APPENDIX A. SEARCH STRATEGIES

Database: MEDLINE (via Ovid MEDLINE ALL 1946 to July 26, 2021)
Search date: 7/27/2021

Search Set	Search Strategy	Results
#1	(osteoarthritis/ AND (knee* OR hip* OR patella*).ti,ab.) OR exp Osteoarthritis, Hip/ or exp Osteoarthritis, Knee/ OR ((knee OR knees OR patella* OR hip OR hips) AND (osteoarthritis OR osteoarthritic OR arthrosis OR arthroses OR OA OR coxarthorsis OR coxarthroses)).ti,ab. OR ((knee* OR patella* OR hip OR hips) AND degenerative AND (arthritis OR arthritic OR joint OR joints)).ti,ab.	55,259
#2	exp low back pain/ OR exp sciatica/ OR (lumbago OR sciatica).ti,ab.	30,239
#3	((back or low?back or spine or spinal or thoracic or vertebr* or intervertebr* or sciatic* or lumbar or lumbro* or lumbo*) adj3 (pain* or ache* or radiculopath* or polyradiculopath* or compress*)).ti,ab.	80,218
#4	(low or lower or lowback or sciatic* or ischia* or lumbo* or lumba* or sacroili* OR sacral).ti,ab.	4,298,601
#5	3 AND 4	52,655
#6	1 OR 2 OR 5	117,475
#7	(exp Rehabilitation/ AND physical.ti,ab.) OR exp Exercise/ OR exp Exercise Therapy/ OR exp Physical Fitness/ OR exp Physical Conditioning, Human/ OR exp Circuit-Based Exercise/ OR exp Endurance Training/ OR exp High-Intensity Interval Training/ OR exp Plyometric Exercise/ OR exp Resistance Training/ OR exp Physical Therapy Modalities/ OR exp Exercise Movement Techniques/ OR exp Tai Ji/ OR exp Yoga/ OR exp Hydrotherapy/ OR exp Musculoskeletal Manipulations/ OR exp Cognitive Behavioral Therapy/ OR exp "Acceptance and Commitment Therapy"/ OR exp Mindfulness/ OR exp Meditation/ OR exp Motivational Interviewing/ OR exp Wearable Electronic Devices/ OR exp Fitness Trackers/ OR exp Reminder Systems/ OR exp Peer Group/ OR exp Peer Influence/ OR exp Social Support/ OR exp Mentoring/ OR exp Text Messaging/ OR exp Mobile Applications/ OR (Physical ADJ rehab*).ti,ab. OR (Physical ADJ telerehab*).ti,ab. OR (Physical ADJ activit*).ti,ab. OR (Movement OR exercis* OR sport OR sports OR athletics OR athletic OR yoga OR pilates OR "Tai chi" OR "Tai ji" OR fitness OR plyometrics OR hydrotherapy OR "interval training" OR HIIT OR physiotherap* OR kinesiol* OR cycling OR spinning).ti,ab. OR ((circuit* OR strength* OR resistance* OR weight* OR aerobic* OR endurance) ADJ train*).ti,ab. OR (Physical ADJ therap*).ti,ab. OR ((musculoskeletal OR MSK) ADJ2 (therap* OR treat* OR therapeutic OR intervention* OR mobilization OR mobilisation)).ti,ab. OR ((behavior* OR behaviour* OR psychological OR mental) ADJ2 (therap* OR treat* OR therapeutic OR intervention* OR adaptation*)).ti,ab. OR CBT.ti,ab. OR ((acceptance OR commitment) ADJ2 (therap* OR treat* OR therapeutic OR intervention*)).ti,ab. OR (Motivation* ADJ2 interview*).ti,ab. OR (biopsychosocial OR bio?psycho?social OR counselling OR mindfulness OR meditation OR "Peer-to-peer").ti,ab. OR ((peer OR peers OR social OR caregiver*) ADJ support*).ti,ab. OR (coach* OR mentor* OR counsel* OR boost* OR wearable* OR "fitness tracker" OR "fitness tracker" OR "activity tracker" OR "activity trackers" OR fitbit OR "apple watch").ti,ab. OR (reminder* ADJ2 (system* OR messag* OR text* OR mail OR telephone OR phone)).ti,ab. OR (automated ADJ (messag* OR text* OR mail OR	1,498,833

Search Set	Search Strategy	Results
	telephone OR phone)).ti,ab. OR (text?messag* OR email OR e?mail OR "electronic mail" OR "electronic message" OR "electronic messages").ti,ab. OR (performance ADJ feedback).ti,ab. OR (Remote ADJ monitor*).ti,ab. OR ("mobile application" OR "mobile applications" OR "mobile apps").ti,ab.	
#8	6 AND 7	24,101
#9	exp Patient Compliance/ OR exp Medication Adherence/ OR exp Patient Participation/ OR "Patient Acceptance of Health Care"/ OR Treatment Refusal/ OR exp Motivation/ OR exp Self Efficacy/ OR exp Problem Solving/ OR exp Decision Making/ OR exp Choice Behavior/ OR (Adhere* OR adhering OR Complian* OR complying OR Cooperat*).ti,ab. OR ((change OR changes OR changing OR modify OR modifies OR modifying OR modification) ADJ (behavior* OR behaviour*)).ti,ab. OR (Motivat* OR incentiv* OR disincentiv* OR perceiv* OR perception* OR belief*).ti,ab. OR (Self ADJ efficacy).ti,ab. OR Self-efficacy.ti,ab. OR (Self ADJ monitoring).ti,ab. OR Self-monitoring.ti,ab. OR (Self ADJ talk).ti,ab. OR (Self-talk OR Attitude* OR Empower*).ti,ab. OR ((treat* OR therapy OR therapeutic) ADJ refus*).ti,ab. OR ((goal OR goals) ADJ setting).ti,ab. OR Goal-setting.ti,ab. OR (Action ADJ plan*).ti,ab. OR (Non?complian* OR Non?adheren* OR Attendance OR Non?attend* OR Encourag*).ti,ab. OR (patient ADJ3 participation).ti,ab.	1,818,940
#10	8 AND 9	4,193
#11	randomized controlled trial.pt. OR controlled clinical trial.pt. OR clinical trial.pt. OR randomized.ti,ab. OR randomised.ti,ab. OR randomization.ti,ab. OR randomisation.ti,ab. OR placebo.ti,ab. OR randomly.ti,ab. OR trial.ti,ab. OR groups.ti,ab. OR nonrandom.ti,ab. OR "non-random".ti,ab. OR nonrandomized.ti,ab. OR "nonrandomized".ti,ab. OR nonrandomised.ti,ab. OR "non-randomised".ti,ab. OR quasi-experiment*.ti,ab. OR quazi-experiment*.ti,ab. OR quasiexperiment*.ti,ab. OR quaziexperiment*.ti,ab. OR quasirandom*.ti,ab. OR quazirandom*.ti,ab. OR quasi-random*.ti,ab. OR quazi-random*.ti,ab. OR quasi-control*.ti,ab. OR quazi-control*.ti,ab. OR quasicontrol*.ti,ab. OR quazicontrol*.ti,ab. OR ((controlled.ti,ab.) AND (trial.ti,ab. OR study.ti,ab.))	3,640,469
#12	10 AND 11	2,145
#13	12 NOT (exp animals/ not exp humans/)	2,140
#14	13 NOT (case reports.pt OR editorial.pt OR letter.pt OR comment.pt)	2,119

Database: Embase (via Elsevier)

Search date: 7/27/2021

Search Set	Search Strategy	Results
#1	'knee osteoarthritis'/exp OR 'hip osteoarthritis'/exp OR ((knee OR knees OR patella* OR hip OR hips) AND (osteoarthritis OR osteoarthritic OR arthrosis OR arthroses OR OA OR coxarthorsis OR coxarthroses)):ti,ab OR ((knee* OR patella* OR hip OR hips) AND degenerative AND (arthritis OR arthritic OR joint OR joints)):ti,ab	79,989
#2	'low back pain'/exp OR 'sciatica'/exp OR (lumbago OR sciatica):ti,ab	70,044

Search Set	Search Strategy	Results
#3	((back or low?back or spine or spinal or thoracic or vertebr* or intervertebr* or sciatic* or lumbar or lumbro* or lumbo*) NEAR/3 (pain* or ache* or radiculopath* or polyradiculopath* or compress*)):ti,ab	117,457
#4	(low or lower or lowback or sciatic* or ischia* or lumbo* or lumba* or sacroili* OR sacral):ti,ab	5,793,899
#5	#3 AND #4	77,207
#6	#1 OR# 2 OR #5	183,162
#7	('rehabilitation'/exp AND physical:ti,ab) OR 'exercise'/exp OR 'kinesiotherapy'/exp OR 'fitness'/exp OR 'physiotherapy'/exp OR 'Tai Chi'/exp OR 'yoga'/exp OR 'hydrotherapy'/exp OR 'musculoskeletal manipulation'/exp OR 'cognitive behavioral therapy'/exp OR 'acceptance and commitment therapy'/exp OR 'mindfulness'/exp OR 'meditation'/exp OR 'motivational interviewing'/exp OR 'wearable computer'/exp OR 'activity tracker'/exp OR 'reminder system'/exp OR 'peer group'/exp OR 'peer pressure'/exp OR 'social support'/exp OR 'mentoring'/exp OR 'text messaging'/exp OR 'mobile application'/exp OR (Physical NEAR/1 rehab*):ti,ab OR (Physical NEAR/1 telerehab*):ti,ab OR (Physical NEAR/1 activit*):ti,ab OR (Movement OR exercis* OR sport OR sports OR athletics OR athletic OR yoga OR pilates OR 'Tai chi' OR 'Tai ji' OR fitness OR plyometrics OR hydrotherapy OR 'interval training' OR HIIT OR physiotherap* OR kinesiol* OR cycling OR spinning):ti,ab OR ((circuit* OR strength* OR resistance* OR weight* OR aerobic* OR endurance) NEAR/1 train*):ti,ab OR (Physical NEAR/1 therap*):ti,ab OR ((musculoskeletal OR MSK) NEAR/2 (therap* OR treat* OR therapeutic OR intervention* OR mobilization OR mobilisation)):ti,ab OR ((behavior* OR behaviour* OR psychological OR mental) NEAR/2 (therap* OR treat* OR therapeutic OR intervention* OR adaptation*)):ti,ab OR CBT:ti,ab OR ((acceptance OR commitment) NEAR/2 (therap* OR treat* OR therapeutic OR intervention*)):ti,ab OR (Motivation* NEAR/2 interview*):ti,ab OR (biopsychosocial OR bio?psycho?social OR counselling OR mindfulness OR meditation OR 'Peer-to-peer'):ti,ab OR ((peer OR peers OR social OR caregiver*) NEAR/1 support*):ti,ab OR (coach* OR mentor* OR counsel* OR boost* OR wearable* OR 'fitness tracker' OR 'fitness tracker' OR 'activity tracker' OR 'activity trackers' OR fitbit OR 'apple watch'):ti,ab OR (reminder* NEAR/2 (system* OR messag* OR text* OR mail OR telephone OR phone)):ti,ab OR (automated NEAR/1 (messag* OR text* OR mail OR telephone OR phone)):ti,ab OR (text?messag* OR email OR e?mail OR 'electronic mail' OR 'electronic message' OR 'electronic messages'):ti,ab OR (performance NEAR/1 feedback):ti,ab OR (Remote NEAR/1 monitor*):ti,ab OR ('mobile application' OR 'mobile applications' OR 'mobile apps'):ti,ab	1,937,779
#8	#6 AND #7	37,245
#9	'patient compliance'/exp OR 'medication compliance'/exp OR 'patient participation'/exp OR 'patient attitude'/exp OR 'treatment refusal'/exp OR 'motivation'/exp OR 'self concept'/exp OR 'problem solving'/exp OR 'decision making'/exp OR (Adhere* OR adhering OR Complian* OR complying OR Cooperat*):ti,ab OR ((change OR changes OR changing OR modify OR modifies OR modifying OR modification) NEAR/1 (behavior* OR behaviour*)):ti,ab OR (Motivat* OR incentiv* OR disincentiv* OR perceiv* OR perception* OR belief*):ti,ab OR (Self NEAR/1 efficacy):ti,ab OR Self-	2,749,149

Search Set	Search Strategy	Results
	efficacy:ti,ab OR (Self NEAR/1 monitoring):ti,ab OR Self-monitoring:ti,ab OR (Self NEAR/1 talk):ti,ab OR (Self-talk OR Attitude* OR Empower*):ti,ab OR ((treat* OR therapy OR therapeutic) NEAR/1 refus*):ti,ab OR ((goal OR goals) NEAR/1 setting):ti,ab OR Goal-setting:ti,ab OR (Action NEAR/1 plan*):ti,ab OR (Non?complian* OR Non?adheren* OR Attendance OR Non?attend* OR Encourag*):ti,ab OR (patient NEAR/3 participation):ti,ab	
#10	#8 AND #9	8,078
#11	'crossover procedure'/exp OR 'randomized controlled trial'/exp OR 'controlled clinical trial'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure':de OR 'double-blind procedure':de OR 'randomized controlled trial':de OR 'single-blind procedure':de OR (random* OR factorial* OR crossover* OR cross NEXT/1 over* OR placebo* OR doubl* NEAR/1 blind* OR singl* NEAR/1 blind* OR assign* OR allocat* OR volunteer*):ti,ab OR placebo:ti,ab OR groups:ti,ab OR nonrandom:ti,ab OR non?random:ti,ab OR nonrandomized:ti,ab OR non?randomized:ti,ab OR nonrandomised:ti,ab OR non?randomised:ti,ab OR quasi?experiment*:ti,ab OR quazi?experiment*:ti,ab OR quasiexperiment*:ti,ab OR quaziexperiment*:ti,ab OR quasirandom*:ti,ab OR quazirandom*:ti,ab OR quasi?random*:ti,ab OR quazi?random*:ti,ab OR quasi?control*:ti,ab OR quazi?control*:ti,ab OR quasicontrol*:ti,ab OR quazicontrol*:ti,ab OR ((controlled:ti,ab) AND (trial:ti,ab OR study:ti,ab))	5,425,748
#12	#10 AND #11	3,771
#13	#12 AND [humans]/lim	3,676
#14	#13 NOT ('case report'/exp OR 'case study'/exp OR 'editorial'/exp OR [editorial]/lim OR 'letter'/exp OR [letter]/lim OR 'note'/exp OR [note]/lim OR [conference abstract]/lim OR 'conference abstract'/exp OR 'conference abstract'/it)	2,655

Database: CINAHL Complete (via EBSCO)

Search date: 7/27/2021

Search Set	Search Strategy	Results
#1	((MH osteoarthritis) AND ((TI knee* OR AB knee*) OR (TI hip* OR AB hip*) OR (TI patella* OR AB patella*))) OR (MH "Osteoarthritis, Hip") OR (MH "Osteoarthritis, Knee") OR (((TI knee OR AB knee) OR (TI knees OR AB knees) OR (TI patella* OR AB patella*) OR (TI hip OR AB hip) OR (TI hips OR AB hips)) AND ((TI osteoarthritis OR AB osteoarthritis) OR (TI osteoarthritic OR AB osteoarthritic) OR (TI arthrosis OR AB arthrosis) OR (TI arthroses OR AB arthroses) OR (TI OA OR AB OA) OR (TI coxarthorsis OR AB coxarthorsis) OR (TI coxarthroses OR AB coxarthroses))) OR (((TI knee* OR AB knee*) OR (TI patella* OR AB patella*) OR (TI hip OR AB hip) OR (TI hips OR AB hips)) AND (TI degenerative OR AB degenerative) AND ((TI arthritis OR AB arthritis) OR (TI arthritic OR AB arthritic) OR (TI joint OR AB joint) OR (TI joints OR AB joints)))	26,315
#2	(MH "Low Back Pain") OR (MH "sciatica") OR ((TI lumbago OR AB lumbago) OR (TI sciatica OR AB sciatica))	22,894

Search Set	Search Strategy	Results
#3	(((TI back OR AB back) OR (TI low#back OR AB low#back) OR (TI spine OR AB spine) OR (TI spinal OR AB spinal) OR (TI thoracic OR AB thoracic) OR (TI vertebr* OR AB vertebr*) OR (TI intervertebr* OR AB intervertebr*) OR (TI sciatic* OR AB sciatic*) OR (TI lumbar OR AB lumbar) OR (TI lumbro* OR AB lumbro*) OR (TI lumbo* OR AB lumbo*)) N3 ((TI pain* OR AB pain*) OR (TI ache* OR AB ache*) OR (TI radiculopath* OR AB radiculopath*) OR (TI polyradiculopath* OR AB polyradiculopath*) OR (TI compress* OR AB compress*)))	39,563
#4	((TI low OR AB low) OR (TI lower OR AB lower) OR (TI lowback OR AB lowback) OR (TI sciatic* OR AB sciatic*) OR (TI ischia* OR AB ischia*) OR (TI lumbo* OR AB lumbo*) OR (TI lumba* OR AB lumba*) OR (TI sacroili* OR AB sacroili*) OR (TI sacral OR AB sacral))	760,111
#5	S3 AND S4	27,382
#6	S1 OR S2 OR S5	60,510
#7	((MH "Rehabilitation+") AND (TI physical OR AB physical)) OR (MH "Exercise+") OR (MH "Therapeutic Exercise+" OR (MH "Physical Fitness+") OR (MH "Physical Therapy+") OR (MH "Resistance Training") OR (MH "Yoga+") OR (MH "Tai Chi") OR (MH "Meditation") OR (MH "Mental Healing") OR (MH "Hydrotherapy") OR (MH "Applied Kinesiology") OR (MH "Manual Therapy") OR (MH "Cognitive Therapy+") OR (MH "Acceptance and Commitment Therapy") OR (MH "Mindfulness") OR (MH "Motivational Interviewing") OR (MH "Wearable Sensors+") OR (MH "Fitness Trackers") OR (MH "Reminder Systems") OR (MH "Peer Group") OR (MH "Peer Pressure") OR (MH "Support, Psychosocial") OR (MH "Mentorship") OR (MH "Text Messaging+") OR (MH "Mobile Applications") OR ((TI Physical OR AB Physical) W1 (TI rehab* OR AB rehab*)) OR ((TI Physical OR AB Physical) W1 (TI telerehab* OR AB telerehab*)) OR ((TI Physical OR AB Physical) W1 (TI activit* OR AB activit*)) OR ((TI Movement OR AB Movement) OR (TI exercis* OR AB exercis*) OR (TI sport OR AB sport) OR (TI sports OR AB sports) OR (TI athletics OR AB athletics) OR (TI athletic OR AB athletic) OR (TI yoga OR AB yoga) OR (TI pilates OR AB pilates) OR (TI "Tai chi" OR AB "Tai chi") OR (TI "Tai ji" OR AB "Tai ji") OR (TI fitness OR AB fitness) OR (TI plyometrics OR AB plyometrics) OR (TI hydrotherapy OR AB hydrotherapy) OR (TI "interval training" OR AB "interval training") OR (TI HIIT OR AB HIIT) OR (TI physiotherap* OR AB physiotherap*) OR (TI kinesiol* OR AB kinesiol*) OR (TI cycling OR AB cycling) OR (TI spinning OR AB spinning)) OR (((TI circuit* OR AB circuit*) OR (TI strength* OR AB strength*) OR (TI resistance* OR AB resistance*) OR (TI weight* OR AB weight*) OR (TI aerobic* OR AB aerobic*) OR (TI endurance OR AB endurance)) W1 (TI train* OR AB train*)) OR ((TI Physical OR AB Physical) W1 (TI therap* OR AB therap*)) OR (((TI musculoskeletal OR AB musculoskeletal) OR (TI MSK OR AB MSK)) N2 ((TI therap* OR AB therap*) OR (TI treat* OR AB treat*) OR (TI therapeutic OR AB therapeutic) OR (TI intervention* OR AB intervention*) OR (TI mobilization OR AB mobilization) OR (TI mobilisation OR AB mobilisation))) OR (((TI behavior* OR AB behavior*) OR (TI behaviour* OR AB behaviour*) OR (TI psychological OR AB psychological) OR (TI mental OR AB mental)) N2 ((TI therap* OR AB therap*) OR (TI treat* OR AB treat*) OR (TI therapeutic OR AB therapeutic) OR (TI intervention* OR AB intervention*) OR (TI adaptation* OR AB adaptation*))) OR (TI CBT OR AB CBT) OR (((TI acceptance OR AB acceptance) OR (TI commitment OR AB commitment)) N2 ((TI therap* OR AB therap*) OR (TI treat* OR AB treat*) OR (TI therapeutic OR AB therapeutic) OR (TI intervention* OR AB intervention*)))	773,686

Search Set	Search Strategy	Results
	OR ((TI Motivation* OR AB Motivation*) N2 (TI interview* OR AB interview*)) OR ((TI biopsychosocial OR AB biopsychosocial) OR (TI bio#psycho#social OR AB bio#psycho#social) OR (TI counselling OR AB counselling) OR (TI mindfulness OR AB mindfulness) OR (TI meditation OR AB meditation) OR (TI Peer-to-peer OR AB Peer-to-peer)) OR (((TI peer OR AB peer) OR (TI peers OR AB peers) OR (TI social OR AB social) OR (TI caregiver* OR AB caregiver*)) W1 (TI support* OR AB support*)) OR ((TI coach* OR AB coach*) OR (TI mentor* OR AB mentor*) OR (TI counsel* OR AB counsel*) OR (TI boost* OR AB boost*) OR (TI wearable* OR AB wearable*) OR (TI "fitness tracker" OR AB "fitness tracker") OR (TI "fitness tracker" OR AB "fitness tracker") OR (TI "activity tracker" OR AB "activity tracker") OR (TI "activity trackers" OR AB "activity trackers") OR (TI fitbit OR AB fitbit) OR (TI "apple watch" OR AB "apple watch")) OR ((TI reminder* OR AB reminder*) N2 ((TI system* OR AB system*) OR (TI messag* OR AB messag*) OR (TI text* OR AB text*) OR (TI mail OR AB mail) OR (TI telephone OR AB telephone) OR (TI phone OR AB phone))) OR ((TI automated OR AB automated) W1 ((TI messag* OR AB messag*) OR (TI text* OR AB text*) OR (TI mail OR AB mail) OR (TI telephone OR AB telephone) OR (TI phone OR AB phone))) OR ((TI text#messag* OR AB text#messag*) OR (TI email OR AB email) OR (TI e#mail OR AB e#mail) OR (TI "electronic mail" OR AB "electronic mail") OR (TI "electronic message" OR AB "electronic message") OR (TI "electronic messages" OR AB "electronic messages")) OR ((TI performance OR AB performance) W1 (TI feedback OR AB feedback)) OR ((TI Remote OR AB Remote) W1 (TI monitor* OR AB monitor*)) OR ((TI "mobile application" OR AB "mobile application") OR (TI "mobile applications" OR AB "mobile applications") OR (TI "mobile apps" OR AB "mobile apps"))	
#8	S6 AND S7	17,992
#9	(MH "Patient Compliance+") OR (MH "Medication Compliance") OR (MH "Consumer Participation") OR (MH "Treatment Refusal") OR (MH "Motivation+") OR (MH "Self Efficacy") OR (MH "Problem Solving+") OR (MH "Decision Making+") OR ((TI Adhere* OR AB Adhere*) OR (TI adhering OR AB adhering) OR (TI Complian* OR AB Complian*) OR (TI complying OR AB complying) OR (TI Cooperat* OR AB Cooperat*)) OR (((TI change OR AB change) OR (TI changes OR AB changes) OR (TI changing OR AB changing) OR (TI modify OR AB modify) OR (TI modifies OR AB modifies) OR (TI modifying OR AB modifying) OR (TI modification OR AB modification)) W1 ((TI behavior* OR AB behavior*) OR (TI behaviour* OR AB behaviour*))) OR ((TI Motivat* OR AB Motivat*) OR (TI incentiv* OR AB incentiv*) OR (TI disincentiv* OR AB disincentiv*) OR (TI perceiv* OR AB perceiv*) OR (TI perception* OR AB perception*) OR (TI belief* OR AB belief*)) OR ((TI Self OR AB Self) W1 (TI efficacy OR AB efficacy)) OR (TI Self-efficacy OR AB Self-efficacy) OR ((TI Self OR AB Self) W1 (TI monitoring OR AB monitoring)) OR (TI Self-monitoring OR AB Self-monitoring) OR ((TI Self OR AB Self) W1 (TI talk OR AB talk)) OR ((TI Self-talk OR AB Self-talk) OR (TI Attitude* OR AB Attitude*) OR (TI Empower* OR AB Empower*)) OR (((TI treat* OR AB treat*) OR (TI therapy OR AB therapy) OR (TI therapeutic OR AB therapeutic)) W1 (TI refus* OR AB refus*)) OR (((TI goal OR AB goal) OR (TI goals OR AB goals)) W1 (TI setting OR AB setting)) OR (TI Goal-setting OR AB Goal-setting) OR ((TI Action OR AB Action) W1 (TI plan* OR AB plan*)) OR ((TI Non#complian* OR AB Non#complian*) OR (TI Non#adheren* OR AB Non#adheren*) OR (TI Attendance OR AB Attendance) OR (TI Non#attend* OR AB	792,963

Search Set	Search Strategy	Results
	Non#attend*) OR (TI Encourag* OR AB Encourag*)) OR ((TI patient OR AB patient) N3 (TI participation OR AB participation))	
#10	S8 AND S9	3,188
#11	(ZT "randomized controlled trial") OR (MH "Randomized Controlled Trials") OR TI ("randomized controlled trial" OR "controlled clinical trial" OR randomized OR randomised OR randomization OR randomisation OR placebo OR randomly OR trial OR trials OR groups OR "single blind" OR "single blinded" OR "double blind" OR "double-blinded OR nonrandom* OR non-random* OR quasiexperiment* OR quasi-experiment* OR quaziexperiment* OR quazi-experiment* OR quasirandom* OR quasi-random* OR quazirandom* OR quazi-random* OR quasicontrol* OR quasi-control* OR quazicontrol* OR quazi-control*) OR AB ("randomized controlled trial" OR "controlled clinical trial" OR randomized OR randomised OR randomization OR randomisation OR placebo OR randomly OR trial OR trials OR groups OR "single blind" OR "single blinded" OR "double blind" OR "double-blinded OR nonrandom* OR non-random* OR quasiexperiment* OR quasi-experiment* OR quaziexperiment* OR quazi-experiment* OR quasirandom* OR quasi-random* OR quazirandom* OR quazi-random* OR quasicontrol* OR quasi-control* OR quazicontrol* OR quazi-control*)	300,658
#12	S10 AND S11	758
#13	S12 NOT PT (Abstract OR Book OR Book Chapter OR Book Review OR Case Study OR Commentary OR Editorial OR Letter OR Masters Thesis OR Pamphlet OR Pamphlet Chapter OR Poetry)	738

APPENDIX B. STUDY CHARACTERISTICS

Study	Sample Size Condition Targeted	Population Mean Age Female % Race %	Index Rehabilitation Program Characteristics (Duration)	Adherence Adjunct Characteristics (Frequency, Duration)	Outcomes Assessed	Risk of Bias Funding Source Conflict Declared
Concurrently Delivered Adjunct Adherence Interventions						
Bennell, 2017[25]	N=168 Knee OA	Median age: 62.3 Women: 63% Race: NR	5 sessions focused on quad and hip strengthening (6 months)	Coaching, motivation, self-efficacy, and therapeutic alliance (6 telephone coaching sessions over 6 months with the option for 6 more for total of 12)	Adherence, Physical function, Adverse events	Low risk Supported by the National Health and Medical Research Council Primary author declared conflict
Pisters, 2010[26]	N=200 Hip OA, Knee OA	Median age: 65.0 Women: 77% Race: NR	Maximum of 18 individual usual care physical therapy sessions (3 months)	Eighteen sessions behavioral graded activity over 12 weeks + up to 7 booster sessions over the next year focused on patient functioning, addressing barriers, support, and integrating change into daily living	Adherence, Physical function	Some concerns None listed No conflicts declared

Study	Sample Size Condition Targeted	Population Mean Age Female % Race %	Index Rehabilitation Program Characteristics (Duration)	Adherence Adjunct Characteristics (Frequency, Duration)	Outcomes Assessed	Risk of Bias Funding Source Conflict Declared
Brosseau, 2012[18]	N=222 Knee OA	Median age: 63.4 Women: 68.9% Race: 89% White, 2.3% Black, 3.6% Hispanic, 4.5% Asian or Pacific Islander	Community-based supervised aerobic walking program. All provided with pedometers and log books to track physical activity. Three weekly sessions (12 months)	Twenty group sessions: short/long-term goal setting and instructional sessions about benefits of physical activity and in-person monthly sessions with moral support. Goal setting and telephone counselling were also provided. (32 sessions possible over 12 months)	Adherence, Self-efficacy	Patient reported: High Objective: Low Canadian Institute of Health Research (CIHR) No conflicts declared
Ben-Ami, 2017[19]	N=220 Low back pain	Median age: 42.0 Women: 54% Race: NR	Usual care physical therapy (3 months)	Enhanced transtheoretical model intervention: focused on motivation/self-efficacy, mutual decision-making about recreational aerobic activity; could offer up to 4 specific back exercises (1 initial evaluation, at least 2 follow-ups over an estimated 3 months)	Adherence, Physical function	Serious risk Maccabi Healthcare Services in Israel No conflicts declared
Lonsdale, 2017[24]	N= 255 Low back pain	Median age: 45.4 Women: 54% Race: NR	Usual care physical therapy (3 months)	Communication training for providers included self-determination theory, implementing communication strategies, simulated treatment sessions, role play, goal setting, group sessions and email follow-up (8 hours of training)	Adherence	High risk Health registration board of Ireland Author declared conflicts

Study	Sample Size Condition Targeted	Population Mean Age Female % Race %	Index Rehabilitation Program Characteristics (Duration)	Adherence Adjunct Characteristics (Frequency, Duration)	Outcomes Assessed	Risk of Bias Funding Source Conflict Declared
Friedrich, 1998[27] Companion: Friedrich 2005 [28]	N=93 Low back pain	Median age: 44.1 Women: 50% Race: NR	Rehabilitation consisted of a submaximal graded exercise program for 10 sessions (approximately 1 month)	Same exercise program as comparator + counseling covering: 1) information strategies including adherence, 2) reinforcement, 3) treatment contract, 4) placing treatment contract in prominent place, 5) exercise diary	Adherence, Physical function, Self-efficacy	High risk None listed No conflicts declared
Sequentially Delivered Adjunct Adherence Interventions						
Bennell, 2020[20]	N=110 Knee OA	Median age: 62.3 Women: 67% Race: NR	5 physical therapy sessions (3 months)	One-way text messages (5 messages weekly for 24 weeks)	Adherence, Physical function, Adverse events	Low risk National Health and Medical Research Council Program Grant First author declared conflicts
Quicke, 2017[22]	N=514 Knee OP	Median age: 62.8 Women: 51% Race: NR	Up to 4 one-on-one sessions with physical therapist (3 months)	Adherence toolkit: self-monitoring, diaries, and follow-up adherence sessions (8-10 contacts over 6 months)	Adherence, Physical function, Adverse events, Self-efficacy	Some concerns National Institute for Health Research No conflicts declared

Study	Sample Size Condition Targeted	Population Mean Age Female % Race %	Index Rehabilitation Program Characteristics (Duration)	Adherence Adjunct Characteristics (Frequency, Duration)	Outcomes Assessed	Risk of Bias Funding Source Conflict Declared
Baker, 2020[21]	N=104 Hip OA	Median age: 65.2 Women: 82% Race: 60% White	Tailored supervised strength training exercise program (1.5 months)	Computer-based telephone counseling with assessment of behavior, goal setting, lapsing information. Alerts to the study team when the participants experienced bad pain or an extended lapse in exercise. (Weekly call for first 6 months, then monthly for next 18 months)	Adherence, Physical function	High risk National Institute of Disability, Independent Living, and Rehabilitation No conflicts declared
Bennell, 2014[23]	N=78 Knee OA	Median age: 62.1 Women: 54% Race: NR	14 physical therapy visits over 12 weeks. 2 sessions in first week and then 1 session per week after. Patients completed a quad strengthening program or a neuromuscular exercise program (3 months)	Booster sessions (2 additional sessions over 24 weeks)	Adherence, Physical function, Adverse events	High risk Supported by the National Health and Medical Research Council No conflicts declared

Notes. Two studies reported adjunct components that both overlapped the rehabilitation intervention and continued sequentially after the rehabilitation ended.[22,26]
Abbreviations. OA=Osteoarthritis.

APPENDIX C. INTERVENTION CHARACTERISTICS

Study **Condition**	**Index Rehabilitation Program** **Duration**	**Adjunct Intervention Components** **Duration** **Fidelity**	**Intervention Timing** **Theory or Conceptual Approach**	**Type of Provider** **Mode**	**# BCTs Described**
Concurrently Delivered Adjunct Adherence Interventions					
Bennell, 2017[25] Knee OA	5 (30 minute) sessions over 6 months focused on quad and hip strengthening and prescription for evidence-based progressive individualized home exercise program : 6 months	Coaching, motivation, self-efficacy, and therapeutic alliance 6 months with the option for 6 more (for a total of 12) Most attended all 5 therapy sessions; 4.4 (SD 1.2) intervention vs 4.3 (SD 1.4) control; overall mean fidelity of coaches on calls 7.1 (SD 0.6) out of 10	Concurrent HealthChange (*ie*, motivational interviewing, cognitive behavioral therapy, and solution focused coaching)	Physical therapist, Nurse, Psychologist, Occupational therapist Telephone	Adjunct intervention group: 13 Control group: 11
Pisters, 2010[26] Knee/Hip OA	Maximum of 18 sessions (30 minute) individual sessions with physical therapist (intervention arm received behavioral exercise program vs usual PT care in comparator arm) 3 months	Behavioral exercise program with additional booster sessions focused on patient functioning, addressing barriers, support, and integrating change into daily living Additional 7 booster sessions over 5 weeks 17% deviated from trial protocol; intervention average 9.8 of 18 sessions (SD 3.5) vs 11.7 (SD 4.3) over 12 weeks	Concurrent Operant conditioning	Physiotherapists In-person	Adjunct intervention group: 12 Control group: 10

Study **Condition**	**Index Rehabilitation Program** **Duration**	**Adjunct Intervention Components** **Duration** **Fidelity**	**Intervention Timing** **Theory or Conceptual Approach**	**Type of Provider** **Mode**	**# BCTs Described**
Brosseau, 2012[18] Knee OA	Community-based supervised aerobic walking program. All provided with pedometers and log books to track physical activity. Three (65 minute) weekly sessions. 12 months	20 (2 hour) group sessions: short/long-term goal setting and instructional sessions about benefits of physical activity and in-person monthly sessions with moral support. Goal setting and telephone counselling were also provided. 32 sessions possible over 12 months NR	Concurrent Not reported	Not reported In-person and telephone	Adjunct intervention group: 9 Walking control group: 5
Ben-Ami, 2017[19] Chronic Low Back Pain	Usual care physical therapy 3 months	Counseling included minimum of 2 (20-30 minute) one-on-one sessions with no upper limit. Sessions focused on motivation/self-efficacy, mutual decision-making about recreational aerobic activity; could offer up to 4 specific back exercises One 40 min initial evaluation, at least two 1:1 20-30 min follow-ups 65% intervention group completed treatment vs 45% control group	Concurrent Transtheoretical model	Physical therapist In-person	Adjunct intervention group: 17 Control group: 9

Study **Condition**	**Index Rehabilitation Program** **Duration**	**Adjunct Intervention Components** **Duration** **Fidelity**	**Intervention Timing** **Theory or Conceptual Approach**	**Type of Provider** **Mode**	**# BCTs Described**
Lonsdale, 2017[24] Chronic Low Back Pain	Usual care physical therapy 3 months	Communication training for providers included self-determination theory, implementing communication strategies, simulated treatment sessions, role play, goal setting, group sessions and email follow-up Physical therapists received 8 hours of training Planned for use of blinded accelerometers but didn't use 2/2 participant burden; convenience sample of 24 patients to evaluate support provision – found large positive effect of training d = 2.27	Concurrent Self-determination theory	Physical therapist In-person	Adjunct intervention group: 12 Control group: 9
Friedrich, 1998[27] Companion: Friedrich 2005[28] Chronic Low Back Pain	Rehabilitation consisted of a submaximal graded exercise program for 10 (25 minute) sessions. 1 month	Counseling elements included 1) information, 2) reinforcement, 3) treatment contract, 4) placing treatment contract in prominent place, 5) exercise diary. 10 (25-minute) sessions over approximately 5 weeks Intervention arm: 81.8% treatment sessions vs 51% control	Concurrent Not reported	Physical therapist In-person	Adjunct intervention group: 18 Control group: 8

Study **Condition**	**Index Rehabilitation Program** **Duration**	**Adjunct Intervention Components** **Duration** **Fidelity**	**Intervention Timing** **Theory or Conceptual Approach**	**Type of Provider** **Mode**	**# BCTs Described**
Sequentially Delivered Adjunct Adherence Interventions					
Bennell, 2020[20] Knee OA	Five (30-40 minute) physical therapy sessions included non-weight-bearing exercise aimed at the quads and functional weight-bearing exercises aimed at hips and quads/hamstrings. 3 months	24 weeks of automated, semi-interactive text messages Up to 5 text messages weekly for 24 weeks 2 in intervention arm stopped SMS messages; mean messages 57.9 (9.1) total (total range 46-58); reply rate to self-reporting home sessions 66% (SD 34%)	Sequential COM-B (capability, opportunity, and motivation)	Physical therapist Test messages	Adjunct intervention group: 26 BCTs Control group: 11 BCTs
Quicke, 2017[22] Companion: Hay 2018[62] Knee OA	Up to 4 one-on-one sessions with physical therapist 3 months	Adherence toolkit: self-monitoring, diaries, and follow-up adherence sessions 8-10 contacts over 6 months 7.6% received no PT (6.9% control, 7.4% intervention group); control group had fewer sessions than intervention: median 3 (IQR 2-4) vs 7 (4-8); control received 89% in line with protocol vs 48% in intervention group	Sequential Self-efficacy and self-regulation theory	Physical therapist In-person and telephone	Adjunct intervention group:11 Control group: 7

Study **Condition**	**Index Rehabilitation Program** **Duration**	**Adjunct Intervention Components** **Duration** **Fidelity**	**Intervention Timing** **Theory or Conceptual Approach**	**Type of Provider** **Mode**	**# BCTs Described**
Baker, 2020[21] Knee OA	Tailored supervised strength training exercise program. Participants were asked to continue the program for 2 years following the run-in period. 1.5 months	Monthly motivational adherence counseling telephone calls: Assessment of behavior, goal setting, overcoming barriers to exercise, lapsing information, alerts to the study team when the participants experienced bad pain or an extended lapse in exercise; optional booster session Weekly call for first 6 months, then monthly for next 18 months Specifics of compliance not given; only a few used booster sessions from each arm	Sequential Transtheoretical module, social cognitive theory, self-efficacy	Exercise physiologists, physical therapists, interventionists Telephone	Adjunct intervention group: 14 BCTs Control group: 9 BCTs
Bennell, 2014[23] Knee OA	Fourteen (30-40 minute) physical therapy visits over 12 weeks. 2 sessions in first week and then 1 session per week after. Patients completed a quad strengthening program or a neuromuscular exercise program. 3 months	Booster sessions 2 additional 30-minute sessions over 24 weeks In intervention group: 63% attended both, 25% only 1, 12% neither	Sequential Not reported	Physical therapist In person	Adjunct intervention group: 11 Control group: 9

Notes. Two studies reported adjunct components that both overlapped the rehabilitation intervention and continued sequentially after the rehabilitation ended.[22,26]
Abbreviations. OA=Osteoarthritis.

APPENDIX D. EXCLUDED STUDIES

Exclude reasons: 1=Non-OECD, 2=Ineligible population, 3=Ineligible comparator, 4=Ineligible outcome, 5=Ineligible intervention, 5=Ineligible timing, 6=Ineligible study design.

Citation	Exclude Reason
Aliyu, 2018[1]	1
Bagheri, 2020[2]	1
Buchner, 2006[3]	2
Canaway, 2018[4]	4
Chen, 2020[5]	1
Chen, 2016[6]	2
Cheung, 2016[7]	3
Christiansen, 2020[8]	2
Christiansen, 2010[9]	4
Coppack, 2012[10]	6
Davergne, 2019[11]	2
De Oliveira Silva, 2020[12]	2
Elbadawy, 2017[13]	1
Focht, 2014[14]	3
Garver, 2011[15]	3
Gay, 2020[16]	3
George, 2010[17]	3
Geraghty, 2018[18]	5
Godges, 2008[19]	2
Gohner, 2006[20]	2
Hay, 2018[21]	7
Hugli, 2015[22]	5
Hunt, 2013[23]	4
Iles, 2011[24]	2
Jacobson, 2015[25]	5
Jensen, 2001[26]	2
Jensen, 2012[27]	3
Jessep, 2009[28]	3
Johansson, 2009[29]	2
Kaapa, 2006[30]	5
Karvannan, 2012[31]	1
Keefe, 2004[32]	4
Keefe, 1999[33]	5
Kerns, 2014[34]	3
King, 2008[35]	3

Citation	Exclude Reason
Krein, 2013[36]	3
Ledingham, 2020[37]	3
Li, 2020[38]	3
Lonsdale, 2012[39]	3
Marconcin, 2021[40]	5
Meng, 2017[41]	3
Monticone, 2021[42]	2
Nelligan, 2019[43]	7
Nelson, 2020[44]	2
Nicolson, 2018[45]	3
O'Brien, 2013[46]	4
O'Neill, 2020[47]	5
Palmer, 2014[48]	5
Patel, 2014[49]	4
Pelle, 2021[50]	3
Penttinen, 2002[51]	4
Pires, 2020[52]	3
Reilly, 1989[53]	5
Rejeski, 1997[54]	3
Rini, 2015[55]	3
Ronzi, 2017[56]	4
Şahin Onat, 2013[57]	4
Schiltenwolf, 2006[58]	5
Shimo, 2021[59]	4
Smeets, 2006[60]	5
Smeets, 2008[61]	3
Steinhilber, 2012[62]	2
Storro, 2004[63]	3
Suzuki, 2019[64]	2
Thomas, 2002[65]	5
Van Dillen, 2016[66]	2
van Dulmen, 2014[67]	1
Vong, 2011[68]	3
Walsh, 2013[69]	2
Willett, 2017[70]	3

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APPENDIX E. PEER REVIEW DISPOSITION

Question Text	Reviewer Number	Comment	Response
Are the objectives, scope, and methods for this review clearly described?	1	Yes	
	2	Yes	
	3	Yes	
	4	Yes	
	5	Yes	
	6	Yes	
Is there any indication of bias in our synthesis of the evidence?	1	No	
	2	No	
	3	No	
	4	No	
	5	No	
	6	No	
Are you aware of any published or unpublished studies that we may have overlooked?	1	No	
	2	No	
	3	No	
	4	No	
	5	No	
	6	No	
Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report.	1		
	2	Executive Summary, Key Findings Page 11, 3rd bullet from top, and on page 14 key findings and strength of evidence - report states "...overlap in behavior change techniques with comparator arms" - Were rationales provided in the study publications on why the BCT overlap between arms? Or adherence/maintenance was not the	We appreciate this important question. Five of the 10 unique included studies had adherence as a primary outcome or aim of the study. Of these, only one study (Bennell et al)[20] mentions that the intervention development was informed by the BCTs and related theory. No studies provide a rationale for the overlap. We have added this to the executive summary and the main body of the report (Key Findings and Discussion sections).

Question Text	Reviewer Number	Comment	Response
		primary aim of the trial?	
	2	Executive summary Page 11 - 7th bullet - appears to be a typo - says "imitation'" Should it be "initiation?"	Thank you, this typo has been corrected.
	2	Page 12: intervention characteristics - all were PTs who delivered intervention - did the research report training/knowledge/experience of PT in behavior change techniques? Did any of the final studies report fidelity or quality of delivery?	We agree that these are key details about the included studies that warrant reporting. Little information was provided about the training of the physical therapy interventionists. Only three studies mentioned PT training and they reported on the standard of care training.[19,24,27] None reported training specifically about PT knowledge or familiarity with BCTs. A comment was added about this lack of available detail (see Executive Summary and main report in Intervention Characteristics sections). All but one study[18] provided some information about fidelity to intervention protocol, though the method of reporting fidelity was variable. There was no clear pattern between higher reported fidelity and intervention effect. We have added this information to Appendix C.
	2	Page 15 - Lines 20-23 "Overall we determined there was low certainty that adjunctive intervention components have no effect on the adherence....." THIS IS A CONFUSING STATEMENT -do you mean your team could not conclude that actually no effect exists on adherence or low certainty of any effect existing on adherence??	We have clarified the wording of the certainty of evidence statement in the key findings and strength of evidence section of the executive summary to read: “Overall, based on GRADE criteria, we found low certainty of evidence that there is no effect of adjunctive interventions on adherence…”
	2	Page 25 lines 12 - we analyzed data narratively?? What does that mean?	We have reworded this section of the data synthesis methods in the executive summary for clarity and the passage now reads as follows: “Because quantitative synthesis was not feasible, we analyzed data narratively through descriptive approaches which identify patterns in

Question Text	Reviewer Number	Comment	Response
			key outcomes, comparators, intervention approaches, and other study characteristics."
	2	PAge 29 Behavior Change Techniques How was goal setting utilized? Were these clinical goals or patient self management goals? Support? The report includes very little details on the operationalization of BCTs. The authors do state often BCTs were insufficiently described in papers. (page 57)	The Behavior Change Technique Taxonomy provides extensive definitions of each of the 93 individual BCTs. There are multiple specific techniques for goal setting. For example, BCT 1.1 is related to behavioral goal setting while BCT 1.3 described a goal focused on a specific outcome. While it is beyond the scope of this report to provide granular detail about each technique, we would refer readers to the reference by Mitchie et al[10] for more extensive definitions. We have also added text noting that there was little detail about how individual BCTs were operationalized across the included studies (see BCT section in main report results).
	2	PAge 30 - line #16 - What is covert learning? Is this vicarious learning?	The BCT cluster "covert learning" includes BCTs for imaginary punishment, imaginary reward, and vicarious consequences. Further detail can be found in Michie et al[10]
	2	Overall, the authors performed rigorous methods with a limited set of eligible trials.	Thank you
	5	This manuscript focused on synthesizing the evidence regarding interventions to improve long-term adherence to physical rehabilitation among adults with hip or knee osteoarthritis or chronic low back pain. Overall, this was a well-written review and the authors used rigorous study selection and review methods. Most of my comments (outlined below) focus on additional contextualization of the literature or revisions for clarity/readability.	Thank you
	5	1. What was the length of intervention provided (not just time to the follow-up assessment) for each sequentially delivered adjunct adherence intervention (some of this info is in the appendix, but it would be helpful to have it in the main	We agree fully that intervention dose plays an important role in behavior maintenance. The duration of contact across the sequentially delivered interventions was 6 months for 3 of the 4 sequential studies and 2 years for the 4th. The frequency of contact during the intervention period ranged from 2 contacts over 6 months to 42 contacts over 2 years. As noted by the reviewer, the one

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		paper)? For example, it is described that the Bennell et al study (which showed an effect) was delivered weekly for 24 weeks, which represents weekly contact throughout the 6-month follow-up period. Another intervention is described as including two booster sessions; however, the frequency/duration of contact in the other studies is not described. This might be important as, in other health behavior change areas, the amount and continued nature of contact appears to be critical for promoting maintenance (e.g., in research on obesity treatment programs, provision of continued follow-up by an interventionist has been shown to promote long-term weight loss maintenance; however this effect disappears when extended-care interventions end, suggesting that a chronic disease/continuous care model may be more appropriate for continued promotion of weight loss maintenance). It would be helpful to investigate whether the frequency/duration of contact was associated with stated outcomes, and highlight this as an area of future research if a gap is identified.	sequentially delivered intervention that showed an effect was Bennell et al.[20] We have moved this information from the appendix into the Intervention Characteristics section of the Executive Summary and main report. Regarding the importance of the association between intervention dose and outcomes, we are unable to consider any subgroup analysis by this design feature given the small number of identified studies relevant to this question. We agree that it should be noted as a gap for future research. We have added this to the future research sections (see Table 8).
	5	2. The authors cite the Voils paper (citation 7) in several places to back up the argument that maintenance of behavior change requires fundamentally different skills than those used for initiation of behavior change. Although this has been argued in relation to several health behaviors, there still exists limited / preliminary data to back up this model. The Voils paper cited is	We appreciate the reviewer's comment and agree we did not provide full support for our argument. While the study of Voils et al that we cited is a pilot study, it is one that incorporated over a decade of research and foundational thought into the development of a new framework. Examples of prior work contributing to this concept including work by Kwasnicka et al, Greaves et al, and Howlett et al.[13,39-41] In addition, the framework from Voils' paper has been subsequently used in well-powered trials which have gone on to demonstrate positive effect (Voils et al, 2017).[37,38] We have added these citations to the discussion section of the main report as well.

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		only a pilot trial and by itself does not provide the level of evidence necessary to support this argument as it is written in the paper. Consider presenting more nuance within this argument, highlighting gaps in this area as another potential area for future research.	
	5	Other comments by section: 3. Data synthesis, page 14: the authors note "standardized mean differences…were calculated as the difference in change from the end of rehabilitation program between arms." Please clarify how these were calculated (e.g., typically this means dividing means by SDs, was this done? Were SDs available in all articles?). For which studies were all data available and for which did you have to make assumptions based on baseline data?	We have added further details to the methods section describing how standardized mean differences were calculated for all studies in forest plots using the pooled standard deviation. One study[23], provided SD as a function of change directly. For all other studies, we computed SD of change from after-treatment to follow-up assuming correlation of 0.5 between after-treatment SD and follow-up SD. For two studies[19,24], we used mean change from baseline to after-treatment and the baseline mean (and corresponding SDs) to compute after-treatment mean change and SD (assuming 0.5 correlation between baseline and after-treatment measurements). We computed follow-up mean and SD the same way. Details have been added to the Key Outcomes of Interest results section of the main report.
	5	4. The discussion describes issues with missing outcome data; however, it is unclear from the results how much data were missing and whether missing data procedures were used (this could also represent another important future direction for research).	Thank you, we have highlighted missing data as a key contributor to study ratings of high risk of bias in the quality of the evidence section of the results.
	5	5. Also in the discussion, it would be helpful to provide more information on the categories of BCTs/individual BCTs that were not included in reviewed	We discuss categories of BCTs that may be useful for future research that were not well represented in our included studies in the "Future Intervention Design Considerations" on page 65. Some

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		interventions as potential areas for future research.	examples include social support, behavioral contracts, intention to perform exercises, and the use of rewards.
	5	6. In Appendix E, it would be helpful to provide more detail on what each BCT is (vs. just giving the #) so that readers do not have to reference another paper to understand which BCTs were included/which were excluded.	Thank you, the BCT domains have been added to this appendix (Appendix F in the final report).
	5	7. Figure 1: I find this figure confusing / hard to follow – I'm not sure what it adds beyond the text, and the use of boxes and arrows could potentially mislead readers to assume that moderation and mediation pathways are being described (these may be appropriate, but should be discussed in the text as well).	For our reports, we include a visual representation of an analytic framework, as opposed to a conceptual model, using standardized nomenclature for systematic reviews. We agree that the previous version was somewhat confusing and could be interpreted to imply that the listed intermediate outcomes were mediators of the distal health outcomes. We have reworked this figure and clarified the associated text.
	5	8. Table 7: I do not understand why there are studies separated out within rows (e.g., under adherence 3 to 6 months, 4 RCTs are in one row while another RCT is in another); shouldn't certainty of evidence summarize certainty across ALL of these studies, combined?	Thank you. Randomized and nonrandomized designs are not combined as per GRADE guidance.[17] Studies reporting dichotomous outcomes could not be combined with studies reporting continuous outcomes. This clarification has been added to the report (rating the body of evidence methods section and table 7 notes).
	5	9. Table 8: The first bullet point is a full sentence but the remaining bullet points are not; it would be helpful for readability to pick one format and stick with it. Similarly, some of the bullet points identify gaps (missing research in the field) while others seem more like they are suggesting solutions (e.g., suggesting specific new areas). Consider clarifying how gaps are described (for further clarification between the two, could a column of	Thank you, we have standardized the bullet point formatting and clarified the language.

Question Text	Reviewer Number	Comment	Response
		"future directions" be added to the table?).	
	5	Other minor comments: 10. Acronyms are used before they are defined (e.g., use of OA, ROB, BCTs, SMD in the executive summary). PICOTS is undefined.	Thank you. We have added expansions for the acronyms.
	5	11. There are some typos/grammatical mistakes (I've identified some below); the manuscript would benefit from close proofing. For example: • The final bullet point in the executive summary: did the authors mean to write that "focus of differences in initiation" vs "imitation"? In this same bullet point, modifying "tailoring" to "tailor" would promote readability via parallel format across each recommendation. • Readability would be improved by consistently writing out or using numerals consistently (e.g., "two investigators" vs "2 investigators" in Data Abstraction section on page 2). • Readability would also be improved by consistent use of either active or passive voice. • Page 47, line 21: there is an extra word ("studies did not have an a prior focus")	Thank you. These typos have been addressed where necessary. The ESP style guide stipulates that numbers are written as numerals unless they appear at the start of a sentence.
	6	•Page 3, line 52: adjective should be adjunctive	Thank you, we corrected this typo.
	6	• Page 4, lines 51-54 requires further explanation – too vague	We have added further clarification by adding the specific models that specify conceptually distinct stages for initiation and long-term adherence.
	6	• Page 47, line 21 "a prior" should be "a priori"	Thank you, we corrected this typo.

Question Text	Reviewer Number	Comment	Response
	6	• I think the conclusions and findings are logical based on the review. I have input about self-efficacy. There are many different self-efficacy scales and self-efficacy is behavior specific. For example, the Arthritis Self-Efficacy Scale assesses a person's confidence in managing their condition (arthritis). It is a poor reflection of a person's confidence to complete their exercise home program, yet I'm guessing it was used in some of the studies for this purpose. I also wonder if in the studies that measured self-efficacy, they included specific interventions to improve self-efficacy. I looked at one of the articles cited (Bennell et al, 2020) and it doesn't appear to me that they included interventions to improve exercise self-efficacy, but it's difficult to tell. The types of interventions that should be used to improve self-efficacy for exercise include mastery experiences, vicarious experiences, verbal persuasion, and affective states. While I'm not sure this information changes your results/conclusions, it is an observation you could include that has implications for future research. You did mention that several of the self-efficacy scales were not valid and reliable; I think you could also indicate that they may not have been well-matched for the intervention, and, the interventions did not employ specific approaches to enhance self-efficacy. The fact that numerous articles found no difference between self-efficacy scores in the control and experimental groups illustrates my point.	We agree that measures of self-efficacy should be specific to the behavior in question and those used by the included studies did not all align with adherence to a home exercise program. We included all related outcomes though acknowledge this is not ideal and have clarified this in the report under key points in the discussion section of the main report. The reviewer raises an important point about the need for the inclusion of intervention components to promote self-efficacy related to completing recommended exercise regimens. At this point, there are no clear BCTs that have been identified which are clearly associated with improved self-efficacy though in the context of physical activities more BCTs seem to be associated with improved self-efficacy (Tang et al).[42] We have added clarity around this limitation in the report and as an area for future research.

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	6	I wonder about the compounding factor of face-to-face interventions vs. telephonic or text message interventions. It seems that you lumped all approaches together. If the literature indicates that there is no difference in outcomes comparing face-to-face interventions and telephonic/SMS/computer, then I think this is a sound approach. If the literature does not support no difference, then the difference needs to be teased out.	Because the literature in the field is nascent and the volume of studies is small, it is challenging to draw comparisons for outcomes related to the face-to-face vs telephonic/text message interventions. No studies made this direct comparison. We highlight this as an evidence gap to be further explored in Table 8.

APPENDIX F. BEHAVIOR CHANGE TECHNIQUES USED IN INCLUDED STUDIES BY INTERVENTION AND COMPARATOR GROUPS

Please refer to the main report's reference list for full citations.

Study	Index Rehabilitation Program		Adjunct Adherence-Enhancing Intervention	
Concurrently Delivered Adjunct Adherence				
Bennell 2020[20]	Goals and planning (1.1,1.4) Feedback and monitoring (2.1,2.2,2.3) Shaping knowledge (4.1)	Comparison of behavior (6.1) Repetition and substitution (8.1,8.6,8.7) Comparison of outcomes (9.1)	Goals and planning (1.2,1.3) Feedback and monitoring (2.4) Social support (3.1) Shaping knowledge (4.4) Natural consequences (5.1) Comparison of behavior (6.2) Associations (7.1)	Repetition and substitution (8.3) Reward and threat (10.9) Antecedents (12.1,12.4) Self-belief (15.1,15.3,15.4)
Baker 2020[21]	Goals and planning (1.1,1.4) Feedback and monitoring (2.3) Shaping knowledge (4.1) Comparison of behavior (6.1)	Repetition and substitution (8.1,8.6,8.7) Comparison of outcomes (9.1)	Goals and planning (1.2,1.5) Social support (3.1) Natural consequences (5.1) Regulation (11.2)	
Quicke 2017[22]	Goals and planning (1.1,1.4) Feedback and monitoring (2.2) Shaping knowledge (4.1)	Comparison of behavior (6.1) Repetition and substitution (8.1) Generalization of a target behavior (8.6)	Goals and planning (1.2,1.8) Feedback and monitoring (2.3) Generalization of a target behavior (8.7)	
Bennell 2014[23]	Goals and planning (1.1,1.4) Feedback and monitoring (2.2) Shaping knowledge (4.1) Comparison of behavior (6.1)	Repetition and substitution (8.1,8.6,8.7) Comparison of outcomes (9.1)	Goals and planning (1.2,1.5)	

Study	Index Rehabilitation Program		Adjunct Adherence-Enhancing Intervention	
Sequentially Delivered Adjunct Adherence				
Lonsdale 2017[24]	Goals and planning (1.1,1.4) Feedback and monitoring (2.2) Shaping knowledge (4.1) Comparison of behavior (6.1)	Repetition and substitution (8.1,8.6,8.7) Comparison of outcomes (9.1)	Goals and planning (1.2) Feedback and monitoring (2.3) Natural consequences (5.1)	
Ben-Ami 2017[19]	Goals and planning (1.1,1.4) Feedback and monitoring (2.2) Feedback and monitoring (4.1) Comparison of behavior (6.1)	Repetition and substitution (8.1,8.6,8.7) Comparison of outcomes (9.1)	Goals and planning (1.2) Social support (3.1) Natural consequences (5.1) Associations (7.7)	Repetition and substitution (8.2) Comparison of outcomes (9.2,9.3) Identify (13.5)
Bennell 2017[25]	Goals and planning (1.1,1.4) Feedback and monitoring (2.2,2.3) Shaping knowledge (4.1) Natural consequences (5.1)	Comparison of behavior (6.1) Repetition and substitution (8.1,8.6,8.7) Comparison of outcomes (9.1)	Goals and planning (1.2,1.5) Feedback and monitoring (2.3)	
Brosseau 2012[18]	Feedback and monitoring (2.3) Shaping knowledge (4.1) Comparison of behavior (6.1) Repetition and substitution (8.1) Reward and threat (10.1)		Goals and planning (1.1,1.2) Natural consequences (5.1) Comparison of outcomes (9.1)	
Pisters 2010[26]	Goals and planning (1.1,1.4,1.5) Feedback and monitoring (2.2) Shaping knowledge (4.1)	Comparison of behavior (6.1) Repetition and substitution (8.1,8.68.7) Comparison of outcomes (9.1)	Goals and planning (1.2) Feedback and monitoring (2.3)	
Friedrich 1998[27]	Feedback and monitoring (2.2) Shaping knowledge (4.1) Natural consequences (5.1) Comparison of behavior (6.1)	Repetition and substitution (8.1,8.6,8.7) Comparison of outcomes (9.1)	Goals and planning (1.1,1.2,1.4,1.8) Feedback and monitoring (2.3)	Natural consequences (5.2) Associations (7.1) Reward and threat (10.3,10.11) Self-belief (15.1)

Notes. Behavior change technique domains: 1.1 Goal setting (behavior); 1.2 Problem solving; 1.3 Goal setting (outcome); 1.4 Action planning; 1.5 Review behavior (goals); 1.8 Behavioral contract; 2.1 Monitoring of behavior by others without feedback; 2.2 Feedback on behavior; 2.3 Self-monitoring of behavior; 2.4 Self-monitoring of outcome of behavior; 3.1 Social support (unspecified); 4.1 Instruction on how to perform a behavior; 4.4 Behavioral experiments; 5.1 Information about health consequences; 5.2 Salience of consequences; 6.1 Demonstration of the behavior; 6.2 Social comparison; 7.1 Prompts/cues; 7.7 Exposure; 8.1 Behavioral practice/rehearsal; 8.2 Behavior Substitution; 8.3 Habit formation; 8.6 Generalization of a target behavior; 8.7 Graded tasks; 9.1 Credible source; 9.2 Pros and cons; 9.3 Comparative imagining of future outcomes; 10.1 Material incentive (behavior); 10.3 Non-specific reward; 10.9 Self-reward; 10.11 Future punishment; 11.2 Reduce negative emotions; 12.1 Restructuring the physical environment; 12.4 Distraction; 13.5 Identity associated with changed behaviors; 15.1 Verbal persuasion about capability; 15.3 Focus on past success; 15.4 Self-talk.
Abbreviations. BCT=Behavior Change Techniques.

APPENDIX G. BEHAVIOR CHANGE TECHNIQUES USED IN INCLUDED STUDIES

Please refer to the main report's reference list for full citations.

Cluster	BCT	Number of Interventions BCT Is Present In	Studies
Goals and planning	1.1 Goal setting (behavior)	10 (100%)	18-27
	1.2 Problem solving	10 (100%)	18-27
	1.3 Goal setting (outcome)	1 (10%)	20
	1.4 Action planning	9 (90%)	19-27
	1.5 Review behavior (goals)	4 (40%)	21,23,25,26
	1.8 Behavioral contract	2 (20%)	22,27
Feedback and monitoring	2.1 Monitoring of behavior by others without feedback	1 (10%)	20
	2.2 Feedback on behavior	8 (80%)	19,20,22-27
	2.3 Self-monitoring of behavior	8 (80%)	18,20-22,24-27
	2.4 Self-monitoring of outcome of behavior	1 (10%)	20
Social support	3.1 Social support (unspecified)	3 (30%)	19-21
Shaping knowledge	4.1 Instruction on how to perform a behavior	10 (100%)	18-27
	4.4 Behavioral experiments	1 (10%)	20
Natural consequences	5.1 Information about health consequences	7 (70%)	18-27
	5.2 Salience of consequences	1 (10%)	27
Comparison of behavior	6.1 Demonstration of the behavior	10 (100%)	18-27
	6.2 Social comparison	1 (10%)	20
Associations	7.1 Prompts/cues	2 (20%)	20,27
	7.7 Exposure	1 (10%)	19
Repetition and substitution	8.1 Behavioral practice/rehearsal	10 (100%)	18-27
	8.2 Behavior Substitution	1 (10%)	19
	8.3 Habit formation	1 (10%)	20

Cluster	BCT	Number of Interventions BCT Is Present In	Studies
	8.6 Generalization of a target behavior	9 (90%)	[19-27]
	8.7 Graded tasks	9 (90%)	[19-27]
Comparison of outcomes	9.1 Credible source	9 (90%)	[18-21,23-27]
	9.2 Pros and cons	1 (10%)	[19]
	9.3 Comparative imagining of future outcomes	1 (10%)	[19]
Reward and threat	10.1 Material incentive (behavior)	1 (10%)	[18]
	10.3 Non-specific reward	1 (10%)	[27]
	10.9 Self-reward	1 (10%)	[20]
	10.11 Future punishment	1 (10%)	[27]
Regulation	11.2 Reduce negative emotions	1 (10%)	[21]
Antecedents	12.1 Restructuring the physical environment	1 (10%)	[20]
	12.4 Distraction	1 (10%)	[20]
Identify	13.5 Identity associated with changed behaviors	1 (10%)	[19]
Self-belief	15.1 Verbal persuasion about capability	2 (20%)	[27]
	15.3 Focus on past success	1 (10%)	[20]
	15.4 Self-talk	1 (10%)	[20]