, - Pain, functional limitations and fear-avoidance combined in one major theme. - Goal setting can be considered an effective tool for the practitioner when developing management plans. Conclusion: findings from this review added further importance to the critical role of the HCP in supporting change. This requires a patient-centred approach involving an ongoing partnership with the individual through various stages of self-management. To further assist the self-management process, practitioners can improve self-efficacy through increasing patient knowledge of chronic pain, utilising goal setting and finding ways an individual can access ongoing support, either from the practitioner or through group programs.
Barriers	External influencing factors <u>HCPs role (poor HCP support and guidance (moderate confidence); poor patient communication and education (moderate confidence), biomedical preference (moderate confidence); non-patient centred advice and modification (low confidence))</u>: limited information provided (due to pharmacological or biomedical treatment preferences; some components of the practitioner-patient relationship impeded patient knowledge and empowerment through a lack of educating the patient about chronic pain, leading to a reliance of the patient on practitioner support); communication problems including conflicting advice or unclear instructions and dismissive comments about pain. Non-individualised approaches to self-management advice led to reduced relevance for the patient, limiting motivation.

- Supportive environment (group support (low confidence); lack of social support (moderate confidence)): for some, self-management involving a group was a deterrent, as listening to other experiences made them feel worse. Patients who reported poor support from family, friends and community were less likely to self-manage. Loss of employment and social isolation reduced motivation.
- Accessibility (location/timing (low confidence); financial constraints (moderate confidence)): Limited financial resources became a barrier for both activity cost and transport requirements, while inconvenient locations or class times impeded uptake.

Internal influencing factors

- Physical factors (pain, functional limitations and fear avoidance (high confidence); negative experience of SM (moderate confidence)): pain and flares ups leading to fear avoidance; functional limitations, especially for exercise, fatigue and low energy, previous negative experience with self-management.
- Knowledge and understanding (lack of understanding of CP, including SM options (moderate confidence); difficulties to see long term benefit or relevance of SM (low confidence)): lack of knowledge around CMP, including literacy barriers.
- Psychological factors (non acceptance of pain/change (high confidence); biomedical beliefs (high confidence); negative/impeding psychological influences (high confidence); low self-efficacy (moderate confidence)): inability to accept pain and lifestyle changes (with a search of external biomedical solutions and hope of an easy fix. Low self-efficacy led to an overreliance on external support. Negative impeding factors such as mood or mindset, psychological components including depression or anxiety and stress led to withdrawing from social engagements and reduced ability to concentrate. A loss of hope impeded motivation, while fear of stigma due to being functionally limited and not wanting to be dependent on others inhibited pacing or asking for help.

Enablers

External influencing factors

- HCPs role (SM HCP support and availability (high confidence); effective patient communication and education (high confidence); HCPs knowledgeable on CP (low confidence), patient-centred advice and tailored plans (moderate confidence)): by understanding and acknowledging pain and being accessible for ongoing encouragement or reassurance; by clear communication while educating the patient about chronic pain; by understanding of specific patient needs that promoted more relevant self-management approaches.
- Supportive environment (group support (high confidence); social support network (moderate confidence)): Many patients felt isolated, and the option of joining a group with similar conditions not only improved participation but gave a sense of belonging, understanding and enabled them to connect with others and learn from their experiences. Being part of the group also improved accountability to show up and continue. Other forms of support came from family and friends, further facilitating positive change.
- Accessibility (location/timing facilitators (low confidence)): Easy accessibility of healthcare services in terms of location of facilities, service availability, and affordability improved attendance at external self-management services. Self-management programs specifically tailored or relevant to pain conditions encouraged compliance and participation due to increased trust and safety



	Internal influencing factors • <u>Physical factors (positive experience of SM (high confidence))</u>: Wanting to reduce pain (motivating a search for solutions and management options); previous positive experience with self-management. • <u>Knowledge and understanding (patients' good understanding of CP and SM (high confidence); understanding long term benefits/relevance of SM (moderate confidence); goal setting (high confidence)</u>: increased understanding of CMP, such as mechanisms, exacerbating factors and psychosocial elements; goal setting as a strategy. • <u>Psychological factor (acceptance of pain/change (high confidence); positive enabling psychological factors (moderate confidence); self-efficacy (high confidence))</u>: Acceptance of pain and lifestyle changes associated with long term chronic pain management; self-efficacy enabled the sense of ability to overcome setbacks and take control of ongoing health management. Positive mindset. Correctly addressing psychological comorbidities such as depression positively influenced engagement of management activities and hope for the future.
Clinical implications	• Introducing patient relevant goal setting is suggested as it can act as a facilitator and supports increased self-efficacy. • Practitioners should endeavour to keep up to date with the latest pain research to better enable patient knowledge; More integrated practical training may be necessary in HCP education to enhance their skills. • Ongoing support is often required to explain pain throughout different stages of management, but practitioner access is not always available. In these cases, suitable online programs or external support groups could be considered • Correctly addressing psychological comorbidities positively influenced engagement with self-management
Authors recommendations	• Future research investigating practitioner barriers and level of chronic pain education can help provide further insight into gaps within healthcare for treating this population • Research looking at accessibility to self-management support across different socioeconomic communities and remote locations may highlight areas that have not been captured within this study.
Limitations and other comments	
Limitations quoted by the authors	• Heterogeneity in patients (around 3% of studies with non CMP); • Only 8 studies had a clear reflection of the researcher bias in relation to participants; • Only patients' perspective which may provide a limited view in understanding the dynamics of the practitioner-patient relationship from the practitioner perspective; • Only articles published in English.
Other limitations	No inclusion of grey literature
KCE Q.A.	Low risk of bias

1.5.26 Evidence table – Terpstra 2022

Terpstra 2022 ³⁹	
Objective	
Clearly mentioned	To give an overview of the efficacy of guided iCBT for chronic pain on psychological, physical, and impact on daily life outcomes, including factors that inform optimal delivery. - To investigate whether guided iCBT can be effective for chronic pain and for which psychological, physical, and impact on daily life outcomes it may be effective (such as distress, pain acceptance, pain intensity, fatigue, and quality of life). - To gain a better understanding on factors that inform an effective and a safe delivery of the treatment. Specifically, domains of interest are the involvement of the therapist, treatment duration, global improvement and participant satisfaction with the treatment, the extent of and reasons for treatment dropout, and adverse events and negative treatment effects in order to give indications for optimizing iCBT delivery. Patients suffering from chronic pain experience several barriers concerning traditional in-clinic CBT programs, such as reduced mobility due to physical complaints, limited transport possibilities, treatment costs, and associated stigma. Moreover, available therapists that provide CBT aimed at chronic pain are relatively limited. Internet-based CBT (iCBT) could largely bypass the barriers to face-to-face therapy, by offering an online self-management program that can be completed at home. In guided iCBT, generally a psychologist or coach provides the patient with written feedback on assignments following an intervention protocol and has a motivating role to increase adherence to the treatment.
Methods	
Design	SR of RCTs and M.A. followed PRISMA guidelines. PROSPERO (CRD42017079422)
Source of funding and competing interest	No specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.
Search dates	Inception – February 11, 2022
Searched databases	Cochrane, Emcare, Web of Science, PubMed, PsycInfo, and Embase + screening of references in eligible articles for relevant studies
Eligibility criteria	Population: Adults 18y and older



	Disease: Chronic pain (i.e., patients had pain lasting a minimum of 3 months and/or were diagnosed with a condition of which chronic pain was a primary feature, such as rheumatoid arthritis and fibromyalgia) Interventions: • Therapy mainly provided through the internet (i.e., patients spent >50 % of the total intervention time using an online intervention; no telephone calls or videoconferencing only, no onsite computerized therapy or digital assistants); • CBT-based therapy with a minimum of two forms of cognitive and/ or behavioral techniques (e.g., cognitive restructuring and activity scheduling); • therapist-guided, with a minimum of one segment of personalized patient contact to foster treatment adherence and/or provide feedback (either through messages or another mode of contact, excluding technical support with IT problems). Comparators: (see in the data synthesis), passive control conditions entailed waiting lists, standard care, or intervention programs that were not expected to substantively affect any therapeutic outcomes. Active control conditions were interventions in which participants attended a therapeutic program that was expected to affect therapeutic outcomes (e.g., face-to-face CBT or a different psychotherapy). Outcomes: variable on pain (e.g., pain coping, pain intensity) to include studies with a clear focus on pain as opposed to lifestyle change (see exclusion criteria); Design: RCTs or equivalence trial in which iCBT was compared with a control condition Language: English language Publication format: Access to full text
Exclusion criteria	Outcomes: Primary goal of the intervention was lifestyle change with a main focus on improving health behaviors (e.g., a focus on weight loss or exercise only) or the study was focused on monitoring symptoms, Disease: Pain not a primary feature of the conditions investigated in the study, Design: • <20 study subjects per study arm, • Not use original data.
Q.A. used	Six domains of the Cochrane Collaboration tool
(Statistical) analysis	• When possible (i.e., whenever an outcome contained at least two studies), between-group results were pooled to study the effect of iCBT as compared to a passive control condition on the one hand or an active control condition on the other hand, in three-arm studies, the study would be included in two analyses (iCBT versus a passive control condition and iCBT versus an active control condition). • When a study contained multiple iCBT treatment groups and a passive control condition, the iCBT treatment group with the most therapist contact was compared to the iCBT treatment with the least therapist contact in one analysis and the iCBT treatment group with the most therapist contact was compared to a passive control condition in another analysis.

- Pooling of between-group follow-up results was not possible and only post-intervention results were quantitatively summarized.
- Dropouts were calculated separately for all conditions (iCBT, passive, and active control). Dropouts were defined as participants that dropped out of the intervention or control condition and/or participants that did not return post-treatment measurements.
- The standardized mean difference (SMD), which calculates the intervention effect relative to the variability in the study, was used as a measure of effect size.
- To describe the heterogeneity in the included studies per outcome the I² index (I² of 25 % (low heterogeneity), 50 % (moderate heterogeneity), and 75 % (high heterogeneity));
- In this meta-analysis, retrospective power analyses were performed based on previously described recommendations. Only outcome measures that were included in a minimum of 10 studies were included in the meta-regression, based on previous recommendations
- To assess publication bias, the funnel plot technique was applied.

Description of the included studies

Number of included studies	33 studies
Design of included study	RCTs
Covered years	2003-2022
Countries	Sweden (10/33, 30 %), Australia (6/33, 18 %), The Netherlands (4/33, 12 %), Germany (4/33, 12 %), the United States of America (3/33, 9 %), Canada (2/33, 6 %), Norway (1/ 33, 3 %), Ireland (1/33, 3 %), the United Kingdom (1/33, 3 %), and Spain (1/33, 3 %).
Patient & disease characteristics	• 5133 participants (2340 in the intervention and 2793 in the active or passive control groups), with sample sizes ranging from 44 to 855 per study. • 79% were female; median age 50 years of age (pooled mean) and the age range varied between 18 and 93 years. • The conditions of patients encompassed mixed chronic pain syndromes (16/33, 48 %), chronic back pain (5/33, 15 %), fibromyalgia (4/33, 12 %), (rheumatoid) arthritis (2/33, 6 %), recurrent/chronic headache (2/33, 6 %), irritable bowel syndrome (1/33, 3 %), chronic knee pain (1/33, 3 %), hip osteoarthritis (1/33, 3 %), and chronic musculoskeletal pain (1/33, 3 %). Most studies (25/33, 76 %) had pain duration as an inclusion criterion, ranging from a minimum pain duration of 3 months to a minimum of 24 months.
Interventions	• iCBT, ACT, SM or Self-help based on CBT, pain management or pain coping skills training, or exposure and mindfulness-based therapy.



	• Mostly weekly modules with (homework) assignments and most often used multiple digital modalities within the same treatment (e.g., written text, video, and downloadable audio files). • Average duration of 9 weeks (range 4 to 26 weeks) • Variety of CBT-based techniques (psychoeducation in all studies, relapse prevention (25/33), self-monitoring (22/33), relaxation (22/33), goal setting (20/33), activity planning (19/33), cognitive restructuring (19/33), and problem solving (18/33). • Mode of contact was mainly e-mail or written feedback (55 %), a mix of different main contact modes (e.g., written feedback and telephone contact) (24 %), telephone calls; others were: videoconference calls, bulletin board, face-to-face contact, standardized SMS text messages (sometimes optional) to motivate participants.
Comparison	• Passive control condition (21 studies): waiting list, care-as-usual, or an educational intervention • Active control condition (7 studies): iCBT or online pain management without added telephone contact, face-to-face CBT group intervention, CBT (pain management) workbook, hybrid emotion-focused treatment, multimodal pain rehabilitation or a moderated online discussion forum with general pain-related topics.
Follow-up duration	1 – 24 months after treatment (2 studies without F.U.)
Involved professionals	• Therapist guidance was most often provided by psychologists (27/33, 82 %), who had typically received a form of CBT training as professional qualification. Guidance was occasionally also provided by physiotherapists (9 %), a combination of a pain physiotherapist and a pain psychologist (3 %), a combination of a nurse and a therapist (3 %), and peer moderators (3 %). In 50 % of studies including therapist guidance by someone other than a psychologist, the included therapists had received CBT training. • Eleven studies (33 %) reported the total therapist time for the entire duration of the treatment, which ranged from 41 to 174 min per participant per treatment.
Settings	Home
Results	
Summary	Guided iCBT is an effective and potentially safe treatment for chronic pain. Future research should more consistently report on iCBT safety and detail the effectiveness of individual treatment components to optimize iCBT in clinical practice. Dropout was related to time, health, technical issues, and lack of computer skills.
Solution efficacy	iCBT was more effective than passive control conditions for psychological (ES = 0.34–0.47), physical (ES = 0.26–0.29), and impact on daily life outcomes (ES = 0.38–0.41). iCBT was more effective than active control conditions for distress (ES = 0.40), pain acceptance (ES = 0.15), and pain interference after outlier removal (ES = 0.30).

	Longer treatments (compared to passive control) were associated with larger effects for anxiety and quality of life than shorter treatments. However, in the current review, two studies with an extra-long treatment duration (i.e., 24 and 26.07 weeks), that were removed in sensitivity analyses, appeared to consistently decrease and often reverse the regression coefficient from positive to negative. This could potentially imply that studies with a very long duration are associated with decreased effect sizes for every extra week of treatment, compared to shorter treatments. Mode of therapist contact (synchronous, asynchronous or a mix of both) was not related to differences in effect sizes in most outcomes. However, studies with mixed and synchronous contact modes had higher effects on pain self-efficacy than studies with asynchronous contact modes. Treatment satisfaction was high and adverse events were minor.
<i>Adherence to additional interventions</i>	Twenty studies examined reasons for dropouts to a varying extent and reported different reasons for dropout. The most common reasons were lack of time, health issues/hospitalization, technical difficulties, and lack of computer skills. The iCBT and active control conditions had similar dropout rates (both 23 %), whereas passive control conditions had slightly lower dropout rates (16 %).
<i>Clinical implications</i>	Technical difficulties or lack of computer skills were often mentioned as dropout reasons. A more extensive training in using the internet program for patients and offering proactive technical support may reduce attrition.
<i>Authors recommendations</i>	• More studies including between-group long-term follow-up are needed. • Studies on cost-effectiveness are important to assess the feasibility of iCBT implementation in practice and should be included in future research • Future research should research age, sex, education level... subgroups in order to make specific recommendations for clinical application of (guided) iCBTs. • If the goal is to progressively optimize interventions, the identification of active ingredients within an intervention should be a primary consideration in the design of an experiment. • For meta-analytic purposes and to formulate recommendations for clinical practice, intervention components, therapist guidance, and factors related to participant experience and the safety of the treatment (e.g., IMMPACT factors of adverse events, improvement and treatment satisfaction, and dropout) should be described more consistently and in more detail in future research.
<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Heterogeneity in content of the iCBT interventions, types of active control conditions, and measurement scales used which may complicate the interpretation of pooled effects. • Publication bias found for the catastrophizing outcome, when iCBT was compared to passive control conditions and Publication bias could not be precluded for several outcomes in studies that compared iCBT to an active control condition, since it could only be assessed for one outcome, due to a lack of studies.



	• Guided iCBT was often performed in patients with different chronic pain conditions merged together in the included studies, which impeded subgroup analyses of the effects of iCBT per chronic pain condition in this meta-analysis. • Pooling of between-group follow-up results was not possible, due to a lack of uniform reporting of these results across studies (follow-up periods differed greatly, some studies aggregated results from treatment and control groups in follow-up, and other studies only reported a follow-up for the treatment group). • All studies but two included an unclear risk of bias and/or a high risk of bias of some form, which may affect the interpretation and generalization of result.
<i>Other limitations</i>	• Only articles published in English. • No duplicate data extraction • No reporting of sources of funding for the studies included in the review
<i>KCE Q.A.</i>	Moderate quality

1.5.27 Evidence table – Thompson 2022

Thompson 2022²⁰	
Objective	
Clearly mentioned	To develop new conceptual understanding of patients' needs when accessing physiotherapy for pain management. The concepts were viewed through an educational lens to create a patient needs-based model to inform physiotherapy training To question the appropriateness of pain education in pre-registration physiotherapy training programmes
Methods	
Design	Qualitative systematic review Noblit and Hare's seven-stage meta-ethnography
Source of funding and competing interest	This work was supported by a Health Education England (HEE) PhD studentship. The authors declare no conflict of interest.
Search dates	Inception – January 2018
Searched databases	MEDLINE, CINAHL Complete, ERIC, PsycInfo and AMED + Hand searching of key papers from the Reference lists
Eligibility criteria	Population: Adults Disease: Musculoskeletal pain Outcomes: Patient experience of physiotherapy Design: Qualitative methods Language: Abstract and full text in English
Exclusion criteria	Non-musculoskeletal pain (e.g. cancer, cardiac and postsurgical pain)
Q.A. used	CASP tool
(Statistical) analysis	Thematic synthesis + two focus groups with patients who had accessed physiotherapy for pain management, to gather their views and steer the direction of the portfolio of pain education research.
Description of the included studies	
Number of included studies	18 studies



Design of included study	Qualitative studies: interviews (n=13 studies), focus groups (n=4 studies) and by open text comments on survey (n=1 study).
Covered years	2000 - 2016
Countries	No direct info: UK (n=10), Sweden (n=5), Spain, France, New Zealand
Patient & disease characteristics	More than 300 participants Predominantly chronic pain (n=11 studies), acute pain (n=1 studies) or mixed samples (n=6 studies).
Interventions	Physiotherapy (patient education, (home) exercise, rehabilitation programme,
Involved professionals	Physiotherapists
Settings	Outpatients (n=13), group physiotherapy (n=3), multimodal/ multiprofessional pain management (n=3) and residential multidisciplinary pain management (n=1).
Results	
Summary of findings	A Patient Needs-Based Framework for Pain Education in Preregistration Physiotherapy Training is proposed. This framework emphasizes a person-centred, needs-driven approach to pain education, integrating patient experiences and perspectives into the core of physiotherapy training. It is structured around two interrelated domains: 1. Patient-Centered Educational Foundations At the heart of this model lies the patient's lived experience of pain, which informs six key educational themes: Meaning of Pain, Individuality of Pain Experience, Complexity of Pain. Contextual Influences, Accessible and Realistic Management and Importance of Hope 2. Training Objectives for Physiotherapy Students : To effectively respond to patient needs, physiotherapy students should develop the following competencies: • Confidence in Pain Dialogue: Ability to engage in meaningful conversations about pain with patients, facilitating understanding and empathy. • Educational and Mentorship Skills: Competence in teaching, coaching, and mentoring individuals in pain management strategies. • Promotion of Hope and Self-Efficacy: Capacity to instil a sense of agency and belief in recovery among patients, enhancing therapeutic outcomes.
Needs	Six distinct categories that represent patients' needs when in pain : 1. People in pain are individuals : participants want to be listened to, believed and enabled to actively participate in a two-way consultation;

2. What does pain mean? information is critical to help people understand and navigate the complex nature and meaning of pain. However, 'one-size' does not fit all—finding acceptable explanations is dependent on individuals' beliefs and previous experiences.

- Explaining and teaching : active process
- Ideas about the cause arthritis (risk of resigned attitude)
- Information sharing (explain what info can confidently provided)

3. Pain is complex—there is a lot to learn: patients' needs in learning to understand, appreciate and navigate the mind-body link when experiencing pain (impact of thoughts and emotions on pain, activity levels and behaviour; Approaches that facilitate validation and understanding of the mind–body relationship)

- Bringing my body back into balance: link between the mind and body
- Effects of LBP on the individual: lack of confidence, no control over symptoms, possibility of permanent damage to the spine...
- Awareness (of physical and psychological limitations) and integration.

4. Pain management needs to be accessible and realistic: Challenges adhering to physiotherapy included managing time, relationships and work alongside physiotherapy treatments. Healthcare systems were not always described as fit for purpose for example, 'one-size' approaches such as exercise classes did not always feel individualized to participants' needs.

- Organisation: Access to physiotherapy and the amount received; also access in the future, wanting quick and direct access in the event of a flareup.
- The structure that shaped access to and time with the therapist: appreciated quick and local access; critical of protracted referral system
- Reacting but not acting: dissatisfaction with the content and format of the programme not expressed since it was felt as predetermined and could not be influenced.
- Self-managing, want future access.

5. Hope is really important—the power of health professionals: The patient-therapist relationship features within this category with reciprocal findings that physiotherapists can influence beliefs and behaviours. Physiotherapists' role in coaching and motivating others, and fostering self-efficacy in people experiencing pain, evolved as an important concept from this category.

- Hopes for the future: Restoration of hope hinged on three narratives; (1) deconstructing fear of specific movements, (2) constructing an acceptable explanatory model of pain and (3) reconstructing an acceptable self-identity
- Expectations from treatment: need for individually specific exercises and advice; supervision of exercise programmes; F.U. support and reassurance from the HCP.
- Where do beliefs come from? Health professionals exerted substantial influence over how participants thought about or managed their injury and the expectation of time taken to recover.



	6. Context matters (physical, social environments and relationships): Healthcare environments that promoted feelings of relaxation, a sense of belonging, and a safe environment to express thoughts and emotions were reported to be encouraging and motivating; This category emphasizes the physiotherapists' role in considering individuals' contexts, creating supportive and encouraging environments, and in supporting people to recognise the impact of personal environments, within the boundary of their professional role. • Encouraging environment: programme where patients needs, thoughts and opinions are respected • Perceptions of physical environment: Patients report having effective resources from the physical environment to overcome perceived barriers. These resources include using entertainment, such as television at home, and attendance at recreational centres. Some patients even feel that attending recreational centres is fundamental for adherence in post-treatment periods. • Sharing experiences of living with fibromyalgia: Three patterns of participation were identified: 'reciprocity in sharing experiences', 'distancing from others' experiences' and 'remaining outside'. • Beliefs: fitting it all in. Competing priorities impacted on how individuals managed their injury. Family commitments made it difficult to prioritise time to concentrate on their recovery or even attend appointments for some participants.
Enablers	Participants need an environment that enables individual perspectives and experiences to be discussed and explored; participants frequently reported the importance of a professional yet personal manner, including friendliness and empathy. • Individual care (listening, understanding and getting to know the patient) • Consultative process • Decision making (by the physiotherapist) • To be invited to participate (in the assessment and treatment)
Clinical implications	/
Authors recommendations	The categories encapsulate the importance of interpersonal skills, the power that health professionals hold when viewed as experts, and that people experiencing pain are individuals irrespective of the duration of pain: 1. Train physiotherapists to encourage and facilitate conversation about pain. Authors advocate to, in addition to the development of active listening and communication skills, more focus is placed on narrative, dialogue and language in preregistration physiotherapy training. Learning to facilitate conversation about pain allows physiotherapists to understand what explanatory model patients are using to underpin the meaning of their pain; to interpret narrative that patients use and to use a clear, coherent, sensitive narrative when responding that is, patient–practitioner narratives need to be aligned. 2. Train physiotherapists to be competent to teach or coach people who are experiencing pain.

People in pain have varied needs and need differing levels of information. Physiotherapists require a range of skills; to be competent to teach, educate, coach and mentor. However, there is little information to inform how to develop physiotherapists to be competent to teach or coach people who are experiencing pain as part of pain education in preregistration physiotherapy training. This area of physiotherapy training requires more research.

3. Train physiotherapists to foster hope and self-efficacy in people who are experiencing pain.

Hope is an important concept and physiotherapists hold great power as health professionals, especially when viewed as experts. There is little research that has explored the concept of hope within pain management for physiotherapists and there is little evidence to demonstrate how these concepts can be incorporated in pre-registration training.

Limitations and other comments

Limitations quoted by the authors

- Beyond surface description, meta-ethnography allows conceptual understanding of the phenomena under investigation. This may be viewed as a limitation, as participants were not directly asked for their views on education.
- This meta-ethnography explored a broad range of patient experiences, to reflect routine physiotherapy clinical practice. This broad inclusion criteria may limit depth of analysis for particular participant groups.

Other limitations

- Only articles published in English.
- Poor description of the included studies
- Large heterogeneity between topics of studies.
- Quality assessment of the studies not taken into account in the analysis

KCE Q.A.

Moderate risk of bias



1.5.28 Evidence table – Thompson 2016

Thompson_2016¹⁹ Adherence	
Objective	
Clearly mentioned	To understand how pain-related cognitions predict and influence treatment retention and adherence* during and after a multidisciplinary rehabilitation program for patients with chronic pain. *The World Health Organisation (WHO) defines adherence as ‘the extent to which a person’s behaviour (i.e., taking medication, following a diet or exercise plan, and/or executing lifestyle change), corresponds with recommendations from a health care professional (HCP)’
Methods	
Design	SR (MA not possible due to heterogeneity)
Source of funding and competing interest	No info
Search dates	No search date
Searched databases	Medline, CINAHL, PsycInfo, Academic Search Complete, and Scopus + searching in bibliographies of all relevant articles
Eligibility criteria	Population: Adults 18+ y Disease: Chronic pain >3 mo, Outcomes: Studies providing information on the association of pain-related beliefs with treatment adherence to multidisciplinary treatment Design: Peer-reviewed studies Language: English language
Exclusion criteria	Outcomes: • Studies without adherence data • Studies that did not directly compare pain-related beliefs and treatment adherence outcomes. • Studies that focused on adherence to a medical approach or pharmacological treatment. • Studies that examined the effect of pain-related beliefs on chronic pain treatment outcomes (e.g., pain severity, functional outcomes)

Q.A. used	None
(Statistical) analysis	No info
Description of the included studies	
Number of included studies	10 studies
Design of included study	Observational (self-report from patients for 7 studies; combination of self-reported from patients and HCPs for 3)
Covered years	2000 - 2014
Countries	UK (n=2), Canada (n=2), USA (n=2), Australia (n=1), Switzerland (n=1), Sweden (n=1) and Germany (n=1).
Patient & disease characteristics	No direct info: CLBP, MSK pain, Fibromyalgia, widespread pain.
Interventions	5 studies assessed adherence to the recommendations provided among multidisciplinary treatment programs, including a combination of psychology, physiotherapy, occupational therapy, and hydrotherapy treatment components; 1 study assessed adherence to psychological recommendations and the remaining 4 studies focused on adherence to exercise regimens. Three studies assessed adherence to specific and standardized treatment recommendations for all participants, 4 tailored the prescribed treatment recommendations (i.e. timing and duration) to the individual and their level of impairment and the last 3 did not specify recommendations.
Involved professionals	No info
Settings	No info
Results	
Summary of findings	The findings suggest that treatment adherence is determined by a combination of pain-related beliefs either supporting or inhibiting chronic pain patients' ability to adhere to treatment recommendations over time. In the studies reviewed, self-efficacy appears to be the most commonly researched predictor of treatment adherence, its effects also influencing other pain-related beliefs.
Barriers	Perceived barriers relate to individual's opinions of the tangible and psychological costs associated with treatment adherence: significant negative association between perceived barriers and adherence to treatment recommendations in 2/2 studies.
Enablers	Perceived benefits relate to individual's beliefs in the efficacy of treatment adherence to reduce risk or seriousness of chronic pain symptoms: Perceived benefits were examined in three studies, with two of those studies showing a significant positive association, and one study showing no significant relationship.
Adherence	1. Self-efficacy belief: positive significant relationship with treatment adherence in 5/7 studies ; no relation in 2/7.



	2. Perceived disability: moderate to strong negative associations between perceived disability and treatment adherence in 2/3 studies; no relation in 1/3. 3. Catastrophizing: strong negative associations between catastrophizing scores and treatment adherence in 2/3 studies; no relation in 1/3. 4. Control belief: o relationship between control belief scores and treatment adherence in 3/3 studies. 5. Fear-avoidance beliefs: negative correlation between fear-avoidance beliefs and treatment adherence in 1/2 studies; no significant association in the other. 6. Other belief (see perceived barriers and perceived benefit above)
<i>Clinical implication</i>	The empirical findings from this review highlight the importance of addressing pain-related beliefs prior to or during intervention, as improvement of unhelpful beliefs may increase patients' ability to engage in treatment and reduce disability outcomes. In the studies reviewed, self-efficacy regarding one's ability to manage pain appears to be the most consistently measured pain-related belief in relation to treatment adherence, and its effects may also influence other pain-related beliefs. Therefore, programs that specifically incorporate self-efficacy enhancing components such as self-management education are likely to yield important and beneficial effects that can be valuable in the management of chronic pain
<i>Authors recommendations</i>	It is recommended that research focus on establishing valid and reliable methodological guidelines, such as: (1) consistent research designs and study instruments, (2) use of standardised and specific (as opposed to general) adherence measures, (3) larger sample sizes (increase the likelihood of detecting significant associations between variables), and (4) improved control of potentially confounding variables (e.g., miscommunication between patient and provider, deficits in the knowledge or skills of the patient, as well as age, gender, and cultural factors)
<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Only articles published in English. • Social desirability response bias in self-report measures • No similar time point of the measure; individual differences; various measures to adherence
<i>Other limitations</i>	• Data extraction by one researcher only. • No quality assessment of the included primary studies • No description of the methods used for the synthesis
<i>KCE Q.A.</i>	Moderate risk of bias

1.5.29 Evidence table – Tousignant-Laflamme 2022²¹

Tousignant-Laflamme (2022)	
Objective	
Clearly mentioned	To identify key elements that should be included in a self-management (SM) program in order to facilitate a sustainable return to work for patients suffering from low back pain (LBP). (RQ: what are the relevant content elements that should be included in a SM program designed to help employees who have been on long-term sick leave for an episode of persistent LBP, stay at work?)
Methods	
Design	Mapping review
Source of funding and competing interest	This work was supported by a research grant from the Quebec Rehabilitation Research Network (REPAR) and the Institut de recherche Robert-Sauvé en santé et en sécurité au travail (IRSST). Guillaume Leonard is supported by FRQS (Quebec). No competing interests
Search dates	From 1995 to 18 th December 2019
Searched databases	CINAHL, PubMed, Scopus, Cochrane Library
Eligibility criteria	Population: Workers suffering from persistent pain and/or disabilities Disease: Chronic non-specific LBP defined as painful musculoskeletal disorder defined as pain experienced during movement, primarily in the lumbar region but sometimes referring to the proximal region of the lower limb, and present for at least three months Intervention: SM defined the patient's ability to manage their symptoms, treatment, and the physical, psychological and social consequences of their health condition, as well as the changes in lifestyle habits required. Outcomes: Effects/efficacy of a SM program Language: English or French
Exclusion criteria	Population: Patients with specific LBP related to a systemic condition (infection, cancer, rheumatoid arthritis) or a fracture Outcomes: Prevalence of LBP or factors influencing the incidence of the disorder.
Q.A. used	A qualitative study assessment grid providing a score based on the problem investigated, methodology, underlying theoretical framework and main results. The score can range from 0 to 20, where a high score represents a study with a



	low risk of bias (scores of 12–13=high risk of bias; 14–17=moderate risk; 18–20=low risk). The Cochrane Risk of Bias Tool for assessing risk of bias for RCT
(Statistical) analysis	NA
Description of the included studies	
Number of included studies	3
Design of included study	1 randomised controlled trial, 2 qualitative studies
Covered years	2005-2010 (qualitative studies); 2015 (RCT)
Countries	USA (RCT) not mentioned for qualitative studies
Patient & disease characteristics	RCT: 597 workers from 4 large US-based companies Qualitative studies: 28 adults and 38 participants in focus groups from a variety of workplace settings (office, manual work, health and social services, self-employed workers).
Interventions	Intervention group Study must describe a SM program that: • was based on an underlying theoretical model serving as a conceptual framework for its development; • fostered the development of essential skills such as the ability to solve problems, make decisions, use resources, define aims, plan actions to be taken and personalise the intervention; • was capable of being adapted/personalised to meet the program user's needs; • used education as the main component to bridge the gap between the program content and the patients, thus enabling patients to acquire new knowledge that fosters their SM skills Fitback intervention: biopsychosocial approach including monitoring of symptoms, SM activities/strategies (rest, relaxation, mindfulness, aerobic exercises, stretching and strengthening exercises), patient education (short videos and articles on pain management principles, strategies and cognitive behavioural strategies) Control (for the RCT) No intervention
Involved professionals	
Settings	Workplace

Results

Summary of findings	• The two most valuable components of an SM program are educational materials and strategies specifically tailored to the work context • Workers trying to stay at work are greatly influenced by organisational factors in the workplace, emotional support and their own self-efficacy in performing a variety of tasks. • Five work related variables associated with an increased level of LBP disability were heavy physical demands, inability to modify the work, job stress, poor social support, lack of satisfaction and fear of re-injury. • Communication is an important aspect to improve interpersonal relationships in the work setting and foster a sustainable return to work. Communication issues can be enflamed by financial constraints and imperatives. • Strategies were mainly based on individual factors and not on occupational factors.
Barriers	• Expectations of the possible outcomes following the return to work, such as the risk of re-injury, • Interference in work activities caused by increased or aggravated pain and/or disabilities related to their LBP • Poor self-perceptions (difficulties staying in sitting and/or standing positions for long periods of time, lifting heavy loads at work, meeting job performance criteria, asking employer and/or co-workers for help and work accommodations, managing pain in the workplace using SM strategies) characterised by doubts about their own work abilities and causing stress and anxiety, • Interpersonal challenges (lack of understanding among those around them (co-workers and employer), and co-workers' poor perception of their performance), • Inflexibility of the work demands regarding workload and work schedule.
Enablers	Methods that supported the development of SM skills (web-based program): • tools and functionalities allowing users to report their pain and daily activities in order to assess the efficacy of the SM strategies used; • educational material in the form of short videos on pain management, designed to improve users' knowledge and understanding of strategies for self-managing their symptoms; • cognitive behavioural strategies, such as controlling the fear of pain, aimed at modifying false beliefs and promoting adoption of healthy behaviours relevant to managing their chronic condition; • the integration of practical SM strategies including relaxation, mindfulness, back-specific and general exercises targeting pain-related symptoms and improving users' physical fitness; and • content adapted to the users' type of work and severity of their condition by means of a user profile created through self-administered questionnaires
Clinical implications	



Authors recommendations	SM programs should include content elements related to: • active and practical pain management strategies that patients can use to reduce their pain symptoms quickly and easily; • the interference of pain in work activities; • workers' perception of their self-efficacy regarding work-related tasks, which in turn influences their cognitions and behaviours (perceived self-efficacy appears to be a vital concept for fostering SM skills and the ability to stay at work) [35,36]; • cognitive behavioural strategies aimed at modifying negative thoughts or emotions and promoting the adoption of healthy behaviours; • development of the ability to communicate their pain to people around them (i.e. being able to collaborate with their employer to find job leeway); • SM program should therefore help participants face the apprehension of re-injury.
Limitations and other comments	
Limitations quoted by the authors	Small number of studies included
Other limitations	• Articles published in English and French only. • No detailed description of the included studies. • No robustness analysis. • Risk of bias from primary studies not taken into account in the analysis.
KCE Q.A.	Moderate risk of bias

1.5.30 Evidence table – Toye 2017

Toye 2017 ²²	
Objective	
Clearly mentioned	To explore healthcare professionals' experience of treating chronic non-malignant pain (see also BOOK)
Methods	
Design	Qualitative evidence synthesis using meta-ethnography
Source of funding and competing interest	Funded by the National Institute for Health Research Health Services and Delivery Research Programme None Competing interest declared
Search dates	Inception – November 2016
Searched databases	MEDLINE, Embase, CINAHL, PsycInfo and Amed.
Eligibility criteria	Population: patients with pain Disease: chronic non-malignant pain (= pain persisting beyond the 3 months expected time of healing) Interventions: all biomedical and biopsychosocial interventions to care patients with chronic pain Outcomes: experience of all clinical healthcare staff involved in the care of patients with chronic pain
Exclusion criteria	Disease: Acute pain, head pain and arthritic conditions; Outcome: Patient experience
Q.A.	3 methods for primary studies : (1) Critical Appraisal Skills Programme (CASP) questions for qualitative research; (2) constructs from a qualitative study in a previous meta-ethnography; (3) global appraisal of whether the study was: 'key' (conceptually rich), 'satisfactory', 'irrelevant' or 'fatally flawed'. GRADE-CERQual framework for the body of evidence
(Statistical) analysis	Analysis in large qualitative evidence synthesis involves a process of: identifying concepts from qualitative studies, abstracting these concepts into conceptual categories, further abstracting categories into themes and finally developing a line of argument that makes sense of the themes.
Description of the included studies	
Number of included studies	77 studies reporting the experiences of over 1551 international healthcare professionals including doctors, nurses and other health professionals.



Design of included study	Qualitative studies (data collection by semi-structured interviews, interviews, focus group, ethnography).
Covered years	1992 – 2015
Countries	USA (20 studies), UK (n=18), Canada (n=10), Sweden (n=10), the Netherlands (n=4), Norway (n=4), Australia (n=4), France (n=4), Germany (n=1), Hong Kong (n=1), Ireland (n=1), Israel (n=1), Italy (n=1) and Spain (n=1)
Patient & disease characteristics	N.A.
Interventions	N.A.
Involved professionals	1544 professions: 713 physicians (279 GP, 61 emergency physicians, 50 primary care physicians, 22 rheumatologists, 21 family practitioners, 13 rehabilitation physicians, 8 anaesthetists, 4 physician assistants, 2 psychiatrists, 2 neurologists, 1 immunologist, 1 physicians specialized in nervous and mental disease, 249 physicians without specification of the discipline), 508 nurses (122 (certified) nursing assistant, 100 registered nurses, 95 nurses, 71 registered practice nurses, 35 auxiliary nurses, 26 licenced practical nurses, 20 district nurses, 13 healthcare aides, 9 advanced practice nurses, 8 allied health professionals, 4 enrolled nurses, 3 consultant nurses, 2 pain nurses) 118 physiotherapists, 35 chiropractors, 23 physical therapists, 35 occupational therapists/kinesiology/physiotherapists, 5 osteopaths, 2 rehabilitation therapists, 13 psychologists, 1 marriage and family therapist, 6 pharmacists, 37 mixed HCPs (unknown number by professions) 4 facility managers, 8 social workers, 20 unlicenced care practitioners, 3 directors/assistants, 13 administrators The themes are drawn from a wide range of HCPs, including those specialised in chronic pain management who may be more likely to adopt a biopsychosocial approach. Not all of the studies reported the number of participants from specific professional groups, which means that it was not possible to give the exact number of participants from each profession.
Settings	No restriction
Results	
Summary of findings	A short film presenting the key themes is available on YouTube (https://www.youtube.com/watch?v=477yTJPg10o) and a report giving further details of analytical decisions is being published by the NIHR Journals library https://www.journalslibrary.nihr.ac.uk/programmes/hsdr/1419807/#/. Tensions between concepts are conceptualized in a mixing console as underpinning the craft of chronic non-malignant pain management. The poles are neither inherently good nor bad and there is no “correct” balance. Different HCPs may adjust the balance differently for each individual and context. The craft includes 5 scales. The first one is a continuum between embodied psychosocial

	model and dualistic biomedical model. The second scale ranges between distance / anonymity and proximity / familiarity. The third scale fluctuates between empower negative discuss and expertise enforce instruct. The fourth scale starts from biomedical utility and ends to relationship concession. The last scale ranges from healthcare advocate to patient advocate. Two adjustment buttons are also considered professional failure (fell have failed because I can't fix) and personal loss (feel bombarded by despair).
Barriers	A sceptical cultural lens (lack of trust regarding patients' reports of pain). Navigating juxtaposed models of medicine: dualistic biopsychosocial model, whereby once something biomedical has been excluded, they made an abrupt shift towards psychosocial explanations; Time restrictions could encourage HCPs to focus on the physical body! Navigating the geography between patient and clinician (metaphor of geography is used to portray a sense that the terrain could prove treacherous);, personal challenge that accompanied a need to balance professional expertise and patient empowerment. The challenge of dual advocacy (simultaneously an advocate of the patient and an advocate of the healthcare system), HCPs not working on the same side as each other or the patient; difficulties to access specialist pain services. Personal costs (professional failure for not being able to fix; recognising human losses incurring a deep sense of personal loss). The craft of pain management: At times, HCPs felt under skilled in chronic pain management: Treatment has to be tailored to patient's needs and prescriptive guidelines promoting 'one size fits all' is not acceptable.
Enablers	Navigating juxtaposed models of medicine: bridging strategies to keep the patient on board; importance of approaching psychological explanations in a very careful way (to keep patients on board); sense that pain is multidimensional and that the 'physician gaze' is multifocal. Navigating the geography between patient and clinician: concessions not evidence-based to maintain relationships; discussion rather than enforcement; empowering patients The challenge of dual advocacy: benefits of reciprocity and collaboration, being confident in the capabilities of colleagues and reciprocal respect. Personal costs: detached empathy The craft of pain management: Personal experience or maturity, amount of experience treating patients with chronic pain and learning from colleagues underpinned craft knowledge.
Clinical implications	The findings have clinical and educational implications (e.g. navigating relationships requires skills to finely balance the tensions inherent in the model while managing potential personal and professional losses). How can we enable HCPs to manage the tensions that underpin the experience of providing health care to people with chronic non-malignant pain? How do we recognise and support the complexity of skills and emotional cost of providing health care to people with chronic non-malignant pain? The findings highlight the benefits of reciprocity, mutuality and collaboration between HCPs and the benefits of being able to break down or cross professional boundaries and hierarchies. The findings highlight a need to consider the emotional costs to HCPs of treating patients with chronic pain.



Authors recommendations	Future research to explore HCPs' experiences with chronic non-malignant pain in diverse ethnic groups, gender-specific contexts and in older people living in the community would make a valuable contribution to the evidence base on people's experiences of living with chronic pain. Future research to explore the application and usefulness of the conceptual model in education and practice would add value to this research. Future research to explore the application and usefulness of the film output in education and practice would add value to this research. Future research to explore the value added to QES by quality appraisal and the relevance of GRADE-CERQual for evaluating confidence in meta-ethnography findings would make a useful contribution to QES methodology. Further research on how QES can be used to inform commissioning, policy and practice would contribute to knowledge on effective dissemination of qualitative research.
Limitations and other comments	
Limitations quoted by the authors	• HCPs included in this review did not discuss their own personal life context that intuitively might contribute to a sense of loss. This might indicate that there were topics that were not explored in the initial interview studies and further research might explore the impact of this on HCPs' resilience to challenges of treating people with chronic pain and other conditions • No agreed way to determine confidence in QES findings (but majority of studies were appraised as 'satisfactory'). • Incorporate a large number of studies face criticisms for undertaking reviews that are 'too small' (and thus anecdotal) or 'too large' (not in-depth).
Other limitations	• No hand searching, grey literature • Huge heterogeneity of HCPs. • Not only biopsychosocial approaches considered
KCE Q.A.	Low risk of bias

1.5.31 Evidence table – Van Dijk 2022

Van Dijk 2022 ²³	
Objective	
Clearly mentioned	To investigate and map the barriers and facilitators that physiotherapists working in primary care reportedly face when treating patients with chronic musculoskeletal pain from a biopsychosocial perspective.
Methods	
Design	Scoping review (due to the broad research question and the expected variable evidence base). Protocol uploaded to the Open Science Framework on November 16, 2021.
Source of funding and competing interest	Funded by a public grant of Regieorgaan SIA, which is part of the Dutch Scientific Organization (NWO) named: RAAK Publiek (Regional action and attention for knowledge-circulation) grant number RAAK PUB06.014 No conflict of interest reported
Search dates	Inception – July 12, 2022
Searched databases	Peer reviewed journals : PubMed, Embase, CINAHL and ERIC Grey literature: Google Scholar, DART Europe, physiotherapy guidelines Additional reference search : reference lists of the included studies.
Eligibility criteria	Intervention: BPS model Outcomes: Reported challenges, barriers and facilitators from a physiotherapist perspective Design: Qualitative and quantitative studies, without control groups and/or with active or passive control groups Language: English, French, German and Dutch full-text articles
Exclusion criteria	Design: meta-analyses, (systematic) reviews, conference abstracts, case reports and posters.
Q.A. used	None (In line with the usual methodology for scoping reviews, an assessment of risk of bias of the included studies was not performed)
(Statistical) analysis	5-step methodological framework proposed by Arksey and O'Malley, with a consideration of the subsequent recommendations by Levac et al. and the Joanna Briggs Institute. Comparison of the Resulting theme to the Theoretical Domains Framework.



<i>Description of the included studies</i>	
Number of included studies	24 studies
Design of included study	Most included studies used a form of qualitative methodology (17/24); others employed a mixed methods methodology, a cross-sectional design using surveys, or a statistical analysis of questionnaire data.
Covered years	2009 – 2022 (2019 in Ng ¹⁷)
Countries	The UK (n=6), Sweden (n=5), the Netherlands (n=2), Finland (n=1), Ireland (n=1), France (n=1), Italy (n=1), and Portugal (n=1); in Australia (n=3), Canada (n=1), US (n=1) and Brazil (n=1).
Patient & disease characteristics	/
Interventions	• Several studies focused more on the diagnostic process, including stratified care, while others focused on treatment. • Treatment could be a general BPS approach or an approach like Cognitive Behavioral Therapy (CBT), Cognitive Functional Therapy (CFT) or psychologically informed practice. • Some of the studies focused solely on mapping the experiences and views of physiotherapists, while other studies evaluated BPS training for physiotherapists or the implementation of a specific BPS intervention.
Involved professionals	Physiotherapist but 1 study with also, chiropractor and 1 study on members of the Geriatrics and orthopaedics sections of the APTA.
Settings	No restriction (In 2021, Ng et al. published a systematic review on the barriers and enablers influencing healthcare professionals' adoption of a BPS approach [13]. This scoping review differs in that it focusses on physiotherapists in particular, instead of healthcare professionals at large, and limits the scope to primary care. The themes Ng et al. identified on the microlevel, however, are comparable to the ones in the current review.)
<i>Results</i>	
Summary of findings	• Barriers and facilitators were largely consistent across studies and countries; • Eight groups of barriers and facilitators were identified, thematically clustered in six themes: knowledge, skills, and attitudes; confidence; role clarity ; environmental context and resources; patient expectations and, therapeutic alliance. • Most of the papers presented more barriers than facilitators, which is in line with the focus on implementation of the approach;
Barriers	• Knowledge, skills, and attitudes: biomedical perspective (a biomedical focus and embarrassment asking about psychosocial factors, as well as ambivalence among physiotherapists towards the behavioral medicine approach); lack of knowledge and skills (biomedical focus due to their (undergraduate) training), lack of skills regarding communication strategies.



	• Confidence: experience of a lack of confidence in, and limited belief about, their capabilities to use a BPS approach in assessment and treatment (e.g. exploring emotional distress or implement certain communication strategies).. • Role clarity: long biomedical tradition, public expectations, care not to assume the role of psychologist and uncertainty around the scope of practice. • Environmental context and resources: limited resources or environmental constraints either material (e.g. lack of time, lack of reimbursement and suitable environment for assessment and treatment) or social (lack of organizational support, feelings of isolation or contradictory expectations from the organization) • Patient expectations, beliefs and attitudes: public expectation of what physical therapy treatment should be (more biomedically oriented); unrealistic expectations, patients' beliefs (e.g. about the causes) influencing therapy procedure and outcome; passive attitude to treatment, contrary to the patients' statements. • Therapeutic alliance: threat of patient 'conflict', fear of undermining the relationship with the patient.
<i>Enablers</i>	• Knowledge, skills, and attitudes:/ (from the Table S2 in the Appendix): awareness of importance of PS factors and existing stratified care approach (SCA); acknowledgement of the multifactorial nature of back pain and the PT's role to consider BPS factors; knowledge about red and yellow flags in back pain; acknowledgment of the limitations of a biomedical orientation; acknowledgement of the risk of iatrogenic problems resulting from advice not supported by evidence, or unwittingly colluding with patients' caution about movement; awareness of concepts of catastrophism and kinesiophobia; effective communication for understanding the patients perspective and individualizing treatment; importance of building therapeutic alliance; personal motivation/commitment to improve care provided; PTs' strong commitment to empowering patients to take personal control and self-manage their disorder; expectation of the potential increase in quality of health, value creation and innovation provided by using SCA; critical reflection; doing conscious and practical adjustment (e.g. reminding themselves of communication strategies prior to a consultation) in order to improve the implementation of these strategies. • Confidence: / • Role clarity: by recognizing the multifactorial nature of back pain, PTs perceived their role to consider the psychological, social and lifestyle factors associated with the pain; careful not to assume the role of psychologists but share understanding of the patients' difficulties with them; boundary setting; consulting other health care professionals or more experienced colleagues; • Environmental context and resources: Social structures in the workplace such as supervision, coaching, colleagues, and management; A well-functioning interdisciplinary network with clear referral pathways and a common language; facilitation of the communication between GPs and PTs; having a private room, autonomy, work in team, management support; peer influences on communication practices (informal learning); membership of the work community; fewer sessions required when using SCA. • Patient expectations, beliefs and attitudes: not accepting that patients just came for physical treatment and did nothing by themselves.



	• Therapeutic alliance: shared responsibility with patient for recovery and avoiding dependency, trust between therapist and patient, PT's use listening; clear communication.
<i>Clinical implications</i>	• The overall expectation that the use of a BPS approach costs more time, and therefore resources and reimbursement, can be questioned. This might be true for the period of implementation and while learning to integrate this new approach. When treating patients using an integrated BPS approach, it might shorten the therapeutic process by focusing on self-efficacy and the prevention of further chronification. However, time and resources might have to be allocated differently to fit the BPS approach. • When working with chronic pain from a BPS approach, it is crucial that health care providers within the organization work from a common understanding of pain. Preferably, implementation includes whole teams of health care providers. It has been suggested that clinical champions can play a facilitating role in this. • Many physiotherapists experience difficulty in negotiating a shared understanding with the patient on pain and the required course of treatment. The value placed on a therapeutic alliance and the barrier of patient expectations create conflict for the physiotherapist. Further research on the skills needed for negotiating and shared decision making regarding a BPS approach is recommended. • Results of this scoping review suggest that limiting teaching and training to focus solely on improving knowledge and skills might be less effective because it disregards important barriers in other domains. Integration of barriers such as confidence, role clarity and dealing with patient expectations might be facilitatory in changing behaviour. Combining didactic and experiential learning over longer durations with supervision and feedback might yield better results. • Because patients with chronic pain are not a homogeneous group, different interventions may be indicated for different subgroups of patients. This requires the ability of physiotherapists to apply clinical reasoning skills, and a dynamic approach of communication and practical skills to deliver personalized care. It can be questioned whether the treatment of patients with chronic pain requires an advanced practitioner. • The identified theme of environmental context and resources also draws attention to the organization of the health-care system. Time, reimbursement, incentives and being part of a network have been described as factors influencing the implementation of BPS care. To what extent and in what way the health care system is of influence could be a topic for further research.
<i>Authors recommendations</i>	• Further research is needed to give a more in-depth interpretative explanation of, e.g., the interrelatedness of the themes, whether there is a hierarchy in barriers identified, and the roots of these barriers. • More research needs to be conducted on how to target these barriers and facilitators in implementation, the relevance for pre- and post-graduate education, and the role of the health care system.
<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Heterogeneity of the included studies ;



	• Large variety in the use of terminology, in naming different domains and in the way of describing and structuring the data; extraction, mapping and thematization relied, therefore, on the interpretation of the authors; • Studies also differed in aim, country of origin, methodology and perspective. • Difficulty in exploring the BPS model since the varied description and lack of consensus regarding the definition of the psychosocial construct. Many papers focus on a single condition, on a specific part of the clinical process, a detailed BPS intervention or a single approach, while often not clearly specifying what is seen as BPS or psychologically informed physiotherapy. • Some papers described barriers and facilitators as part of a training implementation. • PT's perception of patients expectations (no direct patients perspective)
<i>Other limitations</i>	• No quality assessment of the included studies (but arguments for not doing it)
<i>KCE Q.A.</i>	Moderate risk of bias
<i>Comments</i>	6 out the 24 studies were also included in Ng 2021 ¹⁷



1.5.32 Evidence table – Van Erp 2019

Van Erp_2019 ²⁸	
Objective	
Clearly mentioned	- To provide an overview of the evidence of randomized controlled trials (RCTs) for the effectiveness of primary care BPS interventions compared with waiting list controls or other primary care treatments in improving functional disability, pain, and work status of patients with CLBP; - To provide an overview of the design of each BPS intervention, of the profiles of physiotherapists, of the BPS training programs for therapists, as well as of other factors such as protocol adherence and therapy compliance.
Methods	
Design	Systematic review following the Cochrane collaboration guidelines and PRISMA , PROSPERO (CRD42015029878; 08.12.2015).
Source of funding and competing interest	Funding: Adelante, Centre of Expertise in Rehabilitation and Audiology Hoensbroek, The Netherlands; the Province of Limburg (SAS-2012-01300) and CZ Foundation (AFVV12-205); No conflicts of interest to declare
Search dates	Inception – December 2015
Searched databases	- MEDLINE (Ovid) ; MEDLINE In-Process Citations & Daily Update (Ovid) - PubMed (NLM) (Internet) http://www.ncbi.nlm.nih.gov/pubmed - Embase (Ovid) - PsycInfo (Ovid) - Cumulative Index to Nursing and Allied Health Literature (CINAHL; EBSCO) - Cochrane Database of Systematic Reviews (CDSR; Cochrane Library: Wiley) - Cochrane Central Register of Controlled Trials (CENTRAL; Cochrane Library: Wiley) - Database of Abstracts of Reviews of Effects (DARE; Cochrane Library: Wiley) - Health Technology Assessment (HTA) database (Cochrane Library: Wiley) - PEDro (Internet) http://www.pedro.org.au/
Eligibility criteria	Population: Adult participants (≥18 years) Disease: Nonspecific CLBP (= pain between the 12th rib and gluteal region, with or without radiation towards 1 or both legs, present for at least 12 weeks.)

	Intervention: • BPS primary care treatment (=multicomponent intervention including at least (1) a biological component (e.g. to improve [knowledge of] physical components, pain physiology, pain sensitization, or differences between acute and chronic pain) and (2) a psychological or social component (e.g. to improve [knowledge about the influence of] cognitions, attitude, [pain] behavior, coping styles, [self-] management strategies, and/or coping styles of family, friends, and colleagues). • Interventions provided individually or in a group. • Interventions delivered by physiotherapists in primary care ((i.e. a local primary care practice or a primary care practice of a hospital physiotherapy department). Control: Primary care treatments without a BPS approach (e.g. usual care, physical treatment), no treatment, or waiting list. Outcomes: • Primary outcomes included patient-centred measures such as functional disability, pain, and work status. • Secondary outcomes included generic functional status or well-being, overall improvement or satisfaction, emotional functioning and cognitions (depression, anxiety, catastrophizing, fear avoidance), and adverse events (AEs). Design: • RCTs. • Full-text and peer-reviewed. • Language: English, Dutch and German.
Exclusion criteria	Disease: Patients with acute and subacute LBP unless these subjects comprised 10% or less of the total study population ($\geq 90\%$ should be CLBP), or results of patients with CLBP were presented separately. Intervention: Multidisciplinary interventions delivered by different healthcare professionals.
Q.A. used	Cochrane Back Review Group “risk of bias” tool Grades of Recommendation, Assessment, Development, and Evaluation (GRADE) approach for the overall quality of evidence..
(Statistical) analysis	Narrative synthesis. After data extraction from the included studies, it became evident that the studies were too heterogeneous to justify meta-analysis.
Description of the included studies	
Number of included studies	7 studies (in 12 publications)
Design of included study	1 feasibility RCT and 1 pilot RCT, leaving 5 full-scale RCTs.
Covered years	2007 - 2013



Countries	Switzerland (n=1), Norway (n=1), Australia (n=1), the Netherlands (n=1), and the United Kingdom (n=3)
Patient & disease characteristics	Sample sizes of the included studies ranged from 28 (pilot RCT)²⁹ to 701 patients,²¹ resulting in an overall included sample size of 1,426 patients. Info on the pain and disability score but not on the disease.
Intervention group	BPS interventions, all containing cognitive-behavioral principles: • Mainly specific exercise program : operant conditioning and graded activity principles (n=2); the 5 A's model of health behaviour advice (ask/assess, advice, agree, assist, arrange) (n=1) • Cognitive-behavioral therapy (CBT)(n=2) or cognitive-functional therapy (n=1) • Neuro-physiological education about pain, disability and perception in addition to sensory and motor retraining (n=1) All of low intensity (≤ 16 hours) except one (35h) Total duration of included BPS interventions ranged between 6 and 12 weeks. Booster sessions in the longer term (3 – 10 mo) (n=2) Individualized session (n=4), group session (n=1), combining (n=2).
Control group	• Education and advise (n=3) • Physical activity therapy (n=4). Physical activity therapy included usual or guideline physiotherapy, motor control therapy and manual therapy plus exercise.
FU duration	All studies provided data at short term (≤ 3 months follow-up), 5 studies at medium term (> 3 to 12 months follow-up), and 5 studies at long term (≥ 12 months follow-up; all follow-up outcomes were measured post randomization).
Involved professionals	Physiotherapists (mostly participated in a short training program with a duration ranging from 2 days to a maximum of 4 days except in 1 study with 106 hours of cognitive behavioral training); As additional support, most therapists received a manual. 2 studies provided (or at least reported on) support via other sources.
Settings	Patient refereed to secondary care.
Results	
Summary of findings	• This systematic review shows moderate quality evidence of beneficial effects (in improving functional disability and pain) for primary care BPS interventions over education and advice in patients with CLBP. Furthermore, primary care BPS interventions and physical activity interventions provide equally promising effects. However, additional studies are needed. • It is important to select therapists based on their BPS skills or to adequately educate and support them in providing BPS elements. There is an essential role of sufficient training and resources (e.g. treatment protocols and support) in complex behavioral interventions. Trained physiotherapists might furthermore be able to identify patients with LBP at risk for developing chronic complaints and treat them at an early stage without the need of referral. This

	might be more convenient for patients than being treated in expensive, secondary care settings, which frequently have a medicalizing focus instead of a de-medicalizing focus, and for which referral to a specialist is necessary.
Adherence to interventions	<i>NB adherence quoted in the objective but not among the outcomes in the methods</i> • Compliance with interventions was acceptable in 4 studies, unclear in 1 study, and not acceptable in 2 studies. • The percentage of patients who discontinued the BPS intervention when allocated and after treatment was started was low ($\leq 5\%$) in 3 studies, moderate ($\leq 21\%$) in 3 studies, and not reported in 1 study. • Reasons for discontinuing the BPS interventions included allergic reaction to pedometer (7%), not able or willing to attend group sessions ($< 1\%$), losing person to support home exercises (7%) or problems with online home training program (14%), time constraints (2%), and not improving (1% and 5%, respectively). • At the end, compliance was assessed differently in each study. E.g. with a pedometer driven walking program, one study assessed adherence to the step target and showed that 73% of the patients adhered to the weekly step target during the 8-week program. Two other studies reported that 63% attended at least half of the group sessions. Another assessed to what degree patients answered questions correctly and performed exercises and reported that $\geq 81\%$ reached the predefined adherence level. However, they did not take into account the data of 6 patients who dropped out.
Barriers	• Reasons for discontinuing the BPS interventions included allergic reaction to pedometer (7%), not able or willing to attend group sessions ($< 1\%$), losing person to support home exercises (7%) or problems with online home training program (14%), time constraints (2%), and not improving (1% and 5%, respectively). • One study showed that physiotherapists found it difficult to apply cognitive-behavioral communication styles and to identify, for example, patients' anxieties and fears (73% did not achieve this element).
Enablers	• The beneficial effects of BPS interventions over education and advice could be explained by the fact that patients may need to experience that the learned information is applicable to their personal context. It is conceivable that they need to apply learned information into practice, while undergoing treatment, and need support from a physiotherapist on how to implement it in their daily lives. Regarding the BPS intervention protocols, nearly all BPS interventions included such practical components. • A 2-day training program completed by a treatment protocol with a detailed description of each treatment session, supervision, and a DVD with examples of the first sessions, and access to a website with supporting materials seems to enable adequate delivery. However, only training did not significantly increase the physiotherapists' behavioral orientation.
Authors recommendations	• Since the included studies suffered from methodological and/or practical limitations, new, higher quality studies would add valuable information to the findings of this systematic review • Social component is frequently not addressed in depth during a BPS intervention or studies do not provide in depth information about to what extent it was explicitly addressed during treatment. It is then hard to define whether the BPS intervention actually comprises all 3 components. For future BPS interventions, however, it may still be recommended to



	explicitly address the social component and furthermore to publish a protocol of the BPS intervention to inform readers. In addition, it might be recommended to perform a process evaluation for a better interpretation of the study results.
Limitations and other comments	
Limitations quoted by the authors	• Rather low number of RCTs evaluating primary care BPS interventions, • Limitations of the included studies were the heterogeneity in study and treatment designs and the use, or not, of measurement instruments, especially psychosocial ones. • The main source of bias in the included studies was the inability to blind patients, therapists, and outcome assessors (but unavoidable). • Not really primary care (included studies used a mixed nature of patient selection strategies, such as GPs, advertisements, and/or secondary care specialists. Therefore, part of the study population was composed of patients initially referred to secondary care)
Other limitations	• Included studies in English only (but search also for Dutch and German) • No clear description of the methods used for the narrative synthesis (but well description of the included studies) • No list of excluded studies • No sources of funding for the studies included in the review
KCE Q.A.	Critically low quality

1.5.33 Evidence table – Watson 2019

Watson 2019 ²⁴	
Objective	
Clearly mentioned	To investigate the clinical effectiveness, and patients' experience of, pain neuroscience education (PNE) for people with chronic musculoskeletal pain (CMP) Review questions: • How effective is PNE as an intervention for the management of adults with CMP? [out-of-scope – results not reported] • What are the perceptions of PNE in adults with CMP? This question is delineated into the following three objectives: 1) To explore patient experiences of participating in PNE. 2) To explore their perceptions of its effectiveness. 3) To explore how it influenced their understanding of pain
Methods	
Design	Systematic review for qualitative studies Meta-analysis for studies on efficacy
Source of funding and competing interest	This research was funded by Teesside University. The authors have no conflict of interest to declare
Search dates	Search date: 25 July 2017 and updated on 14 June 2018
Searched databases	The Cochrane Library, AMED, CINAHL Complete, MEDLINE, PsycInfo, PEDro, Scopus, EMBASE, Education Resources Information Centre (ERIC), Web of Science, clinicaltrials.gov, dissertations indexed with ProQuest Dissertations and Theses Global and ETHOS
Eligibility criteria	Population: Adults (≥18 years) Disease: Chronic musculoskeletal pain (CMP) including chronic lower back pain, chronic neck pain, osteoarthritis or rheumatoid arthritis, non-specific or widespread musculoskeletal pain conditions lasting for ≥3 months Intervention: Pain neuroscience education (PNE, a form of biopsychosocial education, is an intervention used in the management of CMP aiming to reconceptualise an individual's understanding of their pain as less threatening) Design: Qualitative studies that explored the experiences and perceptions of adults with CMP who had received PNE Publication date: Studies published between 01/01/2002 and 14/06/2018.
Exclusion criteria	Disease: Non-musculoskeletal pain such as cancer pain, visceral pain or post stroke pain



Q.A. used	Qualitative Assessment and Review Instrument of the Joanna Briggs Institute ConQual approach was used to establish confidence in the qualitative findings.
(Statistical) analysis	Qualitative research findings were pooled using JBI SUMARI software according to the following steps: • level 1 findings: aggregation or synthesis of findings to generate a set of statements that represent • level 2 findings: aggregations were rated according to their quality and categorising these findings based on their similarity of meaning • level 3 findings: meta-synthesis generating a single comprehensive set of synthesized findings Where textual pooling was not possible, the findings were presented in a narrative form
Description of the included studies	
Number of included studies	4
Design of included study	individual semi-structured interviews with open questions. One study was completed with focus group
Covered years	2016-2018
Countries	UK, The Netherlands
Patient & disease characteristics	Adult participants with chronic low back pain or heterogeneous CMP
Interventions	Single 2h group PNE session PNE in a transdisciplinary setting
Involved professionals	/
Settings	NHS Pain Clinic, (3 studies) participants own homes or a physiotherapy practice (1 study)
Results	
Summary	Several key components were identified to enhance the patient experience of PNE such as allowing the patient to tell their own story. These components can enhance pain reconceptualisation, which appears to be an important process to facilitate patients' ability to cope with their condition.
Barriers	Not reported
Enablers	• Identification of the patients' prior understanding and beliefs to tailored PNE. This promote the readiness to engage with PNE by raising the patients' awareness of the biopsychosocial nature of pain



	• To enhance patients ability to cope with their condition, PNE should be delivered by health care professionals (HCPs) skilled in PNE delivery and facilitation of group, or one-to-one interactions with, and between, patients and other HCPs. • To ensure relevance of PNE to the individual, progress towards reconceptualisation should be monitored throughout, tailoring concepts that have not been accommodated.
<i>Clinical implications</i>	The qualitative component of this review identified several important components for optimising the patient experience such as the need for a skilled clinician to deliver the intervention with expertise in group facilitation and/or one-to-one interactions. These have implications not just for how PNE should be delivered but also for the training of the education provider.
<i>Authors recommendations</i>	• More studies investigating cost effectiveness are needed. • More RCTs to investigate the long term effectiveness of PNE. • More qualitative research into PNE from a wider number of research groups to explore and enhance the transferability of our qualitative findings.
<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• No search for economic outcomes such as cost effectiveness • Only studies published in English • Paucity of qualitative studies, three of which were published by the authors of the review
<i>Other limitations</i>	/
<i>KCE Q.A.</i>	Low risk of bias



1.5.34 Evidence table – Westrap 2023

Westrap 2023²⁵	
Objective	
Clearly mentioned	To uncover a range of perspectives which encompass the complexities of care of the patient with CNCP.
Methods	
Design	Literature review (ethnographical perspective)
Source of funding and competing interest	No info on funding nor on conflict of interest.
Search dates	After 2010 due to the shift in clinical practice away from using opioids from this time.
Searched databases	CINAHL, BNI, PubMed, Embase and PsychInfo. + Supplementary search in Google Scholar.
Eligibility criteria	Disease: Chronic primary pain Setting: Primary care setting Intervention: Non-pharmacological pain management Comparator: For comparison, opioid or other non-pharmacological pain management Outcomes: Efficacy, adverse effects, complication, tolerance, adherence, compliance Design: Qualitative studies
Exclusion criteria	Population: <16y old; US military veterans, not in westernized culture Design: • Acute pain (<3 months duration) • One pain type (e.g. knee pain/neck pain) • Malignancy/post-surgical pain/Substance misuse disorders • Secondary care interventions/in-patient hospital care • Focus on one type of non-pharmacological approach rather looking at them as a broader strategy Setting: Chronic pain service development Intervention: Focus on telehealth Design: Quantitative studies, no full text access



	Publication date: Before 2010
Q.A. used	McMaster critical review forms for qualitative studies
(Statistical) analysis	Reflexivity analysis in the form of a reflective diary as the author has both personal and professional experience in dealing with CNCP.
Description of the included studies	
Number of included studies	2 on patients, 2 on HCPs and patients and 1 on HCPs perspectives
Design of included study	Qualitative studies
Covered years	2013-2017
Countries	Ireland, UK, USA (n=3)
Patient & disease characteristics	• low income minority adults with chronic pain and comorbid depression • adult > 50y old, members of chronic pain Ireland, • patient taking opioids for chronic pain • patients with chronic musculoskeletal pain
• Intervention	Studies on patients: a. Integrated medical group visit (IMGV) which combines group medical visits, mindfulness based stress reduction (MBSR) and evidence based medicine (EBM): 10 sessions with a Primary care provider and meditation instructor for racially diverse and low-income patients. b. Horne Model (self-regulatory model of disease which incorporates internal factors that include beliefs about medication. Studies on patients and HCPS • Acupuncture and chiropractic • Tapering opioids In the single study on HCPs: stepwise approach
Involved professionals	No direct info: physicians in 2 academic primary care clinic; primary care providers; GPs with experience of prescribing strong opioids.
Settings	No direct info (hospital, primary care clinic).



Results	
Summary of findings	A conceptual model illustrates the overlapping and distinct concerns of patients, healthcare providers (HCPs) and health care system. in the context of managing Chronic Non-Cancer Pain (CNCP). The diagram is structured as a three-way Venn representation, highlighting the complexity of CNCP care. Regarding patients, there are pain relief, acceptance, family influence, isolating, unpredictable and loss of control; regarding HCPs, there are lack of training, assessment challenges, clinical experience and guidelines; Shared concerns between patients and HCPs are treatment expectations and, opioid safety and adverse effects; Regarding the health care system, there are shared decision making, access to specialists, frequent appointments, complex system to navigate and group treatment modalities; shared by patients and health care system, there are ageing and compliance; shared by HCP and health care system, there are limited alternate options.
Barriers	Patients perspective: • CNPC is isolating and can cause a loss of control; • Concerns regarding navigating the care system, access to specialists and a complex system which surrounds chronic pain management. • General acceptance by patients that strong opioids play a part in CNCP management including over the longer term. • No or minimal response to patients clues about opioids adverse events. • Connectivity between HCPs and specialists is an issue HCPs perspective: • Patients may be unwilling to consider other options than opioids where alternatives were acupuncture or chiropractic. • HCPs fear difficult interactions for discontinuing opioid therapy; they responded minimally (43%) to patients clues regarding opioids use and much fewer (14%) responded sympathetically or empathically. • Difficulty in assessment of the CNCP patient and the duration of use of opioids along with balancing side effects, tolerance and addiction. The level of experience of the HCP as well as any involvement in significant events using opioid therapy resulted in variation in practice across the study group. Lack of HCP training in managing CNCP was evident and reported as such by over half of the respondents who had received none. • Opioids can foster a patient's passivity in relation to their motivation to self-manage as well as citing an unrealistic expectation by patients for zero pain. Due to patient dissatisfaction of alternatives for pain relief there were discussions of over- the-counter medications to cope and function.
Enablers	Patient perspective: • Openness to taper opioids: (if adverse effect); • Social support (also given by family) as well as with HCPs.
Proposed strategy	Future planning of services for CNCP should heed these findings as the majority of treatment currently involves a 15-minute visit to a HCP in primary care which is too little time to support patients with self-management strategies. A suggestion would be for



	the integrated medical group visit (IMGV) model to be applied to group consultations with the presence of specialist HCP's covering biopsychosocial aspects of care.
Authors recommendations	Future research would be beneficial in this area, particularly qualitative studies looking at the relationship between patient and HCP, working collaboratively to help find potential solutions to decrease long term opioid therapy, as the amount of good quality research in this area is lacking
Limitations and other comments	
Limitations quoted by the authors	• Qualitative studies only • 2010 as start
Other limitations	• No info on funding or interest conflict • No info on methods for the synthesis • No detailed description of the 5 studies (e.g. HCPs involved? Country...) • No robustness analysis
KCE Q.A.	High risk of bias



1.5.35 Evidence table – Wilson 2015

Wilson 2015 ⁴⁰	
Objective	
Clearly mentioned	To summarize the research evidence and elicit health system policymakers', stakeholders' and researchers' tacit knowledge and views about improving chronic pain management in Canada (topic 1) and engaging provincial and territorial health system decision makers in supporting comprehensive chronic pain management in Canada (topic 2).
Methods	
Design	Two SH Dialogues prepared in four steps: 1) Steering committee with representative from partner organisations and SH 2) Key informant interviews (policy makers, managers, SH and researchers) 3) Relevant research evidence drawn from SR and occasionally from single studies when reviews were not identified; 4) Synthesis of the key findings in the form of an evidence brief (for the first dialogue) and an issue brief (for the second dialogue) Synthesis of 2 deliberations on the brief with 13 stakeholders for topic 1 (18-22 foreseen but difficulty to engage policy makers) and 16 for topic 2.
Source of funding and competing interest	Funded by the Community Alliances for Health Research and Knowledge Translation on Pain (CAHR-Pain) No conflict of interest to declare.
Data collection date	Literature search date December 2009 Deliberation with SH on December 2009 and April 2011.
Searched databases	Pub med + grey literature (websites of Canadian and international organisations) + Health Systems Evidence (www.healthsystemsevidence.org)
Eligibility criteria	Disease: Chronic non-cancer pain as defined by • International Association for the Study of Pain (IASP) definition of pain: an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage. • Canadian Pain Coalition definition of chronic pain: pain that persist over 3 months, beyond when an injury should have healed. Chronic pain can be intermittent (occurs in a pattern) or persistent (lasting more than 12 hours daily) and can be considered a disease itself.
Exclusion criteria	Disease: Cancer pain Intervention: Primary prevention of chronic pain



<i>Q.A. used</i>	Amstar
<i>(Statistical) analysis</i>	N.A.
Description of the included studies	
<i>Number of included studies</i>	Seven
<i>Design of included study</i>	Systematic review
<i>Covered years</i>	Years of last search from 1996 to 2008
<i>Countries</i>	No info
<i>Patient & disease characteristics</i>	N.A.
<i>Interventions</i>	• Mass media interventions • Organisational partnership • Local opinion leaders, educational meetings, audit, feedback, multifaceted interventions for HCPs • Guidelines implementation including patient-mediated interventions.
<i>Involved professionals</i>	HCPs, physiotherapists, nurses, midwives and other professions allied to medicine.
<i>Settings</i>	No restriction
Results	
<i>Summary of findings</i>	Two topics are identified: For the TOPIC 1, Supporting chronic pain management across provincial and territorial health systems in Canada • SR supported the use of evidence-based tools for strengthening chronic pain management, including patient education, self-management supports, interventions to implement clinical practice guidelines, and multidisciplinary approaches to pain management. While research evidence about patient registries/treatment-monitoring systems is limited, many dialogue participants argued strongly that such a system is needed. In addition, many saw a registry as a precondition for moving forward with other options, including creating a national network of chronic pain centres with a coordinating ‘hub’ to provide chronic pain-related decision support, and a cross-payer, cross-discipline model of patient-centred primary health care-based chronic pain management. For the TOPIC 2, Engaging health system decision maker in supporting comprehensive chronic pain management • SR were found indicating that traditional media can be used to positively influence individual health-related behaviours, and that multistakeholder partnerships can contribute to increasing the attention paid to issues regarding policy agendas. From previous



	efforts in Canada, evidence for 'cross-sectoral reallocation', which highlighted that regional governance can help ensure integration and coordination within regions ; fostering an organizational culture that is supportive of change, and starting with low-profile changes that can demonstrate how it can work, are important facilitators of cross-sectoral reallocation processes. Dialogue participants emphasized: the need to mobilize behind an effort to build a national network that would bring together existing organizations and committed individuals; an early win for the network may include the endorsement of a national pain strategy; and the need to not lose the primacy given to an 'evidence-based' and 'grass-roots' approach in a rush to a 'big bang' solution.
<i>Problems regarding chronic pain management</i>	For TOPIC 1: Supporting chronic pain management across provincial and territorial health systems in Canada A variety of health system arrangements do not support chronic pain management: 1) limited support for self-management; 2) inadequate access to primary healthcare providers for some Canadians and inadequate management of chronic pain by some primary healthcare providers and specialists, which may be related to inadequate training and continuing professional development; 3) many non-physician healthcare providers (including community-based rehabilitation practitioners) are not actively engaged in chronic pain management at the primary healthcare level; 4) inequitable geographical access to regional multidisciplinary chronic pain management centres; 5) lack of a monitoring system to identify patterns of under- and over-utilization of programs, services, and drugs; 6) financial arrangements that encourage some forms of care (e.g., injections) but not others (e.g. counselling and monitoring) and that create financial barriers to access for some patients; 7) governance arrangements that do not ensure the credentialing of chronic pain providers and clinics. • Inconsistent access to effective approaches to chronic pain management (in Canada) • Lack of coordinated approaches to support implementation of chronic pain management guidelines • Significant burden of chronic pain that the health care system must prevent or manage. For TOPIC 2: Engaging health system decision maker in supporting comprehensive chronic pain management • Lack of awareness of chronic pain (seen as a symptom rather than a disease) • Lack of awareness of limitations in existing programs and services (e.g. accessibility of pain clinics) • Gaps in health system arrangements that limit the attention given to chronic pain (delivery arrangements as coordinated or integrated care; financial arrangements and governance arrangements as accreditation for HCP) • Limited reach of existing efforts to engage health system decision makers in supporting chronic pain (e.g. call for a national pain strategy)
<i>Possible interventions</i>	Three possible interventions for TOPIC 1: Supporting chronic pain management across provincial and territorial health systems in Canada 1. Create a model patient registry/treatment monitoring system in a single jurisdiction (unclear results in literature):

This option focuses on:

- identifying what services are being offered to whom (i.e., what types of patients), by whom (e.g., what disciplines), and how frequently (with appropriate attention to privacy concerns);
- identifying both under- and over-utilization;
- monitoring efforts to improve service delivery and evaluating their impacts; and
- publicly reporting opportunities for improvement

To further understand this option, it is useful to consider it according to four key health system elements:

- patient registries;
- treatment-monitoring systems;
- privacy issues pertaining to patient registries/treatment-monitoring systems; and
- public reporting of aggregated data

2. Create a national network of centres with a coordinating 'hub' to provide chronic pain-related decision-support

The function/focus of a coordinating hub would be to:

- analyse data about treatment patterns (which can include the analysis of data from a patient registry/treatment-monitoring system, which was the focus of the preceding option);
- synthesize research evidence;
- develop and disseminate resources and tools to support self-management;
- develop and disseminate clinical practice guidelines and other resources and tools to support providers and organizations in prevention, early identification, and ongoing treatment;
- offer support to undergraduate professional training programs;
- offer continuing professional development and other strategies to support evidence-based care (both for single disciplines and multidisciplinary teams); and
- monitor efforts to improve care (across the full range of payers and the full continuum of care, including primary health care, postsurgical care, etc) and evaluate their impacts

This option can be further understood by considering the effectiveness of the tools and resources the hub would provide (no review on the hub concept but evidence supporting the use of a range of evidence-based tools and resources), including:

- tools to support self-management (e.g., education for people living with chronic pain, decision aids, personal health records, peer support and telephone support);
- interventions to support the dissemination of clinical practice guidelines;
- support for undergraduate professional training programs;
- continuing professional development and other strategies to support evidence-based care; and



- monitoring efforts to improve care and evaluate their impacts

3. Broker and support the implementation of a cross-payer, cross-discipline model of patient centred primary health care-based chronic pain management

This option focuses on rewarding:

- quality, such as by re-balancing fee schedules away from procedures and toward payment for the time demands associated with assessment, management, support, and dealing with payers and employers, and by accrediting chronic pain 'specialist' providers or centres; and
- efficiency, such as by engaging the most cost-effective providers and by providing tiered support from telecommunications to in-person interactions, and through tiered referrals from primary health care to accredited regional multidisciplinary pain clinics

This system redesign has a number of health system elements that each need to be considered (Several reviews relate to cross discipline models of care):

- cross-payer models of patient-centred primary health care-based chronic pain management;
- cross-discipline models of patient-centred primary health care-based chronic pain management that address the full spectrum of comprehensive care (e.g. prevention, early intervention, treatment, management and rehabilitation);
- rewards for quality and efficiency in primary health care;
- fee schedules that consider the time demands associated with primary and secondary prevention, treatment, management and rehabilitation, as well as dealing with payers and employers;
- accrediting chronic pain 'specialist' providers or centres;
- engaging the most cost-effective providers; and
- providing tiered support from telecommunications to in-person interactions and through tiered referrals from primary health care to accredited regional multidisciplinary chronic pain management centres

For TOPIC 2: Engaging health system decision maker in supporting comprehensive chronic pain management

1. Launch an advocacy campaign (based on 2 high-quality old reviews for traditional media)

Launching an advocacy campaign may involve using a variety of advocacy approaches to:

- increase attention to the issue in general; and
- elevate the visibility of chronic pain on provincial and territorial governments' agendas in particular (with this goal being ideally positioned within a more general effort to encourage better informed health system decision making)

Approaches to advocacy might include:

- traditional media for public engagement, such as print, radio and television;

- ‘new media’ for public engagement, such as mass short messages (MSMs) and other mobile phone-based strategies, as well as online petitions and other Internet-based approaches; and
- efforts to directly engage government officials

2. Create a multistakeholder provincial or national working group (poor evidence)

This option involves raising awareness and support among policymakers who could or should be paying attention to chronic pain, ideally in the context of a broader effort to engage all relevant stakeholders in supporting improvements to chronic pain management (with the stakeholders including the full range of health system decision makers, health care providers, researchers and provincial/national coalitions or nongovernmental organizations)

Elements of a multistakeholder provincial or national working group could include:

- establishing a national network of stakeholder groups with a coordinating ‘hub’;
- engaging key opinion leaders who can take action, both those leading the push for strengthened chronic pain management and those in primary health care practices, regional health authorities and government;
- equipping these key opinion leaders (and the stakeholder groups from which they are drawn) with the necessary tools to take action, which may in turn include:
 - compelling data and stories about the current burden of chronic pain and the implications (e.g. costs) of not addressing it;
 - regularly updated, evidence-based packages of care/guidelines for the management of chronic pain at the primary health care level and in related fields of practice;
 - mechanisms to coordinate across fields of practice and across relevant disease groups that are often linked to chronic pain; and
 - periodically identified priorities for new primary and secondary research and the communication of these priorities to relevant funders

3. Develop chronic pain policy portfolios and strategic foci (no evidence but previous experiences)

Developing policy portfolios or strategic foci would provide the opportunity to coordinate responses to chronic pain within and across governments, regional health authorities, and the stakeholder community and could include:

- engaging and liaising with other relevant policy areas within the government and regional health authorities to coordinate the development and implementation of relevant policies and programs; and
- engaging and liaising with relevant stakeholders to inform the development and implementation of programs and services in the community

Elements of this option might include:

- mapping what existing policy portfolios are relevant to supporting chronic pain management, particularly at the primary health care level; and
- establishing an integrated portfolio to support chronic pain management or a coordinating role that would work across other relevant portfolios and departments.

Barriers regarding possible interventions

TOPIC 1: Supporting chronic pain management across provincial and territorial health systems in Canada



Individual

Option 1 (create a model patient/registry/treatment-monitoring system in a single jurisdiction)

- Operational challenge in defining eligibility for a condition that lacks an 'event', widely agreed diagnostic criteria and demonstrated pathology
- Collection of individual-level data may compromise an individuals' privacy and lead to stigmatization
- Individuals often have more than one diagnosis (e.g. chronic pain and arthritis) that requires monitoring

Option 2 (create a national network of centres with a coordinating 'hub' to provide chronic pain-related decision-support)

- Resources (time and money) are required to meaningfully involve people living with chronic pain in the development and evaluation of medical device technology

Option 3 (implement a cross-payer, cross-discipline model of patient-centred primary health care-based chronic pain management)

- Individuals with chronic pain may need more specialized and urgent pain management for acute exacerbations or injuries than may be feasible in primary health care

Care provider

Option 1 (create a model patient/registry/treatment-monitoring system in a single jurisdiction)

- Primary health care providers will require training and support in how to use the registry/monitoring system

Option 2 (create a national network of centres with a coordinating 'hub' to provide chronic pain-related decision support)

- Primary health care providers may perceive decision supports as a threat to their professional authority
- Professional training and ongoing continuing professional development need to address how to deliver the full spectrum of comprehensive chronic pain management

Option 3 (implement a cross-payer, cross-discipline model of patient-centred primary health care-based chronic pain management)

- Health care providers, particularly physicians, have to ensure that a patient-centred primary health care model is integrated with speciality and community-based pain services
- Chronic pain has not traditionally been considered a chronic disease to be managed by primary health care providers

Organization

Option 1 (create a model patient/registry/treatment-monitoring system in a single jurisdiction)

- Organizations must be sensitive to the personal health information being collected and how it is used.

Option 2 (create a national network of centres with a coordinating 'hub' to provide chronic pain-related decision-support)

- All clinical and non-clinical members of health care teams need to be aware of the processes that need to be in place for effective use of information technologies

Option 3 (implement a cross-payer, cross-discipline model of patient-centred primary healthcare-based chronic pain management)

- Collaborative work arrangements need to be established and maintained between primary healthcare organizations, secondary and tertiary care organizations that can support these primary healthcare organizations (e.g. chronic pain management programs in academic health science centres), and payers.

System

Option 1 (create a model patient/registry/treatment-monitoring system in a single jurisdiction)

- Resources must be in place to ensure sustainability of information systems in the longer term.
- The need for public health surveillance must be balanced with the need for individual privacy.

Option 2 (create a national network of centres with a coordinating “hub” to provide chronic pain-related decision-support)

- Accountability structures need to be in place, which satisfy the multi-institutional and cross-jurisdictional nature of a national network of centres

Option 3 (implement a cross-payer, cross-discipline model of patient-centred primary healthcare-based chronic pain management)

- There may be a lack of human resources to provide team-based care (although which professionals and health care setting are required would need to be assessed initially)
- Provincial and territorial governments may be unwilling to broaden the breadth and depth of public payment for primary health care, particularly during a recession

TOPIC 2: Engaging health system decision maker in supporting comprehensive chronic pain management

Individual

Option 1 (launch an advocacy campaign)

- People living with chronic pain may be unwilling (e.g. due to the stigma associated with chronic pain) or unable (e.g. due to the limitations related to having chronic pain) to be meaningfully engaged in advocacy campaigns
- There is a wide array of advocacy campaigns for many different diseases with each competing for the attention of the broader public

Option 2 (create a multistakeholder provincial or national working group)

- People living with chronic pain may be unwilling (e.g. due to the stigma associated with chronic pain) or unable (e.g. due to the limitations related to having chronic pain) to be meaningfully engaged in the activities of a working group

Option 3 (develop policy portfolios in ministries and strategic foci in regional health authorities)

- Not applicable – such a change would likely not be visible to individuals

Care provider

Option 1 (launch an advocacy campaign)

- Providers or associations of providers attempting to directly engage health system decision makers may not have the time or skills required to make the case for better supporting chronic pain management



Option 2 (create a multistakeholder provincial or national working group)

- Providers may be skeptical about or unwilling to implement the recommendations from a working group

Option 3 (develop policy portfolios in ministries and strategic foci in regional health authorities)

- Not applicable – such a change would likely not be visible to care providers

Organization

Option 1 (launch an advocacy campaign)

- Organizations attempting to directly engage health system decision makers may not have the time or skills required to make the case for better supporting chronic pain management
- Key health system advocacy organizations (e.g. medical associations) may not be willing to devote resources to advocacy for chronic pain compared to other conditions that have bigger impacts on their members' interests

Option 2 (create a multistakeholder provincial or national working group)

- Health care delivery organizations may not be willing to participate in a working group for chronic pain compared with other conditions that have bigger impacts on their organization
- Organizations with existing chronic pain strategies may not be willing to participate in a working group that is covering ground that they have already covered

Option 3 (develop policy portfolios in ministries and strategic foci in regional health authorities)

- Regional health authorities are increasingly focused on broad issue domains (e.g. chronic disease) that encompass many different diseases rather than on specific issues

System

Option 1 (launch an advocacy campaign)

- There is a wide array of advocacy campaigns for many different diseases with each competing for the attention of health system decision makers

Option 2 (create a multistakeholder provincial or national working group)

- There are limited resources available to support the development and ongoing activities of a working group

Option 3 (develop policy portfolios in ministries and strategic foci in regional health authorities)

Ministries of health, and those seeking to influence them, are increasingly focused on broad issue domains (e.g. chronic disease) that encompass many different diseases rather than on specific issues

Possible strategies to address the barriers

TOPIC 1: Supporting chronic pain management across provincial and territorial health systems in Canada

- Initiate a national stakeholder-engagement process to raise awareness of health system issues within the chronic pain community and to raise awareness of chronic pain issues within the health policy and systems community:



	- This approach could be informed by the work done in Australia, which was the first country in the world to develop a national strategy and framework for the treatment and management of pain (27), which was the key outcome of a National Pain Summit in 2010 (48) - A similar approach in Canada might mobilize evidence from sources including (but not limited to) academic pain centres, interest groups representing people living with chronic pain and the public, health provider associations and other sources. • Implement the registry in the form of a program of research rather than as a government or regional health authority initiative. • Hinge the national network centres on getting the right champions (clinicians, leaders in teaching institutions and people living with chronic pain) around the table from the beginning. • Support the implementation of a cross-discipline model through demonstration projects, coupled with rigorous monitoring and evaluation (short term), and through systematic effort to “move beyond the early adopters” for the long term. TOPIC 2: Engaging health system decision maker in supporting comprehensive chronic pain management • Given that several options may be pursued simultaneously and that option elements may be combined in different and creative ways, identifying ‘cross-cutting’ implementation strategies may be an important first step • One possible cross-cutting implementation strategy may be the development, pilot testing and iterative redevelopment of a package of communication materials that highlight the ways in which chronic pain affects people’s lives, the costs associated with the status quo, and success stories (and how their cost-effectiveness compares with the status quo)
Authors recommendations	• Developing a national network and thereafter a national pain strategy; • Use of success stories or quick wins, which highlight the advantage of interventions, as important next steps toward developing such a strategy.
Limitations and other comments	
Limitations quoted by the authors	• Old research (December 2009 for the evidence brief and April 2011 for the issue brief) • Unable to engage the target size of 18 to 22 participants in each dialogue (13 in the first dialogue and 16 in the second); only two policymakers in the first dialogue, which was the rationale to convene the second with six policymakers)
Other limitations	
KCE Q.A.	Unclear



1.5.36 Evidence table – Yarycky 2024 HCPs

Yarycky 2024 ³⁵	
Objective	
Clearly mentioned	To formally examine the existing literature related to older adult pain management knowledge transfer (KT) and evaluate the outcomes of mobilization and implementation research efforts: focus on initiatives targeting HCPs. Specific objectives were as follows: • Examine the general characteristics of older adult pain related KT programs directed to HCPs. • Identify the primary mobilization and implementation outcomes examined and evaluate whether these outcomes are achieved. • Determine whether the outcomes examined align with the proposed standards of mobilization and implementation research. • Make recommendations for future directions in mobilization and implementation of pain-related knowledge. Because pain is a subjective experience, effective communication of pain is vital in pain management. Many individuals with dementia, however, may be unable to effectively communicate their pain given the cognitive impairments that accompany their condition. This limited ability to communicate pain complicates health care professionals' efforts to address patient needs. Furthermore, institutional barriers, such as insufficient resources and limited management support, may impede nurses from pursuing continuing education and implementing specialized strategies to improve the pain assessment/management of residents with limited ability to communicate. Knowledge translation (KT) consists on both knowledge mobilization (KM) and implementation: KM efforts identify, tailor, and appropriately disseminate education for patients, practitioners, and other knowledge users. KM activities do not include implementation components. Implementation refers to the methods promoting systematic uptake of evidence-based practices into routine practice and improving overall health care. Barriers, such as limited motivation to integrate new knowledge into practice, staff and infrastructure capacity, and applicability of tools and skills across diverse settings, may hinder KT's effectiveness. KT efforts can also be complicated by the unique nature of each population and setting.
Methods	
Design	SR according to the PRISMA guidelines PROSPERO (CRD42022329319)
Source of funding and competing interest	This project was supported by the Saskatchewan Health Research Foundation - Saskatoon, Saskatchewan, Canada (#5085). The authors declare no conflict of interest.
Search dates	Inception – June 2023
Searched databases	(CINAHL), MEDLINE, PsycInfo, and Web of Science databases



Eligibility criteria	Population: • Older adults: mean or median age of 65+ y or a clear indication of “older” adult where no mean age was provided • HCPs, caregivers and other knowledge users Disease: Pain (no restriction based on pain type or conditions) Interventions: • Discussion and evaluation of KT was a major study component • Mobilization or implementation outcomes (1 of the domain outlined by Proctor et al or knowledge changes after an education program) • Hospital protocols with a prominent training or education component for HCPs. • Telehealth initiatives only if telehealth technology was used to disseminate standardized information to groups of knowledge users. Publication format: Publications in peer-reviewed journal Language: English NB Programs were considered to be evidence-based if the program development, as indicated in the paper, was informed by previous research or included previously investigated components and tools
Exclusion criteria	Population: • If no patient age was provided and there was no strong indication the patient population was comprised of older adults, • Focus on populations with cognitive impairment due to developmental disabilities or traumatic brain injury Interventions: • Education used as a comparison (i.e. control group) in a study of another intervention • Research related to hospital protocols if no follow-up was provided focusing on the evaluation of the protocol mobilization or the impact of the protocol implementation • Telehealth initiatives used for patient consultation purposes Outcomes: • Studies evaluating curricula improvements for health care postsecondary programs • Brief mentions of KT outcomes without further elaboration Publication format: • Grey literature
Q.A. used	• Cochrane Risk of bias Revised tool to assess randomized trials (ROB-2; ROBINS-I).



	• Risk of Bias in Nonrandomized Studies—interventions tool ROBINS-I. • CASP for qualitative studies and qualitative aspects of mixed-method investigations. • For mixed method investigations, both quantitative and qualitative risk of bias were determined.
(Statistical) analysis	• For implementation, Proctor et al domains ; • For KM, development of categories such as knowledge changes, patient related changes, program perception, clinical practice changes, management changes, and reach. • Clinical practice change outcomes (e.g. changes in pain assessment, pain management, and program adherence) represented HCPs' changes in assessing and treating patients after education.
Description of the included studies	
Number of included studies	124 studies (126 references) • Over two-thirds of initiatives (n = 124, 72%) were directed towards HCP. More than half (66%) of all HCP directed studies included were identified as KM studies. • Forty-three studies were identified as KT-I programs
Design of included study	50 RCTs, 39 with a qualitative component
Covered years	1997-2023
Countries	Not directly mentioned.
Patient & disease characteristics	• Health conditions and pain concerns were targeted in nearly half (66%) of all studies. Pain and recovery from injury and surgical procedures were also targeted (10%). • Over one-third of initiatives (44%) did not specify a cause or type of pain. • Pain in dementia was a focus of 68 initiatives (mostly delivered in LTC Settings).
Interventions	2 subcategories: Studies disseminating, synthesizing, transferring, or exchanging knowledge to target users were labelled as KM studies (n=81). Programs delivered to a health care setting or health system with a formal implementation plan were classified as KT-I component programs (n=43). • Most initiatives were multidisciplinary in nature • HCPs most commonly received training in pain assessment and/or management (66%). • Most initiatives used a multiformat delivery approach (e.g. lecture, booklet, and video); only 4 (3%) initiatives had single delivery formats.



	- Across all programs, education sessions or workshop training was the primary delivery format (mostly not fully accessible to the public), following by handout (35%), online modules (18%), booklet/manual (15%), video (15%), coaching/mentoring (14%), site champions (14%).... - Eight programs did not specify program length.
Involved professionals	LTC staff were the most common targets of education (44%). Other were Nurses (15%), Ward/unit/clinic staff (13%), Physicians (6%), Home care staff (5%), Hospital staff (3%), Hospice/palliative staff (3%), Physical therapists (2%), Pharmacists (1%), Various (6%), Physician and patient dyad (2%).
Settings	- LTC facilities (44%) and hospitals or medical centres (31%) were the most common settings for HCP-directed studies. - Additional settings included hospice, home care organizations, and primary care clinics. - Twelve studies (9%) were delivered to multiple settings.
Results	
Summary of findings	- Overall, KT programs directed to HCPs were effective in raising awareness and increasing clinical practice knowledge in a satisfactory manner. However, knowledge increases did not result in consistent practice changes. KT alone may not be sufficient to address health care practice challenges and ensure consistency in evidence-based practice application to settings and patients. Additional support beyond initial education mobilization efforts may be needed to incorporate knowledge into practice. - Implementation strategies were used to remind HCPs of education content and reinforce strategy application and uptake. Challenges in appropriateness and fidelity impacted the uptake and feasibility of programs. KT without an implementation component may be justified for large-scale initiatives with great reach because implementation planning may not be feasible when the goal is to reach thousands or even millions of people, as is the case in KT social media campaigns. When delivering education to settings directly, implementation components are needed to ensure the application of knowledge to older individuals.
Interventions impact	KM studies Knowledge increases after education were examined in 30 HCP-directed studies: Evidence for improvement in knowledge after education was reported across studies (greater self-reported knowledge about pain compared with baseline); Knowledge topics typically included identifying and addressing pain in patients. - Six HCP-directed initiatives addressed pain attitudes and beliefs in delivered education: Significant changes in pain attitudes and beliefs in 3 initiatives. Nonsignificant pain attitude improvements in 2 studies. Patient outcomes were measured in only a relatively small fraction (i.e. 30 studies) of HCP-directed initiatives. Eleven (37%) studies showed improvements in all patient outcomes under study (e.g. pain intensity), whereas 7 (23%) failed to show any improvements. Three of 5 studies measuring patient QOL scores reported significant improvements.



- **Satisfaction** with program content and/or delivery was measured in 37 HCP-directed initiatives. Most studies reported that participants were satisfied with the program's education and delivery components (but often without control group). HCPs were often satisfied with the increased attention raised towards older adult pain and reported increased comfort and confidence in delivering evidence-based care.
- Studies examined **changes in pharmacological interventions** (e.g. increased use of analgesia and decreased use of psychotropics) and **nonpharmacological management strategies** (e.g. use of hot/cold therapy, mediation, distraction, aromatherapy, and massage). Pharmacological pain management improvements after KM efforts were reported. KM studies were less likely to promote nonpharmacological strategies.
- **Pain assessment practice** changes were measured in 15 HCP-directed KM initiatives. Evidence of improvements in pain assessment practices after education was noted (more consistent intervals in comparison to previous practices).

KT-I studies

- Twenty-five initiatives examined **acceptability** (that refers to the agreeable or palatable perception of a practice or service). Acceptability was often evaluated qualitatively. Most studies reported high acceptability responses from participants. Education and guidelines viewed as beneficial, of high value, and practical; acceptability associated with confidence and comfort towards education.
- **Appropriateness** is the perceived relevance and fit of an intervention to knowledge user needs. Outcomes assessed under appropriateness include suitability of knowledge and recommendations to knowledge users and patients, ease of program application to a setting, and barriers and facilitators to implementation. Appropriateness was often measured through qualitative means. Twenty-five initiatives assessed appropriateness; 6 (24%) programs were found to be appropriate.
- **Adoption** was reflected through the uptake of evidence based suggestions into practice. Nineteen KT-I programs assessed adoption. Over half (n = 10, 53%) of programs assessing adoption, reported increases in the use of program recommendations or resource use.
- Across KT-I initiatives, 19 assessed **feasibility**. Most programs were considered feasible. Program components that provided reminders or incorporated coaches and mentors to facilitate education into practice often increased feasibility. However, high feasibility ratings did not guarantee patient outcome improvements. Programs described as less feasible took time away from staff or used formats that lacked flexibility, such as written handouts for HCPs to read during shifts.
- Four KTI initiatives examined **cost**. Three studies reported decreased service costs after program delivery. One initiative reported the hiring cost of an interdisciplinary care leader but did not elaborate on the findings.
- **Penetration** was examined in 2 KT-I programs; target outcomes partially improved in both studies.

Barriers

KM studies

- Program information was considered fitting if it addressed gaps in participant knowledge and/or if suggested strategies were applicable to settings.
- Program fit was considered in 36 HCP-directed initiatives. A majority of programs were considered suitable for health care settings, clinical practice, and target patients.



	• Barriers to change, including high staff turnover, heavy workload, lack of time, scheduling issues, and resource sharing, prevented successful integration of programs into settings after education was delivered. • Barriers highlighted unmet staff and patient needs after program delivery. Physical therapists delivering updated clinical suggestions to home health care patients noted concerns with limited time per patient and patient adherence to evidence based strategies.⁴⁰ In 1 residential aged care facility, staff experienced challenges with resource sharing, hindering clinical practice changes. • Lack of program fit often prompted suggestions for improvements and future program topics. For example, health care staff desired a decrease in didactic time of dementia symptom management education. KT-I studies • In acceptability, staff reservations about KT-I were often associated with barriers to change, including staff turnover, overburdened workloads, and staff culture. • In appropriateness, barriers to change were high staff turnover, limited administrative support, scheduling conflicts, heavy workload, and staff perceptions. • In fidelity, many initiatives reported issues with documentation. Inadequate staff management and mismanagement of resource materials also hindered program fidelity. Technological barriers to fidelity were identified in web-delivered initiatives.
Adherence to additional interventions	Session attendance was assessed in 6 studies. Attendance was generally over 50%. Most attendance rates ranged between 79% and 90%. Lowest attendance rates were under 50%. KM studies • Eight studies for HCPs reported program adherence. In KM studies for HCPs, program adherence was only reported when deviations from intended delivery occurred. Deviations occurred to better accommodate staff schedules, promote uptake and as a result of time constraints. • Technology barriers greatly impacted adherence in one study, forcing a transition from web-delivered modules to paper copies. • Adherence to recommended documentation practices was considered in 11 HCP-directed initiatives. Documentation changes often pertained to scheduled pain assessments and patient care plans. Increases in documentation adherence occurred in 3 initiatives. No differences in documentation practices occurred in 4 studies. KT-I studies • Fidelity is the adherence to an implemented intervention as intended by the developers. 16 KT-I studies examined fidelity. Documentation completion was a common measure of fidelity as it reflected HCP adherence to pain assessment and management suggestions. Only 4 (29%) studies showed satisfactory fidelity



	Overall, sustainability was considered in 5 KT-I initiatives. Four (80%) successfully met sustainability outcomes; 3 of these studies reported maintenance of changes after implementation. Most follow-up periods were ≥ 6 months. The longest follow-up period was 18 months.
Authors recommendations	Future KT research about pain in older adults targeting HCPs: - KT studies should incorporate assessment of changes in clinical practice and patient outcomes. There is an overemphasis on participant knowledge acquisition and satisfaction in current research and an underemphasis on how new knowledge translates into practice. - Dedicated implementation plans and strategies are needed to successfully apply knowledge to settings. Knowledge users benefit from reminders, reinforcements, and guidance to incorporate knowledge into practice. Moreover, knowledge of user involvement (e.g. front-line staff, patient partners, and administrators) in the implementation process is critical. - Reporting of implementation domains is inconsistent across the literature. There is a need to standardize and conceptualize available implementation and mobilization research outcomes. Consistent use of terminology and explicit definitions of implementation domain outcomes are vital to improving KT reporting. Emphasizing domain consistency in future KT studies can allow for greater outcome analysis and better highlight areas of success and improvement.
Limitations and other comments	
Limitations quoted by the authors	- Most programs were not fully accessible to the public. This limited the extent to which program components could be assessed. - Due to the nature of KT programs, blinding of participants and/or patients to study conditions was unlikely across all designs. - Reporting of measurement reliability was lacking in both randomized and nonrandomized studies. - Selective outcome reporting was a concern in 33 studies. - Bias in qualitative research was present, but not to a high degree - Patient and clinical outcomes were inconsistently reported in HCP-directed KT programs. This made it difficult to determine whether KT efforts improved patient care, pain assessment frequency, and approaches to pain management - The variability in KT articles reviewed created challenges in identifying articles to include in this review. - Comparing and contrasting improvements incited by KT initiatives was difficult given the limited number of studies reporting clinical and patient outcomes and lacked clarity in the descriptions of assessments of KT outcomes. - No ability to access some KT programs thoroughly because their content and materials were not publicly available. - The variability in primary clinical and self-management topics also hindered potential comparisons between study results. - Current risk of bias metrics are not well suited for KT research, which typically involves less methodological control to meet target outcomes.
Other limitations	No grey literature, no hand searching.



	• All kind of pain (cancer, end-of-life, stroke care, wound care...). • Only articles published in English. • No robustness analysis. • Not specifically multimodal.
<i>KCE Q.A.</i>	Moderate risk of bias



1.5.37 Evidence table – Yarycky 2024 Patients

Yarycky 2024 ³⁶	
Objective	
Clearly mentioned	To formally examine the existing literature related to older adult pain management knowledge transfer (KT) and evaluate the outcomes of mobilization and implementation research efforts: focus on initiatives targeting patients. Specific objectives were as follows: • Investigate the characteristics of pain-related knowledge translation (KT) programs directed to older adults. • Identify the primary KT study outcomes and determine whether these outcomes are achieved. • Determine whether the study outcomes correspond to the proposed standards of mobilization and implementation research. • Make recommendations for future directions in mobilization and implementation of pain-related knowledge. Knowledge translation (KT) broadly describes activities designed to mobilize research knowledge directly to knowledge users. Older adults with pain could potentially receive information through various knowledge mobilization (KM) initiatives and/or participate in self-management programs. KT information tends to be tailored to the needs of a target group before its dissemination. Self-management efforts, in particular, go beyond dissemination by encouraging knowledge users to systematically incorporate skills into their daily lives
Methods	
Design	SR according to the PRISMA guidelines PROSPERO (CRD42022329319)
Source of funding and competing interest	This project was supported by the Saskatchewan Health Research Foundation - Saskatoon, Saskatchewan, Canada (#5085). The authors declare no conflict of interest.
Search dates	Inception – June 2023
Searched databases	Cumulative Index to Nursing and Allied Health Literature (CINAHL), MEDLINE, PsycInfo, and Web of Science databases
Eligibility criteria	Population: • Older adults: mean or median age of 65+ y or a clear indication of “older” adult where no mean age was provided • HCPs, caregivers and other knowledge users Disease: Pain (no restriction based on pain type or conditions) Interventions: • Evaluation of and focus on KT was a major study component



	• Mobilization or implementation outcomes (1 of the domain outlined by Proctor et al or knowledge changes after an education program) • Hospital protocols with a prominent training or education component for HCPs. • Telehealth initiatives only if telehealth technology was used to disseminate standardized information to groups of knowledge users. Publication format: Publications in peer-reviewed journal Language: English NB Programs were considered to be evidence-based if the program development, as indicated in the paper, was informed by previous research or included previously investigated components and tools
Exclusion criteria	Intervention: • Initiatives with primary cognitive-behavioral or exercise intervention were excluded when the program was led by an intervenor (as these were classified as therapeutic interventions in cognitive- behavioral, physical, or exercise therapy). • Telehealth initiatives used for patient consultation purposes. • Studies involving cognitive- behavioral methods and involving an intervenor/therapist because they were considered to constitute cognitive-behavioral therapy rather than self-management per se.
Q.A. used	• Cochrane Risk of bias Revised tool to assess randomized trials (ROB-2; ROBINS-I). • Risk of Bias in Nonrandomized Studies—interventions tool ROBINS-I. • CASP for qualitative studies and qualitative aspects of mixed-method investigations.
(Statistical) analysis	• For implementation, Proctor et al domains ;
Description of the included studies	
Number of included studies	49 studies • Two-thirds of studies included were identified as KM studies. • The remaining were classified as self-management programs (i.e. if they did not involve an intervenor, were modular with patients progressing through modules over time, and with patient outcomes as the primary focus of research.
Design of included study	For knowledge mobilisation: 16 RCTs, 15 non RCTs, and 1 qualitative. For self-management: 5 RCTs, 10 non RCTs and 2 mixed method
Covered years	1997-2023



Countries	Not directly mentioned.
Patient & disease characteristics	• Health conditions and pain concerns (68%) of all studies. Pain and recovery from injury and surgical procedures were also targeted (30%). • Primary self-management topics were musculoskeletal (57%), postoperative procedure (31%) and cancer (10%).
Interventions	• Most initiatives were multidisciplinary in nature • Over two-thirds of studies targeted health conditions and pain concerns. • Procedural pain topics were targeted in 24% of studies. • Multiformat deliveries were used in most initiatives (e.g. lecture, booklet, and video); only 4 (8%) initiatives had a single delivery format. • Education sessions or training workshops were the most common delivery format.
Settings	• Hospitals or medical centres (37%) were the most common settings. • Additional settings included patient homes and community/senior centres (33%) • Not specified in five studies.
Results	
Summary of findings	• Knowledge acquisition outcomes are overrepresented in the current literature compared with behavioral outcomes changes. • Across all KM and self-management programs reviewed, outcome improvements were not consistently observed. Nonetheless, older adults report benefitting from the guidance provided in self-management programs when applying knowledge to practice. • Family caregivers or proxies of older adults in pain were never solely targeted in KT initiatives. This is a notable gap in the literature. • Future research is needed to better understand the facilitators and barriers to pain management changes in this population.
Interventions impact	KM programs • Knowledge changes were rarely a focus in KM programs for older adults. Knowledge increases were assessed in 2 studies; only 1 study reported significant improvements in pain knowledge scores after education. • Pain attitudes and beliefs were measured in 3 initiatives. In all cases, evidence for improvements was reported. • Patient outcomes were measured in twenty-three studies for older adults. These outcomes included pain intensity, mobility, health-related quality of life (QOL), length of hospital stay, anxiety, and self-efficacy scores. Significant improvements in all patient outcomes measured were only reported in 7 (30%) programs. These studies varied both by target groups and delivery formats. Current evidence about changes in patient outcomes after KM programs is inconsistent.



- Program fit was considered in 10 studies for older adults. Over half (n = 6, 60%) of studies measuring program fit met all knowledge and management needs of participants as indicated in each study. For example, a mobile app for chronic lower back pain patients was considered easy to navigate, but the information was deemed too simple, prompting requests for another version of the app to be developed for more advanced learners.
- Satisfaction with education content and delivery was measured in 12 initiatives. High satisfaction was reported in 10 (83%) studies. Education was viewed as engaging, believable, and helpful. Participants reported satisfaction with suggested nonpharmacological strategies and information disseminated in programs.
- Nonpharmacological pain management changes were measured in 5 KM studies for older adults. Three (33%) studies reported significant changes after participation in the KM program.

Self-management programs

- Significant improvements in pain related knowledge after participation in the initiative were reported in all 5 studies measuring this outcome.
- One self-management study measured changes in pain beliefs. Patients with knee OA reported changed attitudes towards living with OA and managing their well-being after an email-delivered education initiative.
- Of the 15 self-management programs that considered patient outcomes, significant improvements were reported in 11 (74%) studies. Pain intensity, distress from pain, and QOL were most commonly measured across studies.
- Program fit was considered in 7 self-management initiatives. Three studies showed significant improvements in all outcomes measured, whereas 4 showed improvements in some, but not all outcomes.
- Satisfaction was measured in 7 self-management programs. In all cases, a high degree of satisfaction was reported after engagement in the program. Education was considered motivating and valuable.
- Eight self-management studies reported changes in the nature of pain management. Most studies reported significant increases in nonpharmacological (e.g., hot/cold therapy, distraction techniques, and massage).

Adherence to additional interventions

- Attendance was recorded in 7 older adult-directed initiatives. Session attendance was recorded by program educators across the studies identified. Overall session attendance was high; rates ranged from 82.5% to 95%.

Authors recommendations

- Future KT studies directed towards older adults should incorporate evaluation of changes in patient outcomes after participation in initiatives. Past research focused on knowledge acquisition and satisfaction but did not shed sufficient light as to whether this translated into symptomatic/QOL improvement.
- Self-management studies were generally more successful in improving patient outcomes and behavioral changes than KM initiatives without a self-management component. The discipline should direct efforts to increase the availability of self-management approaches to older adults and incorporate self-management strategies alongside information dissemination efforts.



	• KT research outcomes are not consistently defined or reported across the literature. Future research would benefit from standardizing mobilization and self-management outcomes. Consistent use of terminology and explicit definitions of dissemination outcomes are vital to improving KT reporting. • Family caregivers and proxies are often considered secondary or not considered at all in older adult pain • KT initiatives. In their future work, researchers should consider disseminating pain education to family caregivers and proxies of older adult patients or residents, particularly in the case of patients with dementia and frailty who may rely on family for their care.
Limitations and other comments	
Limitations quoted by the authors	• Most programs were not fully accessible to the public. This limited the extent to which program components could be assessed. Only 2 programs had all components publicly accessible (e.g. websites, online materials, or booklets). • Moderate or high bias rating was present in at least 1 RoB domain in most cases (n=43) • Incomplete or insufficiently reported data (e.g. missing data about participant intervention status) were concerns in most (n = 20) non randomized studies. • The nature of KT programs made the blinding of participants and/or patients to study conditions unlikely across all designs. • Measurement reliability was not consistently reported in both randomized and non randomized studies. • Selective outcome reporting was a concern in 34 studies. • The wide variety of clinical and self-management topics also hindered potential comparisons across studies.
Other limitations	• No grey literature, no hand searching. • All kind of pain (cancer, end-of-life, stroke care, wound care...). • Only articles published in English. • No robustness analysis. • Not specifically multimodal.
KCE Q.A.	

1.5.38 Evidence table – Ziegler 2022

Ziegler 2022²⁶	
Objective	
Clearly mentioned	- To identify, organize, and report characteristics of chronic musculoskeletal pain education programs for adults from an instructional design perspective; - To identify opportunities for additional research designed to address current knowledge gaps; and - To recommend future reporting, implementation, and research directions for pain education.
Methods	
Design	Scoping review
Source of funding and competing interest	No funding from agencies in the public, commercial, or not-for-profit sectors. Dr. Ziegler reports funding from the NCMIC foundation and grant support from NIH/NCCIH. Dr. Vining reports grant support from NIH/ NCCIH. No funding agency was involved data collection, data analysis, data interpretation, or manuscript writing.
Search dates	from inception to 16 February 2021
Searched databases	PubMed, Medline, and CINAHL
Eligibility criteria	Population: Adult patients Disease: Chronic neuromusculoskeletal pain Intervention: Pain education programs Design: Primary studies, clinical guidelines, reviews for and were published Language: English.
Exclusion criteria	Population: Addressing pain knowledge or attitudes in non-patient populations, health professional students Disease: Non-neuromusculoskeletal and paediatric pain Design: Case reports, case series, other retrospective studies, literature reviews reporting on the clinical effectiveness of pain education Publication format: Articles and non-peer-reviewed literature (e.g., books)
Q.A. used	No quality assessment performed (scoping review)
(Statistical) analysis	Narrative reporting



<i>Description of the included studies</i>	
Number of included studies	40 (only 6 reported barriers and facilitators to pain education as seen by patients)
Design of included study	No reported
Covered years	2002-2020 (for 6 studies reported barriers and facilitators)
Countries	UK, New-Zeeland, The Netherlands (info missing for one study):
Patient & disease characteristics	Lumbar radiculopathy, chronic low back pain, chronic musculoskeletal pain, rotator-cuff related pain (info missing for one study)
Interventions	Not reported for the 6 studies on barriers and facilitators
Involved professionals	Not reported for the 6 studies on barriers and facilitators
Settings	Pain clinic (4 Studies) not reported for others
<i>Results</i>	
Summary of findings	Effectiveness of pain education is enhanced when all aspects of the learning environment are skilfully considered, constructed, and individually applied.
Barriers	- Firmly held traditional beliefs about pain, - Using unrelatable content, - Conducting as a singular event rather than a process, - Introducing too many new concepts at once, - Using providers who cannot answer questions, - Using inconsistent messages, - Confronting one's negative cognitions, behaviors, and emotions
Enablers	- Communicating personally relevant information, - Conducting multiple sessions, - Using understandable metaphors, - Achieving a positive interpersonal connection with health professionals.



<i>Clinical implications</i>	The authors recommend thinking of pain education as a set of interventions designed to impart beneficial therapeutic effects but they recognise that such interventions can also be ineffective, confronting, inadvertently contribute to reinforcing errant pain beliefs, and cause adverse events (e.g., emotional distress). Pain education can be led by skilled or unskilled persons with, or without, a well-constructed learning environment that includes personally relevant and appropriate language, examples, images, and activities that support both conceptual and applied learning.
<i>Authors recommendations</i>	• Systematic reporting is needed using a more robust and systematic reporting process (e.g. . Template for Intervention Description and Replication (TIDieR) checklist • Pain education should be reconceptualized as a multiphase process
<i>Limitations and other comments</i>	
<i>Limitations quoted by the authors</i>	• Only articles published in English (potential language bias). • No grey literature search (potential publication bias) • Heterogeneity of included studies
<i>Other limitations</i>	• No quality assessment performed (scoping review) • No sensitivity analysis • Risk of bias from primary studies not taken into account in the analysis
<i>KCE Q.A.</i>	High risk of bias



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