

APPENDIX A. SEARCH STRATEGIES

Database: Medline (via Ovid, ALL 1946 to June 9, 2021)

Search date: 6/10/2021

Search set	Search strategy	Results
#1 Chronic pain terms and conditions	exp chronic pain/ or exp neuralgia/ or exp fibromyalgia/ or exp arthritis, rheumatoid/ or exp arthritis, psoriatic/ or exp gout/ or exp lupus erythematosus, systemic/ or exp complex regional pain syndromes/ or exp migraine disorders/ or exp cluster headache/ or exp tension-type headache/ or exp cystitis, interstitial/ or exp multiple sclerosis/ or exp ehlers-danlos syndrome/ or exp musculoskeletal pain/ or exp neck pain/ or exp back pain/ or exp low back pain/ or exp pelvic girdle pain/ or exp flank pain/ or exp pelvic pain/ or exp shoulder pain/ or exp patellofemoral pain syndrome/ or exp arthralgia/ or exp abdominal pain/ or exp myofascial pain syndromes/ or exp facial pain/ or exp chest pain/ or exp facial neuralgia/ or exp phantom limb/ or exp myalgia/ or exp metatarsalgia/ or exp osteoarthritis/ or ((chronic* or persisten* or long?lasting or long?term or intermittent* or continuous) adj3 (pain* or ache* or myalg* or arthralg* or allodynia or arthrit* or spondyl* or neuropath* or radiculopath*)).ti,ab. or "consistent pain".ti,ab. or "perpetual pain".ti,ab. or neuralgia.ti,ab. or fibromyalgia.ti,ab. or "rheumatoid arthritis".ti,ab. or "psoriatic arthritis".ti,ab. or gout.ti,ab. or "systemic lupus erythematosus".ti,ab. or "complex regional pain".ti,ab. or ((cluster or tension) adj3 headache*).ti,ab. or migrane*.ti,ab. or "interstitial cystitis".ti,ab. or "bladder pain syndrome".ti,ab. or "multiple sclerosis".ti,ab. or "Ehlers-Danlos syndrome".ti,ab. or ((MSK or musculo* or muscular or joint or joints or radicular or shoulder* or "rotator cuff" or elbow* or hip or hips or pelvic or pelvis or flank or buttock or knee* or patell* or myofascial or "phantom limb") adj3 (pain* or ache* or myalg* or arthralg*)).ti,ab. or osteoarthritis.ti,ab. or (degenerative adj joint adj disease).ti,ab. or (frozen adj shoulder*).ti,ab. or metatarsalgia.ti,ab. or "pelvic floor disorder".ti,ab. or "pelvic floor disorders".ti,ab. or ((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*)).ti,ab. or lumbago.ti,ab. or sciatica.ti,ab. or ((neck or cervical or cervicodynia) adj3 (pain* or ache* or radiculopath*)).ti,ab. or cervicalgia*.ti,ab.	795957
#2 Tele / Video terms	exp Telemedicine/ or exp Remote Consultation/ or Videoconferencing/ or Telephone/ or exp Cell Phone/ or exp Computers, Handheld/ or (videoconferenc* or video-conferenc* or webconferenc* or web-conferenc* or webex or zoom or skype or ooVoo or FaceTime or Tango or GoToMeeting or web-delivered or internet-delivered or computer-delivered).ti,ab. or ((remote* or video* or internet or internet-based or web or web-based or online or online-based or computer or computer-based) adj2 (meet* or call* or chat* or conferenc* or consult* or counsel* or visit*)).ti,ab. or ((video* or remote* or web-based or internet-based) adj2 care).ti,ab. or (virtual or virtually or telepain or tele-pain or telehealth or tele-health or telemedicine or tele-medicine or telemedical or tele-medical or telecare or tele-care or teleconsult* or tele-consult* or telecommunicat* or tele-communicat* or telemanag* or tele-manag* or telehome or tele-home or telepharmac* or tele-pharmac* or telecardiol* or tele-cardiol* or tele-cardiac or tele-rehabilitat* or telerehabilitat* or teleintervention* or tele-intervention* or teleconferenc* or tele-conferenc* or telephon* or tele-phon* or cellphon* or cell-phon* or smartphon* or "mobile phone" or "mobile phones" or e-visit* or evisit* or e-care or ecare or e-consult* or econsult* or e-diagnos* or ediagnos* or e-medicine or emedicine or e-	306186

Search set	Search strategy	Results
	physician* or ephysician* or eclinician* or e-clinician* or e-pharm* or epharm* or "communication technology" or "communication technologies" or eHealth or e- health or "e health" or mHealth or m-health or "m health" or wireless).ti,ab. or ((mobile or digital) adj health*).ti,ab. or (tele adj (care or diagnos* or health* or intervention* or manag* or therap* or treat* or medicine or medical or prescrib* or prescript* or pain)).ti,ab.	
#3 combining	1 and 2	7539
#4 RCT filter	randomized controlled trial.pt. OR controlled 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.	3280926
#5	3 and 4	2388
#6 Animal-only exclusion	5 not (exp animals/ not exp humans/)	2365
#7 Pediatric-only exclusion	6 not ((exp adolescent/ or exp child/ or exp infant/) not exp adult/)	2296
#8 Study design exclusion	7 not (Editorial or Letter or Case Reports or Comment).pt.	2267

Database: Embase (via Elsevier)

Search date: 6/10/2021

Note: Search from the Results page

Search set	Search strategy	Results
#1 Chronic pain terms and conditions	'chronic pain'/exp OR 'neuralgia'/exp OR 'fibromyalgia'/exp OR 'rheumatoid arthritis'/exp OR 'psoriatic arthritis'/exp OR 'gout'/exp OR 'systemic lupus erythematosus'/exp OR 'complex regional pain syndrome'/exp OR 'migraine'/exp OR 'cluster headache'/exp OR 'tension headache'/exp OR 'interstitial cystitis'/exp OR 'multiple sclerosis'/exp OR 'ehlers danlos syndrome'/exp OR 'musculoskeletal pain'/exp OR 'neck pain'/exp OR 'backache'/exp OR 'low back pain'/exp OR 'pelvic girdle pain'/exp OR 'flank pain'/exp OR 'pelvic pain'/exp OR 'shoulder pain'/exp OR 'patellofemoral pain syndrome'/exp OR 'arthralgia'/exp OR 'abdominal pain'/exp OR 'myofascial pain'/exp OR 'face pain'/exp OR 'musculoskeletal chest pain'/exp OR 'facial neuralgia'/exp OR 'phantom pain'/exp OR 'myalgia'/exp OR 'metatarsalgia'/exp OR 'osteoarthritis'/exp OR ((chronic* OR persisten* OR long?lasting OR long?term OR intermittent* OR continuous) NEAR/3 (pain* OR ache* OR myalg* OR arthralg* OR allodynia OR arthrit* OR spondyl* OR neuropath* OR radiculopath*)):ti,ab OR 'consistent pain':ti,ab OR 'perpetual pain':ti,ab OR neuralgia:ti,ab OR fibromyalgia:ti,ab OR 'rheumatoid arthritis':ti,ab OR 'psoriatic arthritis':ti,ab OR gout:ti,ab OR 'systemic lupus erythematosus':ti,ab OR 'complex regional pain':ti,ab OR ((cluster OR tension) NEAR/3 headache*):ti,ab OR migraine*:ti,ab OR 'interstitial cystitis':ti,ab OR 'bladder pain syndrome':ti,ab OR 'multiple sclerosis':ti,ab OR 'Ehlers Danlos syndrome':ti,ab OR ((MSK OR musculo* OR muscular OR joint OR joints OR radicular OR shoulder* OR 'rotator cuff OR elbow*	1458785

Search set	Search strategy	Results
	OR hip OR hips OR pelvic OR pelvis OR flank OR buttock OR knee* OR patell* OR myofascial OR 'phantom limb') NEAR/3 (pain* OR ache* OR myalg* OR arthralg*):ti,ab OR osteoarthritis:ti,ab OR (degenerative NEXT/1 joint NEXT/1 disease):ti,ab OR (frozen NEXT/1 shoulder*):ti,ab OR metatarsalgia:ti,ab OR 'pelvic floor disorder':ti,ab OR 'pelvic floor disorders':ti,ab OR ((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*)):ti,ab OR lumbago:ti,ab OR sciatica:ti,ab OR ((neck OR cervical OR cervicodynia) NEAR/3 (pain* OR ache* OR radiculopath*)):ti,ab OR cervicalgia*:ti,ab	
#2 Tele / Video terms	'Telemedicine'/exp OR 'Teleconsultation'/exp OR 'Videoconferencing'/de OR 'Telephone'/de OR 'Mobile Phone'/exp OR (videoconferenc* OR video?conferenc* OR webconferenc* OR web?conferenc* OR webex OR zoom OR skype OR ooVoo OR FaceTime OR Tango OR GoToMeeting OR web?delivered OR internet?delivered OR computer?delivered):ti,ab OR ((remote* OR video* OR internet OR internet-based OR web OR web-based OR online OR online?based OR computer OR computer?based) NEAR/2 (meet* OR call* OR chat* OR conferenc* OR consult* OR counsel* OR visit*)):ti,ab OR ((video* OR remote* OR web?based OR internet?based) NEAR/2 care):ti,ab OR (virtual OR virtually OR telepain OR tele?pain OR telehealth OR tele?health OR telemedicine OR tele?medicine OR telemedical OR tele?medical OR telecare OR tele?care OR teleconsult* OR tele?consult* OR telecommunicat* OR tele?communicat* OR telemanag* OR tele?manag* OR telehome OR tele?home OR telepharmac* OR tele?pharmac* OR telecardiol* OR tele?cardiol* OR tele?cardiac OR tele?rehabilitat* OR telerehabilitat* OR teleintervention* OR tele?intervention* OR teleconferenc* OR tele?conferenc* OR telephon* OR tele?phon* OR cellphon* OR cell?phon* OR smartphon* OR 'mobile phone' OR 'mobile phones' OR e?visit* OR evisit* OR e?care OR ecare OR e?consult* OR econsult* OR ediagnos* OR e?medicine OR emedicine OR e?physician* OR ephysician* OR eclinician* OR e?clinician* OR e?pharm* OR epharm* OR 'communication technology' OR 'communication technologies' OR eHealth OR "e health" OR 'e health' OR mHealth OR m?health OR 'm health' OR wireless):ti,ab OR ((mobile OR digital) NEXT/1 health*):ti,ab OR (tele NEXT/1 (care OR diagnos* OR health* OR intervention* OR manag* OR therap* OR treat* OR medicine OR medical OR prescrib* OR prescript* OR pain)):ti,ab	401829
#3 combining	#1 AND #2	14,828
#4 RCT filter	'randomized controlled trial'/exp OR 'controlled clinical trial'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp 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 cross?over:ti,ab OR ((single OR double) NEAR/1 blind*):ti,ab	4715525
#5	#3 AND #4	4350
#6 Animal-only exclusion	#5 AND [humans]/lim	4119
#7	#6 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	2,631

Search set	Search strategy	Results
Study design exclusion	[conference abstract]/lim OR 'conference abstract'/exp OR 'conference abstract'/it)	

Database: Cochrane Central Register of Controlled Trials (via Ovid, May 2021)

Search date: 6/10/2021

Search set	Search strategy	Results
#1 Chronic pain terms and conditions	exp chronic pain/ or exp neuralgia/ or exp fibromyalgia/ or exp arthritis, rheumatoid/ or exp arthritis, psoriatic/ or exp gout/ or exp lupus erythematosus, systemic/ or exp complex regional pain syndromes/ or exp migraine disorders/ or exp cluster headache/ or exp tension-type headache/ or exp cystitis, interstitial/ or exp multiple sclerosis/ or exp ehlers-danlos syndrome/ or exp musculoskeletal pain/ or exp neck pain/ or exp back pain/ or exp low back pain/ or exp pelvic girdle pain/ or exp flank pain/ or exp pelvic pain/ or exp shoulder pain/ or exp patellofemoral pain syndrome/ or exp arthralgia/ or exp abdominal pain/ or exp myofascial pain syndromes/ or exp facial pain/ or exp chest pain/ or exp facial neuralgia/ or exp phantom limb/ or exp myalgia/ or exp metatarsalgia/ or exp osteoarthritis/ or ((chronic* or persisten* or long?lasting or long?term or intermittent* or continuous) adj3 (pain* or ache* or myalg* or arthralg* or allodynia or arthrit* or spondyl* or neuropath* or radiculopath*)),ti,ab. or "consistent pain".ti,ab. or "perpetual pain".ti,ab. or neuralgia.ti,ab. or fibromyalgia.ti,ab. or "rheumatoid arthritis".ti,ab. or "psoriatic arthritis".ti,ab. or gout.ti,ab. or "systemic lupus erythematosus".ti,ab. or "complex regional pain".ti,ab. or ((cluster or tension) adj3 headache*).ti,ab. or migrane*.ti,ab. or "interstitial cystitis".ti,ab. or "bladder pain syndrome".ti,ab. or "multiple sclerosis".ti,ab. or "Ehlers-Danlos syndrome".ti,ab. or ((MSK or musculo* or muscular or joint or joints or radicular or shoulder* or "rotator cuff" or elbow* or hip or hips or pelvic or pelvis or flank or buttock or knee* or patell* or myofascial or "phantom limb") adj3 (pain* or ache* or myalg* or arthralg*)),ti,ab. or osteoarthritis.ti,ab. or (degenerative adj joint adj disease).ti,ab. or (frozen adj shoulder*).ti,ab. or metatarsalgia.ti,ab. or "pelvic floor disorder".ti,ab. or "pelvic floor disorders".ti,ab. or ((back or low?back or spine or spinal or thoracic or vertebr* or intervertebr* or sciatic or lumbar or lumbo* or lumbo*) adj3 (pain* or ache* or radiculopath*)),ti,ab. or lumbago.ti,ab. or sciatica.ti,ab. or ((neck or cervical or cervicodynia) adj3 (pain* or ache* or radiculopath*)),ti,ab. or cervicalgia*.ti,ab.	115124
#2 Tele / Video terms	exp Telemedicine/ or exp Remote Consultation/ or Videoconferencing/ or Telephone/ or exp Cell Phone/ or exp Computers, Handheld/ or (videoconferenc* or video-conferenc* or webconferenc* or webconferenc* or webex or zoom or skype or ooVoo or FaceTime or Tango or GoToMeeting or web-delivered or internet-delivered or computer-delivered).ti,ab. or ((remote* or video* or internet or internet-based or web or web-based or online or online-based or computer or computer-based) adj2 (meet* or call* or chat* or conferenc* or consult* or counsel* or visit*)),ti,ab. or ((video* or remote* or web-based or internet-based) adj2 care).ti,ab. or (virtual or virtually or telepain or tele-pain or telehealth or tele-health or telemedicine or tele-medicine or telemedical or tele-medical or telecare or tele-care or teleconsult* or tele-consult* or telecommunicat* or tele-communicat* or telemanag* or tele-manag* or telehome or tele-home or telepharmac* or tele-pharmac* or telecardiol* or tele-cardiol* or tele-cardiac or tele-rehabilitat* or telerehabilitat* or teleintervention* or tele-intervention* or teleconferenc* or tele-conferenc* or telephon* or tele-phon* or cellphon* or cell-phon* or smartphon* or "mobile phone" or	49113



Search set	Search strategy	Results
	"mobile phones" or e-visit* or evisit* or e-care or ecare or e-consult* or econsult* or e-diagnos* or ediagnos* or e-medicine or emedicine or e-physician* or ephysician* or eclinician* or e-clinician* or e-pharm* or epharm* or "communication technology" or "communication technologies" or eHealth or e- health or "e health" or mHealth or m-health or "m health" or wireless).ti,ab. or ((mobile or digital) adj health*).ti,ab. or (tele adj (care or diagnos* or health* or intervention* or manag* or therap* or treat* or medicine or medical or prescrib* or prescript* or pain)).ti,ab.	
#3 combining	1 and 2	3332
#4 RCT filter	3 and (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 RCT.ti,ab.)	2863
#5 Pediatric-only exclusion	4 not ((exp adolescent/ or exp child/ or exp infant/) not exp adult/)	2816

Database: CINAHL Complete (via EBSCO)

Search date: 6/10/2021

Search set	Search strategy	Results
#1 Chronic pain terms and conditions	(MH "chronic pain") OR (MH "neuralgia+") OR (MH "fibromyalgia") OR (MH "arthritis, rheumatoid+") OR (MH "arthritis, psoriatic") OR (MH "gout") OR (MH "lupus erythematosus, systemic+") OR (MH "complex regional pain syndromes+") OR (MH "migraine") OR (MH "cluster headache") OR (MH "tension headache") OR (MH "interstitial cystitis") OR (MH "multiple sclerosis+") OR (MH "ehlers-danlos syndrome") OR (MH "neck pain") OR (MH "back pain+") OR (MH "low back pain") OR (MH "knee pain+") OR (MH "pelvic pain+") OR (MH "shoulder pain+") OR (MH "patellofemoral pain syndrome+") OR (MH "arthralgia+") OR (MH "abdominal pain+") OR (MH "myofascial pain syndromes+") OR (MH "facial pain+") OR (MH "chest pain+") OR (MH "facial neuralgia") OR (MH "phantom pain") OR (MH "muscle pain") OR (MH "metatarsalgia") OR (MH "osteoarthritis+") OR ((TI chronic* OR AB chronic*) OR (TI persisten* OR AB persisten*) OR (TI long-lasting OR AB long-lasting) OR (TI long-term OR AB long-term) OR (TI intermittent* OR AB intermittent*) OR (TI continuous OR AB continuous)) N3 ((TI pain* OR AB pain*) OR (TI ache* OR AB ache*) OR (TI myalg* OR AB myalg*) OR (TI arthralg* OR AB arthralg*) OR (TI allodynia OR AB allodynia) OR (TI arthrit* OR AB arthrit*) OR (TI spondyl* OR AB spondyl*) OR (TI neuropath* OR AB neuropath*) OR (TI radiculopath* OR AB radiculopath*)) OR (TI "consistent pain" OR AB "consistent pain") OR (TI "perpetual pain" OR AB "perpetual pain") OR (TI neuralgia OR AB neuralgia) OR (TI fibromyalgia OR AB fibromyalgia) OR (TI "rheumatoid arthritis" OR AB "rheumatoid arthritis") OR (TI "psoriatic arthritis" OR AB "psoriatic arthritis") OR (TI gout OR AB gout) OR (TI "systemic lupus erythematosus" OR AB "systemic lupus erythematosus") OR (TI "complex regional pain" OR AB "complex regional pain") OR (((TI cluster OR AB cluster) OR (TI tension OR AB tension)) N3 (TI headache* OR AB headache*)) OR (TI migrane* OR AB migrane*) OR (TI "interstitial cystitis" OR AB "interstitial cystitis") OR (TI "bladder pain syndrome" OR AB "bladder pain syndrome") OR (TI "multiple sclerosis" OR AB "multiple sclerosis") OR (TI "Ehlers-Danlos syndrome" OR AB "Ehlers-Danlos syndrome") OR (((TI MSK OR AB MSK) OR (TI musculo* OR AB	288921



Search set	Search strategy	Results
	musculo*) OR (TI muscular OR AB muscular) OR (TI joint OR AB joint) OR (TI joints OR AB joints) OR (TI radicular OR AB radicular) OR (TI shoulder* OR AB shoulder*) OR (TI "rotator cuff" OR AB "rotator cuff") OR (TI elbow* OR AB elbow*) OR (TI hip OR AB hip) OR (TI hips OR AB hips) OR (TI pelvic OR AB pelvic) OR (TI pelvis OR AB pelvis) OR (TI flank OR AB flank) OR (TI buttock OR AB buttock) OR (TI knee* OR AB knee*) OR (TI patell* OR AB patell*) OR (TI myofascial OR AB myofascial) OR (TI "phantom limb" OR AB "phantom limb")) N3 ((TI pain* OR AB pain*) OR (TI ache* OR AB ache*) OR (TI myalg* OR AB myalg*) OR (TI arthralg* OR AB arthralg*)) OR (TI osteoarthritis OR AB osteoarthritis) OR ((TI degenerative OR AB degenerative) N1 (TI joint OR AB joint) N1 (TI disease OR AB disease)) OR ((TI frozen OR AB frozen) N1 (TI shoulder* OR AB shoulder*)) OR (TI metatarsalgia OR AB metatarsalgia) OR (TI "pelvic floor disorder" OR AB "pelvic floor disorder") OR (TI "pelvic floor disorders" OR AB "pelvic floor disorders") OR ((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 lumbago OR AB lumbago) OR (TI sciatica OR AB sciatica) OR (((TI neck OR AB neck) OR (TI cervical OR AB cervical) OR (TI cervicodynia OR AB cervicodynia)) N3 ((TI pain* OR AB pain*) OR (TI ache* OR AB ache*) OR (TI radiculopath* OR AB radiculopath*)) OR (TI cervicalgia* OR AB cervicalgia*))	
#2 Tele / Video terms	(MH "Telemedicine+") OR (MH "Telerehabilitation") OR (MH "Telepsychiatry") OR (MH "Telehealth+") OR (MH "Remote Consultation") OR (MH "Videoconferencing+") OR (MH "Telenursing") OR (MH "Telephone") OR (MH "Cell Phone+") OR (MH "Computers, Hand-held+") OR ((TI videoconferenc* OR AB videoconferenc*) OR (TI videoconferenc* OR AB videoconferenc*) OR (TI webconferenc* OR AB webconferenc*) OR (TI webconferenc* OR AB webconferenc*) OR (TI webconferenc* OR AB webconferenc*) OR (TI webex OR AB webex) OR (TI zoom OR AB zoom) OR (TI skype OR AB skype) OR (TI ooVoo OR AB ooVoo) OR (TI FaceTime OR AB FaceTime) OR (TI Tango OR AB Tango) OR (TI GoToMeeting OR AB GoToMeeting) OR (TI web-delivered OR AB web-delivered) OR (TI internet-delivered OR AB internet-delivered) OR (TI computer-delivered OR AB computer-delivered)) OR (((TI remote* OR AB remote*) OR (TI video* OR AB video*) OR (TI internet OR AB internet) OR (TI internet-based OR AB internet-based) OR (TI web OR AB web) OR (TI web-based OR AB web-based) OR (TI online OR AB online) OR (TI online-based OR AB online-based) OR (TI computer OR AB computer) OR (TI computer-based OR AB computer-based)) N2 ((TI meet* OR AB meet*) OR (TI call* OR AB call*) OR (TI chat* OR AB chat*) OR (TI conferenc* OR AB conferenc*) OR (TI consult* OR AB consult*) OR (TI counsel* OR AB counsel*) OR (TI visit* OR AB visit*)) OR (((TI video* OR AB video*) OR (TI remote* OR AB remote*) OR (TI web-based OR AB web-based) OR (TI internet-based OR AB internet-based)) N2 (TI care OR AB care)) OR ((TI virtual OR AB virtual) OR (TI virtually OR AB virtually) OR (TI telepain OR AB telepain) OR (TI tele-pain OR AB tele-pain) OR (TI telehealth OR AB telehealth) OR (TI tele-health OR AB tele-health) OR (TI telemedicine OR AB telemedicine) OR (TI tele-medicine OR AB tele-medicine) OR (TI telemedical OR AB telemedical) OR (TI tele-medical OR AB tele-medical) OR (TI telecare OR AB telecare) OR (TI tele-care OR AB tele-care) OR	131328

Search set	Search strategy	Results
	(TI teleconsult* OR AB teleconsult*) OR (TI tele-consult* OR AB tele-consult*) OR (TI telecommunicat* OR AB telecommunicat*) OR (TI telecommunicat* OR AB tele-communicat*) OR (TI telemanag* OR AB telemanag*) OR (TI tele-manag* OR AB tele-manag*) OR (TI telehome OR AB telehome) OR (TI tele-home OR AB tele-home) OR (TI telepharmac* OR AB telepharmac*) OR (TI tele-pharmac* OR AB tele-pharmac*) OR (TI telecardiol* OR AB telecardiol*) OR (TI tele-cardiol* OR AB tele-cardiol*) OR (TI tele-cardiac OR AB tele-cardiac) OR (TI tele-rehabilitat* OR AB tele-rehabilitat*) OR (TI telerehabilitat* OR AB telerehabilitat*) OR (TI teleintervention* OR AB teleintervention*) OR (TI tele-intervention* OR AB tele-intervention*) OR (TI teleconferenc* OR AB teleconferenc*) OR (TI tele-conferenc* OR AB tele-conferenc*) OR (TI telephon* OR AB telephon*) OR (TI tele-phon* OR AB tele-phon*) OR (TI cellphon* OR AB cellphon*) OR (TI cell-phon* OR AB cell-phon*) OR (TI smartphon* OR AB smartphon*) OR (TI "mobile phone" OR AB "mobile phone") OR (TI "mobile phones" OR AB "mobile phones") OR (TI e-visit* OR AB e-visit*) OR (TI evisit* OR AB evisit*) OR (TI e-care OR AB e-care) OR (TI ecare OR AB ecare) OR (TI e-consult* OR AB e-consult*) OR (TI econsult* OR AB econsult*) OR (TI e-diagnos* OR AB e-diagnos*) OR (TI ediagnos* OR AB ediagnos*) OR (TI e-medicine OR AB e-medicine) OR (TI emedicine OR AB emedicine) OR (TI e-physician* OR AB e-physician*) OR (TI ephysician* OR AB ephysician*) OR (TI eclinician* OR AB eclinician*) OR (TI e-clinician* OR AB e-clinician*) OR (TI e-pharm* OR AB e-pharm*) OR (TI epharm* OR AB epharm*) OR (TI "communication technology" OR AB "communication technology") OR (TI "communication technologies" OR AB "communication technologies") OR (TI eHealth OR AB eHealth) OR (TI "e- health" OR AB "e- health") OR (TI "e health" OR AB "e health") OR (TI mHealth OR AB mHealth) OR (TI m-health OR AB m-health) OR (TI "m health" OR AB "m health") OR (TI wireless OR AB wireless)) OR (((TI mobile OR AB mobile) OR (TI digital OR AB digital)) W1 (TI health* OR AB health*)) OR ((TI tele OR AB tele) W1 ((TI care OR AB care) OR (TI diagnos* OR AB diagnos*) OR (TI health* OR AB health*) OR (TI intervention* OR AB intervention*) OR (TI manag* OR AB manag*) OR (TI therap* OR AB therap*) OR (TI treat* OR AB treat*) OR (TI medicine OR AB medicine) OR (TI medical OR AB medical) OR (TI prescrib* OR AB prescrib*) OR (TI prescript* OR AB prescript*) OR (TI pain OR AB pain)))	
#3 combining	S1 AND S2	4,153
#4 RCT filter	(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 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)	295687
#5	S3 AND S4	607
#6 Animal-only exclusion	S5 NOT (((MH "Animals+") OR (MH "Animal Studies") OR (TI "animal model*")) NOT (MH "human"))	607

Search set	Search strategy	Results
#7 Pediatric-only exclusion	S6 NOT ((MH "Adolescence+" OR MH "Infant+" OR MH "Child+") NOT (MH "Adult+"))	585
#8 Study design exclusion	S7 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)	538

APPENDIX B. EXCLUDED STUDIES

Exclude reasons: 1= Ineligible publication type, 2=Non-OECD, 3=Ineligible population, 4=Ineligible intervention, 5=Ineligible comparator, 6=Ineligible study design. (Reference list follows the table.)

Citation	Exclusion Reason
Ahn, 2020 ¹	5
Amorim, 2016 ²	4
Azma, 2018 ³	2
Bekkelund, 2019 ⁴	4
Bennell, 2020 ⁵	5
Bennell, 2017 ⁶	5
Berglind, 2018 ⁷	3
Boersma, 2019 ⁸	4
Buhrman, 2004 ⁹	4
Buhrman, 2013 ¹⁰	4
Burke, 2019 ¹¹	4
Carlos-Vivas, 2020 ¹²	5
Castro-Sanchez, 2020 ¹³	4
Cavalera, 2019 ¹⁴	3
Cooper, 2017 ¹⁵	4
Cottrell, 2019 ¹⁶	6
Dadarkhah, 2020 ¹⁷	2
Dagenais, 2021 ¹⁸	4
Davins Riu, 2018 ¹⁹	4
Day, 2020 ²⁰	5
De Bruijn, 2007 ²¹	3
De Oliveira Silva, 2020 ²²	4
de Thurah, 2018 ²³	4
Dear, 2018 ²⁴	4
Dear, 2015 ²⁵	4
Dear, 2021 ²⁶	4
Dear, 2016 ²⁷	4
Dear, 2013 ²⁸	4
Devineni, 2005 ²⁹	4
Dobson, 2014 ³⁰	5
Doiron-Cadrin, 2016 ³¹	6
Doiron-Cadrin, 2020 ³²	6
Domenech, 2013 ³³	4
Domenech, 2018 ³⁴	4
Fanning, 2020 ³⁵	4

Citation	Exclusion Reason
Fatoye, 2020 ³⁶	2
Faux, 2018 ³⁷	4
Finkelstein, 2020 ³⁸	3
Fioratti, 2020 ³⁹	2
Fjeldstad, 2016 ⁴⁰	3
Flynn, 2017 ⁴¹	4
Fowler, 2019 ⁴²	4
Friedman, 2019 ⁴³	4
Friesen, 2017 ⁴⁴	4
Galea Holmes, 2019 ⁴⁵	4
Gannon, 2019 ⁴⁶	5
Geraghty, 2020 ⁴⁷	4
Gialanella, 2017 ⁴⁸	4
Gohir, 2021 ⁴⁹	4
Hale, 2021 ⁵⁰	6
Hayes, 2014 ⁵¹	4
Heapy, 2020 ⁵²	4
Heapy, 2017 ⁵³	4
Hearn, 2018 ⁵⁴	4
Hemphill, 2021 ⁵⁵	4
Hernando-Garijo, 2021 ⁵⁶	4
Hinman, 2020 ⁵⁷	6
Isrctn, 2020 ⁵⁸	1
Jacobs, 2021 ⁵⁹	6
Jay, 2014 ⁶⁰	3
Jongen, 2020 ⁶¹	3
Khan, 2020 ⁶²	4
Klaren, 2014 ⁶³	3
Kline, 2019 ⁶⁴	4
Konstantinou, 2020 ⁶⁵	4
Kosterink, 2010 ⁶⁶	4
Kowatsch, 2021 ⁶⁷	5
Kristjansdottir, 2013 ⁶⁸	4
Kristjansdottir, ⁶⁹	4
Kroenke, 2019 ⁷⁰	4
Lamargue, 2020 ⁷¹	3
Landtblom, 2019 ⁷²	3
Lee, 2016 ⁷³	1
Lee, 2018 ⁷⁴	2
Licciardone, 2020 ⁷⁵	4

Citation	Exclusion Reason
Lowe, 2021 ⁷⁶	1
Mace, 2021 ⁷⁷	5
Malliaras, 2020 ⁷⁸	6
Mariano, 2021 ⁷⁹	6
Martin, 2019 ⁸⁰	4
Mayer, 2020 ⁸¹	4
Mbada, 2019 ⁸²	4
McDonald, 2013 ⁸³	5
McDonald, 2012 ⁸⁴	4
Mecklenburg, 2018 ⁸⁵	4
Mesa-Castrillon, 2021 ⁸⁶	6
Moessner, 2012 ⁸⁷	4
Moessner, 2014 ⁸⁸	4
Monreal-Bartolome, 2019 ⁸⁹	5
Moss-Morris, 2015 ⁹⁰	3
Motl, 2018 ⁹¹	3
Motl, 2019 ⁹²	3
Moumane, 2015 ⁹³	1
Muller, 2016 ⁹⁴	4
Müller, 2017 ⁹⁵	4
Nct, 2021 ⁹⁶	1
Nct, 2020 ⁹⁷	4
Nct, 2020 ⁹⁸	6
Nelligan, 2019 ⁹⁹	4
Palacin-Marin, 2013 ¹⁰⁰	4
Palyo, 2012 ¹⁰¹	6
Pardo, 2016 ¹⁰²	3
Paul, 2019 ¹⁰³	4
Peolsson, 2017 ¹⁰⁴	4
Peolsson, 2019 ¹⁰⁵	4
Peters, 2017 ¹⁰⁶	4
Petrozzi, 2019 ¹⁰⁷	4
Pilutti, 2014 ¹⁰⁸	3
Prvu Bettger, 2020 ¹⁰⁹	3
Raiszadeh, 2021 ¹¹⁰	4
Rickardsson, 2021 ¹¹¹	4
Rickardsson, 2020 ¹¹²	4
Robb, 2019 ¹¹³	3
Robb, 2016 ¹¹⁴	3
Robson, 2019 ¹¹⁵	4

Citation	Exclusion Reason
Rutledge, 2018 ¹¹⁶	5
Sandsjo, 2010 ¹¹⁷	4
Sarig Bahat, 2018 ¹¹⁸	4
Shaw, 2017 ¹¹⁹	1
Shebib, 2019 ¹²⁰	4
Shigaki, 2013 ¹²¹	4
Slattery, 2019 ¹²²	4
Smith, 2019 ¹²³	4
Steiner, 2020 ¹²⁴	3
Tam, 2019 ¹²⁵	3
Tan, 2015 ¹²⁶	4
Tarakci, 2021 ¹²⁷	3
Taylor-Gjevre, 2018 ¹²⁸	4
Thurah, 2017 ¹²⁹	1
Toelle, 2019 ¹³⁰	4
Trompetter, 2015 ¹³¹	4
Trompetter, 2015 ¹³²	4
Vallejo, 2015 ¹³³	4
van Beek, 2020 ¹³⁴	3
van den Berg, 2007 ¹³⁵	3
van Tilburg, 2021 ¹³⁶	4
Vranceanu, 2021 ¹³⁷	3
Williamson, 2017 ¹³⁸	1
Yeo, 2021 ¹³⁹	4
Yilmaz Yelvar, 2017 ¹⁴⁰	4
Ziegenfuss, 2018 ¹⁴¹	1

EXCLUDED STUDIES REFERENCE LIST

1. Ahn H, Galle K, Mathis KB, et al. Feasibility and efficacy of remotely supervised cranial electrical stimulation for pain in older adults with knee osteoarthritis: A randomized controlled pilot study. *Journal of Clinical Neuroscience*. 2020;77:128-133.
2. Amorim AB, Pappas E, Simic M, et al. Integrating Mobile health and Physical Activity to reduce the burden of Chronic low back pain Trial (IMPACT): a pilot trial protocol. *BMC Musculoskeletal Disorders*. 2016;17:36.
3. Azma K, RezaSoltani Z, Rezaeimoghaddam F, Dadarkhah A, Mohsenolhosseini S. Efficacy of tele-rehabilitation compared with office-based physical therapy in patients with knee osteoarthritis: A randomized clinical trial. *Journal of Telemedicine & Telecare*. 2018;24(8):560-565.

4. Bekkelund SI, Müller KI. Video consultations in medication overuse headache. A randomized controlled trial. *Brain and Behavior*. 2019;9(7).
5. Bennell KL, Keating C, Lawford BJ, et al. Better Knee, Better Me TM: effectiveness of two scalable health care interventions supporting self-management for knee osteoarthritis - protocol for a randomized controlled trial. *BMC Musculoskeletal Disorders*. 2020;21(1):160.
6. Bennell KL, Nelligan R, Dobson F, et al. Effectiveness of an Internet-Delivered Exercise and Pain-Coping Skills Training Intervention for Persons With Chronic Knee Pain: A Randomized Trial. *Annals of Internal Medicine*. 2017;166(7):453-462.
7. Berglind D, Nyberg G, Willmer M, Persson M, Wells M, Forsell Y. An eHealth program versus a standard care supervised health program and associated health outcomes in individuals with mobility disability: study protocol for a randomized controlled trial. *Trials [Electronic Resource]*. 2018;19(1):258.
8. Boersma K, Sodermark M, Hesser H, Flink IK, Gerdle B, Linton SJ. Efficacy of a transdiagnostic emotion-focused exposure treatment for chronic pain patients with comorbid anxiety and depression: a randomized controlled trial. *Pain*. 2019;160(8):1708-1718.
9. Buhrman M, Faltenhag S, Strom L, Andersson G. Controlled trial of Internet-based treatment with telephone support for chronic back pain. *Pain*. 2004;111(3):368-377.
10. Buhrman M, Skoglund A, Husell J, et al. Guided internet-delivered acceptance and commitment therapy for chronic pain patients: a randomized controlled trial. *Behaviour Research & Therapy*. 2013;51(6):307-315.
11. Burke D, Lennon O, Blake C, et al. An internet-delivered cognitive behavioural therapy pain management programme for spinal cord injury pain: A randomized controlled trial. *European Journal of Pain*. 2019;23(7):1264-1282.
12. Carlos-Vivas J, Perez-Gomez J, Delgado-Gil S, et al. Cost-Effectiveness of "Tele-Square Step Exercise" for Falls Prevention in Fibromyalgia Patients: A Study Protocol. *International Journal of Environmental Research & Public Health [Electronic Resource]*. 2020;17(3):21.
13. Castro-Sanchez AM, Mataran-Penarrocha GA, Gomez-Garcia S, et al. Study protocol randomised controlled trial comparison of cost-utility and cost-effectiveness of a face-to-face rehabilitation programme versus a telemedicine programme in the treatment of patients with chronic low back pain. *BMJ Open*. 2020;10(12):e040633.
14. Cavalera C, Rovaris M, Mendozzi L, et al. Online meditation training for people with multiple sclerosis: A randomized controlled trial. *Multiple Sclerosis*. 2019;25(4):610-617.
15. Cooper K, Klein S, Smith BH, Schofield P. Peer support for community dwelling older adults with chronic low back pain: a mixed-methods feasibility study. *Physiotherapy*. 2017;103:e117-e118.
16. Cottrell MA, O'Leary SP, Raymer M, Hill AJ, Comans T, Russell TG. Does telerehabilitation result in inferior clinical outcomes compared with in-person care for the

management of chronic musculoskeletal spinal conditions in the tertiary hospital setting? A non-randomised pilot clinical trial. *Journal of telemedicine and telecare*. 2019;1357633X19887265.

17. Dadarkhah A, Rezaimoghadam F, Najafi S, Mohebi B, Azarakhsh A, Rezasoltani Z. Remote Versus in-Person Exercise Instruction for Chronic Nonspecific Low Back Pain Lasting 12 Weeks or Longer: A Randomized Clinical Trial. *Journal of the National Medical Association*. 2020;18:18.
18. Dagenais S, Hayflinger DC, Mayer JM. Economic Evaluation of an Extended Telehealth Worksite Exercise Intervention to Reduce Lost Work Time from Low Back Pain in Career Firefighters. *Journal of Occupational Rehabilitation*. 2021;31(2):431-443.
19. Davins Riu M, Borràs Pérez X, Artigas Raventós V, Palomera Fanegas E, Serra Prat M, Alós Villacrosa J. Use of Telehealth as a New Model for Following Intermittent Claudication and Promoting Patient Expertise. *Telemedicine journal and e-health : the official journal of the American Telemedicine Association*. 2018;24(10):773-781.
20. Day MA, Ehde DM, Burns J, et al. A randomized trial to examine the mechanisms of cognitive, behavioral and mindfulness-based psychosocial treatments for chronic pain: Study protocol. *Contemporary Clinical Trials*. 2020;93:106000.
21. De Bruijn C, de Bie R, Geraets J, et al. General practitioners apply the usual care for shoulder complaints better than expected--analysis of videotaped consultations. *BMC Family Practice*. 2007;8:13.
22. De Oliveira Silva D, Pazzinatto MF, Crossley KM, Azevedo FM, Barton CJ. Novel Stepped Care Approach to Provide Education and Exercise Therapy for Patellofemoral Pain: Feasibility Study. *Journal of Medical Internet Research*. 2020;22(7):e18584.
23. de Thurah A, Stengaard-Pedersen K, Axelsen M, et al. Tele-Health Followup Strategy for Tight Control of Disease Activity in Rheumatoid Arthritis: Results of a Randomized Controlled Trial. *Arthritis care & research*. 2018;70(3):353-360.
24. Dear BF, Gandy M, Karin E, et al. The Pain Course: 12- and 24-Month Outcomes From a Randomized Controlled Trial of an Internet-Delivered Pain Management Program Provided With Different Levels of Clinician Support. *Journal of Pain*. 2018;19(12):1491-1503.
25. Dear BF, Gandy M, Karin E, et al. The Pain Course: a randomised controlled trial examining an internet-delivered pain management program when provided with different levels of clinician support. *Pain*. 2015;156(10):1920-1935.
26. Dear BF, Karin E, Fogliati R, et al. A Cost-effectiveness Analysis of an Internet-delivered Pain Management Program Delivered With Different Levels of Clinician Support: Results From a Randomised Controlled Trial. *Journal of Pain*. 2021;22(3):344-358.
27. Dear BF, Gandy M, Karin E, et al. The Pain Course: exploring predictors of clinical response to an Internet-delivered pain management program. *Pain*. 2016;157(10):2257-2268.

28. Dear BF, Titov N, Perry KN, et al. The Pain Course: a randomised controlled trial of a clinician-guided Internet-delivered cognitive behaviour therapy program for managing chronic pain and emotional well-being. *Pain*. 2013;154(6):942-950.
29. Devineni T, Blanchard EB. A randomized controlled trial of an internet-based treatment for chronic headache. *Behaviour Research & Therapy*. 2005;43(3):277-292.
30. Dobson F, Hinman RS, French S, et al. Internet-mediated physiotherapy and pain coping skills training for people with persistent knee pain (IMPACT - knee pain): a randomised controlled trial protocol. *BMC Musculoskeletal Disorders*. 2014;15:279.
31. Doiron-Cadrin P, Kairy D, Vendittoli PA, Lowry V, Poitras S, Desmeules F. Effects of a tele-prehabilitation program or an in-person prehabilitation program in surgical candidates awaiting total hip or knee arthroplasty: Protocol of a pilot single blind randomized controlled trial. *Contemporary Clinical Trials Communications*. 2016;4:192-198.
32. Doiron-Cadrin P, Kairy D, Vendittoli PA, Lowry V, Poitras S, Desmeules F. Feasibility and preliminary effects of a tele-prehabilitation program and an in-person prehabilitation program compared to usual care for total hip or knee arthroplasty candidates: a pilot randomized controlled trial. *Disability and rehabilitation*. 2020;42(7):989-998.
33. Domenech J, Banos R, Penalver L, et al. Design considerations of a randomized clinical trial on a cognitive behavioural intervention using communication and information technologies for managing chronic low back pain. *BMC Musculoskeletal Disorders*. 2013;14:142.
34. Domenech J, Penalver L, Rio ED, et al. Cognitive behavioural therapy supported with information and communication technologies in the treatment of chronic low back pain: a randomized clinical trial. *European spine journal*. 2018;27.
35. Fanning J, Brooks AK, Ip E, et al. A Mobile Health Behavior Intervention to Reduce Pain and Improve Health in Older Adults With Obesity and Chronic Pain: The MORPH Pilot Trial. *Frontiers in Digital Health*. 2020;2.
36. Fatoye F, Gebrye T, Fatoye C, et al. The Clinical and Cost-Effectiveness of Telerehabilitation for People With Nonspecific Chronic Low Back Pain: Randomized Controlled Trial. *JMIR MHealth and UHealth*. 2020;8(6):e15375.
37. Faux SG, Gardner T, Schultz R, et al. 'Reboot Online': a randomised controlled trial demonstrating that an internet-delivered multidisciplinary pain management program is effective in chronic pain. *Neurorehabilitation and neural repair*. 2018;32(4-5):354-355.
38. Finkelstein J, Jeong I, Karpatkin H. Physical telerehabilitation ameliorates impact of multiple sclerosis in a randomized control trial. *Multiple sclerosis journal*. 2020;26(1 SUPPL):159-.
39. Fioratti I, Saragiotto BT, Reis FJJ, et al. Evaluation of the efficacy of an internet-based pain education and exercise program for chronic musculoskeletal pain in comparison with online self-management booklet: a protocol of a randomised controlled trial with assessor-blinded, 12-month follow-up, and economic evaluation. *BMC Musculoskeletal Disorders*. 2020;21(1):404.

40. Fjeldstad C, Thiessen A, Pardo G. Telerehabilitation in multiple sclerosis: results of a randomized, 3-arm, rater blinded, feasibility and efficacy pilot study; patient-reported outcomes report. *Multiple sclerosis*. 2016;22(390).
41. Flynn DM, Eaton LH, McQuinn H, et al. TelePain: Primary Care Chronic Pain Management through Weekly Didactic and Case-based Telementoring. *Contemporary Clinical Trials Communications*. 2017;8:162-166.
42. Fowler CA, Ballistrea LM, Mazzone KE, et al. A virtual reality intervention for fear of movement for Veterans with chronic pain: protocol for a feasibility study. *Pilot & Feasibility Studies*. 2019;5:146.
43. Friedman DI, Rajan B, Seidmann A. A randomized trial of telemedicine for migraine management. *Cephalalgia*. 2019;39(12):1577-1585.
44. Friesen LN, Hadjistavropoulos HD, Schneider LH, Alberts NM, Titov N, Dear BF. Examination of an Internet-Delivered Cognitive Behavioural Pain Management Course for Adults with Fibromyalgia: A Randomized Controlled Trial. *Pain*. 2017;158(4):593-604.
45. Galea Holmes MN, Weinman JA, Bearne LM. A randomized controlled feasibility trial of a home-based walking behavior-change intervention for people with intermittent claudication. *Journal of vascular nursing : official publication of the Society for Peripheral Vascular Nursing*. 2019;37(2):135-143.
46. Gannon J, Atkinson JH, Chircop-Rollick T, et al. Telehealth Therapy Effects of Nurses and Mental Health Professionals From 2 Randomized Controlled Trials for Chronic Back Pain. *Clinical Journal of Pain*. 2019;35(4):295-303.
47. Geraghty AWA, Roberts L, Hill J, et al. Supporting self-management of low back pain with an internet intervention in primary care: a protocol for a randomised controlled trial of clinical and cost-effectiveness (SupportBack 2). *BMJ Open*. 2020;10(8):e040543.
48. Gialanella B, Etori T, Faustini S, et al. Home-Based Telemedicine in Patients with Chronic Neck Pain. *American Journal of Physical Medicine & Rehabilitation*. 2017;96(5):327-332.
49. Gohir SA, Eek F, Kelly A, Abhishek A, Valdes AM. Effectiveness of Internet-Based Exercises Aimed at Treating Knee Osteoarthritis: The iBEAT-OA Randomized Clinical Trial. *JAMA Network Open*. 2021;4(2):e210012.
50. Hale L, Devan H, Davies C, et al. Clinical and cost-effectiveness of an online-delivered group-based pain management programme in improving pain-related disability for people with persistent pain-protocol for a non-inferiority randomised controlled trial (iSelf-help trial). *BMJ Open*. 2021;11(2):e046376.
51. Hayes S, Hogan M, Dowd H, et al. Comparing the clinical-effectiveness and cost-effectiveness of an internet-delivered Acceptance and Commitment Therapy (ACT) intervention with a waiting list control among adults with chronic pain: study protocol for a randomised controlled trial. *BMJ Open*. 2014;4(7):e005092.

52. Heapy AA, Driscoll MA, Buta E, et al. Co-Operative Pain Education and Self-management (COPES) Expanding Treatment for Real-World Access (ExTRA): Pragmatic Trial Protocol. *Pain Medicine*. 2020;21(12 Suppl 2):S21-S28.
53. Heapy AA, Higgins DM, Goulet JL, et al. Interactive Voice Response-Based Self-management for Chronic Back Pain: The COPES Noninferiority Randomized Trial. *JAMA Internal Medicine*. 2017;177(6):765-773.
54. Hearn JH, Finlay KA. Internet-delivered mindfulness for people with depression and chronic pain following spinal cord injury: a randomized, controlled feasibility trial. *Spinal Cord*. 2018;56(8):750-761.
55. Hemphill S, Rodriguez S, Wang E, et al. Virtual Reality Augments Movement during Physical Therapy: A Pragmatic Randomized Trial. *American Journal of Physical Medicine & Rehabilitation*. 2021;30:30.
56. Hernando-Garijo I, Ceballos-Laita L, Mingo-Gomez MT, et al. Immediate Effects of a Telerehabilitation Program Based on Aerobic Exercise in Women with Fibromyalgia. *International Journal of Environmental Research & Public Health [Electronic Resource]*. 2021;18(4):20.
57. Hinman RS, Kimp AJ, Campbell PK, et al. Technology versus tradition: a non-inferiority trial comparing video to face-to-face consultations with a physiotherapist for people with knee osteoarthritis. Protocol for the PEAK randomised controlled trial. *BMC Musculoskeletal Disorders*. 2020;21(1):522.
58. Isrctn. E-rehab for Knee Pain. <http://www.who.int/trialssearch/Trial2.aspx?TrialID=ISRCTN15564385>. 2020.
59. Jacobs CA, Mace RA, Greenberg J, et al. Development of a mind body program for obese knee osteoarthritis patients with comorbid depression. *Contemporary Clinical Trials Communications*. 2021;21:100720.
60. Jay K, Schraefel MC, Brandt M, Andersen LL. Effect of video-based versus personalized instruction on errors during elastic tubing exercises for musculoskeletal pain: a randomized controlled trial. *BioMed Research International*. 2014;2014:790937.
61. Jongen PJ, Ter Veen G, Lemmens W, Donders R, van Noort E, Zeinstra E. The Interactive Web-Based Program MSmonitor for Self-Management and Multidisciplinary Care in Persons With Multiple Sclerosis: Quasi-Experimental Study of Short-Term Effects on Patient Empowerment. *Journal of Medical Internet Research*. 2020;22(3):e14297.
62. Khan F, Granville N, Malkani R, Chathampally Y. Health-Related Quality of Life Improvements in Systemic Lupus Erythematosus Derived from a Digital Therapeutic Plus Tele-Health Coaching Intervention: Randomized Controlled Pilot Trial. *Journal of Medical Internet Research*. 2020;22(10):e23868.

63. Klaren RE, Hubbard EA, Motl RW. Efficacy of a behavioral intervention for reducing sedentary behavior in persons with multiple sclerosis: a pilot examination. *American Journal of Preventive Medicine*. 2014;47(5):613-616.
64. Kline PW, Melanson EL, Sullivan WJ, et al. Improving Physical Activity Through Adjunct Telerehabilitation Following Total Knee Arthroplasty: Randomized Controlled Trial Protocol. *Physical Therapy*. 2019;99(1):37-45.
65. Konstantinou K, Lewis M, Dunn KM, et al. Stratified care versus usual care for management of patients presenting with sciatica in primary care (SCOPiC): a randomised controlled trial. *The Lancet Rheumatology*. 2020;2(7):e401-e411.
66. Kosterink SM, Huis in 't Veld RM, Cagnie B, Hasenbring M, Vollenbroek-Hutten MM. The clinical effectiveness of a myofeedback-based teletreatment service in patients with non-specific neck and shoulder pain: a randomized controlled trial. *Journal of Telemedicine & Telecare*. 2010;16(6):316-321.
67. Kowatsch T, Lohse KM, Erb V, et al. Hybrid Ubiquitous Coaching With a Novel Combination of Mobile and Holographic Conversational Agents Targeting Adherence to Home Exercises: Four Design and Evaluation Studies. *Journal of Medical Internet Research*. 2021;23(2):e23612.
68. Kristjansdottir OB, Fors EA, Eide E, et al. A smartphone-based intervention with diaries and therapist-feedback to reduce catastrophizing and increase functioning in women with chronic widespread pain: randomized controlled trial. *Journal of Medical Internet Research*. 2013;15(1):e5.
69. Kristjansdottir OB, Fors EA, Eide E, et al. The effect of web-based diaries and situational feedback on catastrophizing in women with chronic widespread pain - A randomized trial. *European Journal of Pain Supplements*. 5(1):259-260.
70. Kroenke K, Baye F, Lourens SG, et al. Automated Self-management (ASM) vs. ASM-Enhanced Collaborative Care for Chronic Pain and Mood Symptoms: the CAMMPS Randomized Clinical Trial. *Journal of General Internal Medicine*. 2019;34(9):1806-1814.
71. Lamargue D, Koubiyr I, Deloire M, et al. Effect of cognitive rehabilitation on neuropsychological and semiecological testing and on daily cognitive functioning in multiple sclerosis: The REACTIV randomized controlled study. *Journal of the Neurological Sciences*. 2020;415:116929.
72. Landtblom AM, Guala D, Martin C, et al. RebiQoL: A randomized trial of telemedicine patient support program for health-related quality of life and adherence in people with MS treated with Rebif. *PLoS ONE [Electronic Resource]*. 2019;14(7):e0218453.
73. Lee MH, Wu HC, Chen WC, Chen YF. Multidisciplinary self-management telecare system may improve quality of life in patients with interstitial cystitis / bladder pain syndrome (IC/BPS)-a randomized controlled trial. *Neurourology and urodynamics*. 2016;35:S94-S95.

74. Lee MH, Wu HC, Tseng CM, Ko TL, Weng TJ, Chen YF. Health Education and Symptom Flare Management Using a Video-based m-Health System for Caring Women With IC/BPS. *Urology*. 2018;119:62-69.
75. Licciardone JC, Pandya V. Feasibility Trial of an eHealth Intervention for Health-Related Quality of Life: Implications for Managing Patients with Chronic Pain during the COVID-19 Pandemic. *Healthcare*. 2020;8(4):01.
76. Lowe R, Barlow C, Lloyd B, et al. Lifestyle, Exercise and Activity Package for People living with Progressive Multiple Sclerosis (LEAP-MS): adaptations during the COVID-19 pandemic and remote delivery for improved efficiency. *Trials*. 2021;22(1):286.
77. Mace RA, Doorley JD, Popok PJ, Vranceanu AM. Live Video Adaptations to a Mind-Body Activity Program for Chronic Pain and Cognitive Decline: Protocol for the Virtual Active Brains Study. *JMIR Research Protocols*. 2021;10(1):e25351.
78. Malliaras P, Cridland K, Hopmans R, et al. Internet and Telerehabilitation-Delivered Management of Rotator Cuff-Related Shoulder Pain (INTEL Trial): Randomized Controlled Pilot and Feasibility Trial. *JMIR MHealth and UHealth*. 2020;8(11):e24311.
79. Mariano TY, Wan L, Edwards RR, Lazaridou A, Ross EL, Jamison RN. Online group pain management for chronic pain: Preliminary results of a novel treatment approach to teletherapy. *Journal of Telemedicine & Telecare*. 2021;27(4):209-216.
80. Martin KR, Bachmair EM, Aucott L, et al. Protocol for a multicentre randomised controlled parallel-group trial to compare the effectiveness of remotely delivered cognitive-behavioural and graded exercise interventions with usual care alone to lessen the impact of fatigue in inflammatory rheumatic diseases (LIFT). *BMJ Open*. 2019;9(1).
81. Mayer JM, Lane CL, Brady O, et al. Comparison of Supervised and Telehealth Delivery of Worksite Exercise for Prevention of Low Back Pain in Firefighters: A Cluster Randomized Trial. *Journal of Occupational & Environmental Medicine*. 2020;62(10):e586-e592.
82. Mbada CE, Olaye MI, Dada OO, et al. Comparative Efficacy of Clinic-Based and Telerehabilitation Application of Mckenzie Therapy in Chronic Low-Back Pain. *International Journal of Telerehabilitation*. 2019;11(1):41-58.
83. McDonald DD, Walsh S, Vergara C, Gifford T. Effect of a virtual pain coach on pain management discussions: a pilot study. *Pain Management Nursing*. 2013;14(4):200-209.
84. McDonald DD, Walsh S, Vergara C, Gifford T, Weiner DK. The effect of a Spanish virtual pain coach for older adults: a pilot study. *Pain Medicine*. 2012;13(11):1397-1406.
85. Mecklenburg G, Smittenaar P, Erhart-Hledik JC, Perez DA, Hunter S. Effects of a 12-Week Digital Care Program for Chronic Knee Pain on Pain, Mobility, and Surgery Risk: Randomized Controlled Trial. *Journal of Medical Internet Research*. 2018;20(4):e156.

86. Mesa-Castrillon CI, Simic M, Ferreira ML, et al. EHealth to empower patients with musculoskeletal pain in rural Australia (EMPower) a randomised clinical trial: study protocol. *BMC Musculoskeletal Disorders*. 2021;22(1):11.
87. Moessner M, Schiltenswolf M, Neubauer E. Internet-based aftercare for patients with back pain-a pilot study. *Telemedicine Journal & E-Health*. 2012;18(6):413-419.
88. Moessner M, Aufdermauer N, Baier C, et al. [Efficacy of an internet-delivered aftercare program for patients with chronic back pain]. *Psychotherapie, Psychosomatik, Medizinische Psychologie*. 2014;64(2):47-53.
89. Monreal-Bartolome A, Barcelo-Soler A, Castro A, et al. Efficacy of a blended low-intensity internet-delivered psychological programme in patients with multimorbidity in primary care: study protocol for a randomized controlled trial. *BMC Psychiatry*. 2019;19(1):66.
90. Moss-Morris R, Bogosian A, Chadwick P, McCrone P, Norton S. A pilot randomized controlled trial of the clinical and cost effectiveness of a skype delivered group mindfulness intervention for distressed people with progressive multiple sclerosis. *Psychosomatic medicine*. 2015;77(3):A20-A21.
91. Motl RW, Sandroff BM, Wingo BC, et al. Phase-III, randomized controlled trial of the behavioral intervention for increasing physical activity in multiple sclerosis: Project BIPAMS. *Contemporary Clinical Trials*. 2018;71:154-161.
92. Motl RW, Backus D, Neal WN, et al. Rationale and design of the STEP for MS Trial: Comparative effectiveness of Supervised versus Telerehabilitation Exercise Programs for Multiple Sclerosis. *Contemporary Clinical Trials*. 2019;81:110-122.
93. Moumane N, Lozeron P, Viala K, et al. A medico-economic study with the stepped wedge cluster randomized controlled trial design to assess efficiency (cost-effectiveness) of a telemedicine system for the management of home-based ivig treated patients with chronic inflammatory neuropathies. *Journal of the peripheral nervous system : JPNS*. 2015;20(2):195-196.
94. Muller KI, Alstadhaug KB, Bekkelund SI. Acceptability, Feasibility, and Cost of Telemedicine for Nonacute Headaches: A Randomized Study Comparing Video and Traditional Consultations. *Journal of Medical Internet Research*. 2016;18(5):e140.
95. Müller KI, Alstadhaug KB, Bekkelund SI. Telemedicine in the management of non-acute headaches: A prospective, open-labelled non-inferiority, randomised clinical trial. *Cephalalgia*. 2017;37(9):855-863.
96. Nct. Feasibility and Impact of a Tele-rehabilitation Program in Patients With Chronic and Non-specific Neck Pain. <https://clinicaltrials.gov/show/NCT04841642>. 2021.
97. Nct. TelemEdicine-bAsed Cognitive TherapY for Migraines. <https://clinicaltrials.gov/show/NCT04613362>. 2020.

98. Nct. EMG Biofeedback Treatment for Chronic Low Back Pain. <https://clinicaltrials.gov/show/NCT04607460>. 2020.
99. Nelligan RK, Hinman RS, Kasza J, Bennell KL. Effectiveness of internet-delivered education and home exercise supported by behaviour change SMS on pain and function for people with knee osteoarthritis: a randomised controlled trial protocol. *BMC Musculoskeletal Disorders*. 2019;20(1):342.
100. Palacin-Marin F, Esteban-Moreno B, Olea N, Herrera-Viedma E, Arroyo-Morales M. Agreement between telerehabilitation and face-to-face clinical outcome assessments for low back pain in primary care. *Spine*. 2013;38(11):947-952.
101. Palyo SA, Schopmeyer KA, McQuaid JR. Tele-pain management: Use of videoconferencing technology in the delivery of an integrated cognitive-behavioral and physical therapy group intervention. *Psychological Services*. 2012;9(2):200-202.
102. Pardo G, Thiessen A, Fjeldstad C. Telerehabilitation in multiple sclerosis: results of a randomized, 3-arm, rater blinded, feasibility and efficacy pilot study; gait and balance report. *Multiple sclerosis*. 2016;22(30).
103. Paul L, Renfrew L, Freeman J, et al. Web-based physiotherapy for people affected by multiple sclerosis: a single blind, randomized controlled feasibility study. *Clinical Rehabilitation*. 2019;33(3):473-484.
104. Peolsson A, Landen Ludvigsson M, Peterson G. Neck-specific exercises with internet-based support compared to neck-specific exercises at a physiotherapy clinic for chronic whiplash-associated disorders: study protocol of a randomized controlled multicentre trial. *BMC Musculoskeletal Disorders*. 2017;18(1):524.
105. Peolsson A, Peterson G, Hermansen A, Ludvigsson ML, Dederling A, Lofgren H. Physiotherapy after anterior cervical spine surgery for cervical disc disease: study protocol of a prospective randomised study to compare internet-based neck-specific exercise with prescribed physical activity. *BMJ Open*. 2019;9(2):e027387.
106. Peters ML, Smeets E, Feijge M, et al. Happy Despite Pain: A Randomized Controlled Trial of an 8-Week Internet-delivered Positive Psychology Intervention for Enhancing Well-being in Patients With Chronic Pain. *Clinical Journal of Pain*. 2017;33(11):962-975.
107. Petrozzi MJ, Leaver A, Ferreira PH, Rubinstein SM, Jones MK, Mackey MG. Addition of MoodGYM to physical treatments for chronic low back pain: A randomized controlled trial. *Chiropractic & manual therapies*. 2019;27:54.
108. Pilutti LA, Dlugonski D, Sandroff BM, Klaren R, Motl RW. Randomized controlled trial of a behavioral intervention targeting symptoms and physical activity in multiple sclerosis. *Multiple Sclerosis*. 2014;20(5):594-601.
109. Prvu Bettger J, Green CL, Holmes DN, et al. Effects of Virtual Exercise Rehabilitation In-Home Therapy Compared with Traditional Care After Total Knee Arthroplasty: VERITAS, a

Randomized Controlled Trial. *Journal of Bone & Joint Surgery - American Volume*. 2020;102(2):101-109.

110. Raiszadeh K, Tapicer J, Taitano L, Wu J, Shahidi B. In-Clinic Versus Web-Based Multidisciplinary Exercise-Based Rehabilitation for Treatment of Low Back Pain: Prospective Clinical Trial in an Integrated Practice Unit Model. *Journal of Medical Internet Research*. 2021;23(3):e22548.

111. Rickardsson J, Gentili C, Holmstrom L, et al. Internet-delivered acceptance and commitment therapy as microlearning for chronic pain: A randomized controlled trial with 1-year follow-up. *European Journal of Pain*. 2021;25(5):1012-1030.

112. Rickardsson J, Zetterqvist V, Gentili C, et al. Internet-delivered acceptance and commitment therapy (iACT) for chronic pain-feasibility and preliminary effects in clinical and self-referred patients. *Began with 2015*. 2020;6:27.

113. Robb JF, Hyland MH, Goodman AD. Comparison of telemedicine versus in-person visits for persons with multiple sclerosis: A randomized crossover study of feasibility, cost, and satisfaction. *Multiple Sclerosis and Related Disorders*. 2019;36:101258.

114. Robb JF, Hyland MH, Goodman AD. Comparison of cost, feasibility and satisfaction of telemedicine versus in-person visits for multiple sclerosis patients: a randomised cross-over study. *Multiple sclerosis*. 2016;22(147).

115. Robson EK, Kamper SJ, Davidson S, et al. Healthy Lifestyle Program (HeLP) for low back pain: protocol for a randomised controlled trial. *BMJ Open*. 2019;9(9):e029290.

116. Rutledge T, Atkinson JH, Holloway R, et al. Randomized Controlled Trial of Nurse-Delivered Cognitive-Behavioral Therapy Versus Supportive Psychotherapy Telehealth Interventions for Chronic Back Pain. *Journal of Pain*. 2018;19(9):1033-1039.

117. Sandsjo L, Larsman P, Huis in 't Veld RM, Vollenbroek-Hutten MM. Clinical evaluation of a myofeedback-based teletreatment service applied in the workplace: a randomized controlled trial. *Journal of Telemedicine & Telecare*. 2010;16(6):329-335.

118. Sarig Bahat H, Croft K, Carter C, Hoddinott A, Sprecher E, Treleven J. Remote kinematic training for patients with chronic neck pain: a randomised controlled trial. *European Spine Journal*. 2018;27(6):1309-1323.

119. Shaw M, Dobbs B, Pawlak N, Pau W, Charvet L. At-home transcranial direct current stimulation (tDCS) improves mood in multiple sclerosis: results from a randomized, sham-controlled trial. *Multiple sclerosis journal*. 2017;23(3):962-.

120. Shebib R, Bailey JF, Smittenaar P, Perez DA, Mecklenburg G, Hunter S. Randomized controlled trial of a 12-week digital care program in improving low back pain. *npj Digital Medicine*. 2019;2(1).

121. Shigaki CL, Smarr KL, Siva C, Ge B, Musser D, Johnson R. RAHelp: an online intervention for individuals with rheumatoid arthritis. *Arthritis care & research*. 2013;65(10):1573-1581.
122. Slattery BW, O'Connor LL, Haugh S, et al. Investigating the effectiveness of an online acceptance and commitment therapy (ACT) intervention versus a waiting list control condition on pain interference and quality of life in adults with chronic pain and multimorbidity: protocol for a randomised controlled trial. *BMJ Open*. 2019;9(5):e012671.
123. Smith J, Faux SG, Gardner T, et al. Reboot Online: A Randomized Controlled Trial Comparing an Online Multidisciplinary Pain Management Program with Usual Care for Chronic Pain. *Pain Medicine*. 2019;20(12):2385-2396.
124. Steiner B, Elgert L, Saalfeld B, et al. Health-Enabling Technologies for Telerehabilitation of the Shoulder: A Feasibility and User Acceptance Study. *Methods of Information in Medicine*. 2020;59(S 02):e90-e99.
125. Tam J, Lacaille D, Liu-Ambrose T, et al. Effectiveness of an online self-management tool, OPERAS (an On-demand Program to Empower Active Self-management), for people with rheumatoid arthritis: a research protocol. *Trials [Electronic Resource]*. 2019;20(1):712.
126. Tan G, Rintala DH, Jensen MP, Fukui T, Smith D, Williams W. A randomized controlled trial of hypnosis compared with biofeedback for adults with chronic low back pain. *European Journal of Pain*. 2015;19(2):271-280.
127. Tarakci E, Tarakci D, Hajebrahimi F, Budak M. Supervised exercises versus telerehabilitation. Benefits for persons with multiple sclerosis. *Acta Neurologica Scandinavica*. 2021;07:07.
128. Taylor-Gjevre R, Nair B, Bath B, et al. Addressing rural and remote access disparities for patients with inflammatory arthritis through video-conferencing and innovative inter-professional care models. *Musculoskeletal Care*. 2018;16(1):90-95.
129. Thurah A, Steengaard-Pedersen K, Axelsen M, et al. A TELE-health follow-up strategy for tight control of disease activity in rheumatoid arthritis: results of the non-inferiority randomised controlled trail (the Tera study). *Annals of the rheumatic diseases*. 2017;76:454-455.
130. Toelle TR, Utpadel-Fischler DA, Haas KK, Priebe JA. App-based multidisciplinary back pain treatment versus combined physiotherapy plus online education: a randomized controlled trial. *Npj Digital Medicine*. 2019;2:34.
131. Trompetter HR, Bohlmeijer ET, Fox JP, Schreurs KM. Psychological flexibility and catastrophizing as associated change mechanisms during online Acceptance & Commitment Therapy for chronic pain. *Behaviour Research & Therapy*. 2015;74:50-59.
132. Trompetter HR, Bohlmeijer ET, Veehof MM, Schreurs KM. Internet-based guided self-help intervention for chronic pain based on Acceptance and Commitment Therapy: a randomized controlled trial. *Journal of Behavioral Medicine*. 2015;38(1):66-80.

133. Vallejo MA, Ortega J, Rivera J, Comeche MI, Vallejo-Slocker L. Internet versus face-to-face group cognitive-behavioral therapy for fibromyalgia: A randomized control trial. *Journal of Psychiatric Research*. 2015;68:106-113.
134. van Beek JJW, van Wegen EEH, Rietberg MB, et al. Feasibility of a Home-Based Tablet App for Dexterity Training in Multiple Sclerosis: Usability Study. *JMIR MHealth and UHealth*. 2020;8(6):e18204.
135. van den Berg MH, Ronday HK, Peeters AJ, et al. Engagement and satisfaction with an Internet-based physical activity intervention in patients with rheumatoid arthritis. *Rheumatology*. 2007;46(3):545-552.
136. van Tilburg ML, Kloek CJJ, Pisters MF, et al. Stratified care integrated with eHealth versus usual primary care physiotherapy in patients with neck and/or shoulder complaints: protocol for a cluster randomized controlled trial. *BMC Musculoskeletal Disorders*. 2021;22(1):143.
137. Vranceanu AM, Bakhshaie J, Reichman M, et al. A Live Video Program to Prevent Chronic Pain and Disability in At-Risk Adults With Acute Orthopedic Injuries (Toolkit for Optimal Recovery): Protocol for a Multisite Feasibility Study. *JMIR Research Protocols*. 2021;10(4):e28155.
138. Williamson OD. 2017 - An online exercise program plus automated coping skills raining improved pain and function in chronic knee pain. *ACP Journal Club*. 2017;166(12):6-6.
139. Yeo SM, Lim JY, Do JG, Lim JY, In Lee J, Hwang JH. Effectiveness of interactive augmented reality-based telerehabilitation in patients with adhesive capsulitis: protocol for a multi-center randomized controlled trial. *BMC Musculoskeletal Disorders*. 2021;22(1):386.
140. Yilmaz Yelvar GD, Cirak Y, Dalkilinc M, Parlak Demir Y, Guner Z, Boydak A. Is physiotherapy integrated virtual walking effective on pain, function, and kinesiophobia in patients with non-specific low-back pain? Randomised controlled trial. *European Spine Journal*. 2017;26(2):538-545.
141. Ziegenfuss J, Benitez GV, Lawson K, Whitebird R, Grossman E, Friction JR. PACT-a transformative selfmanagement program for chronic pain utilizing online education and telehealth coaching. *Global advances in health and medicine*. 2018;7:223-224.

APPENDIX C. OUTCOMES REPORTED IN IDENTIFIED LITERATURE

Study	Type of outcome	Outcomes
<i>Psychologically Informed Intervention</i>		
Herbert, 2017 ¹⁵	Pain outcomes	<ul style="list-style-type: none"> - Brief Pain Inventory Short Form Interference Scale (BPI) - interference - Brief Pain Inventory Short Form Interference Scale (BPI) -severity - Patient Health Questionnaire (PHQ) - 9 - Chronic Pain Acceptance Questionnaire-revised (CPAQ) - Pain Anxiety Symptoms Scale-Short Form (PASS-20)
	Patient-reported functional measures	<ul style="list-style-type: none"> - West Haven-Yale Multidimensional Pain Inventory (MPI) - Activity
	Quality-of-life outcomes	<ul style="list-style-type: none"> - Medical Outcomes Study 12-Item Short Form Health Survey (SF12) - Mental Component Summary - Medical Outcomes Study 12-Item Short Form Health Survey (SF12) - Physical Component Summary
	Other patient-reported outcomes	<ul style="list-style-type: none"> - Depressive symptoms (PHQ-9) - Pittsburgh Sleep Quality Index (PSQI) - Credibility and Expectancy Questionnaire-Participant expectancies for improvement - Client Satisfaction Questionnaire (CSQ)
<i>Pilot Study</i>		
Doiron-Cadrin, 2020 ¹⁶	Patient-reported functional measures	<ul style="list-style-type: none"> - Total Lower Extremity Functional Scale (LEFS) - Total Western Ontario and McMaster universities osteoarthritis index (WOMAC) - pain (0–20) - Total Western Ontario and McMaster universities osteoarthritis index (WOMAC)-function (0–68) - Total Medical Outcomes Study 12-Item Short Form Health Survey (SF36) - physical component summary - Total Medical Outcomes Study 12-Item Short Form Health Survey (SF-36) - mental component summary
	Physical performance measures	<ul style="list-style-type: none"> - Total timed up and go - Total stair test - Total self-paced walk
	Other objective outcomes	<ul style="list-style-type: none"> - Adverse events - Recruitment rate

Study	Type of outcome	Outcomes
	Other patient-reported outcomes	<ul style="list-style-type: none"> - Technical issues using the software - Patient satisfaction - Number of telerehabilitation sessions - Compliance with the prehabilitation programs -The Global Rating of Change scale (GRC) -- patients perceived improvement/deterioration
Protocol Studies		
Hinman, 2020 ¹⁹	Pain outcomes	- Numerical rating scale
	Self-reported physical function outcomes	- Western Ontario and McMaster universities osteoarthritis index (WOMAC)
	Patient engagement outcomes	<ul style="list-style-type: none"> - Session completion rates - Adherence with strengthening program: 11-point numeric rating scale - Adherence with physical activity plan - 11-point numeric rating scale
	Quality-of-life outcomes	- Assessment of Quality of Life (AQoL)-6D
	Other patient-reported outcomes	<ul style="list-style-type: none"> - Physical Activity Scale for the Elderly (PASE) - Arthritis Self Efficacy Scale (8-item) - Participant-perceived global change (7-point Likert Scale) - Satisfaction with the physiotherapy consultations (7-point Likert scale) - Working Alliance Inventory Short Form - Convenience 11-point numeric rating scale - Co-interventions (self-report medications or any other treatments for knee pain) - Adverse events - Health service usage (self-report) - Participant time (self-report) - Physiotherapist time (self-report) - Participant travel (self-report) - Descriptive measures (self-report) (demographics, geographic residential location, employment, confidence with technology, etc.)
Hale, 2021 ¹⁷	Pain outcomes	<ul style="list-style-type: none"> - Brief Pain Inventory - Roland Morris Disability Questionnaire - Pain self-efficacy questionnaire - Pain catastrophizing scale
	Patient engagement outcomes	- Patient-reported engagement

Study	Type of outcome	Outcomes
	Quality-of-life outcomes	- Descriptive system for health-related quality of life (EQ-5D-5L)
	Other patient-reported outcomes	- Depression, Anxiety, Stress Scale (DASS-21) - Chronic pain acceptance questionnaire - Tampa scale for kinesiophobia - Current medications - Health care use - Acceptability and satisfaction - Adverse events
Mesa-Castrillon, 2021 ¹⁸	Pilot outcomes	- Acceptability (Self-reported satisfaction on overall experience with the study, accessibility of reaching mental health professional, time to get an appointment, cost of intervention, distance traveled, app and exercise equipment received)
	Pain outcomes	- Numerical rating scale - Pain self-efficacy questionnaire
	Self-reported physical function outcomes	- Patient-Specific Functional Scale - Western Ontario and McMaster universities osteoarthritis index (WOMAC) - IPAQ-short form
	Patient engagement outcomes	- Home practice - Session completion rates - Quality of life
	Other objective outcomes	- Recruitment rate - Follow-up rate
	Other patient-reported outcomes	- Roland-Morris Disability Questionnaire (RDQ) - International Physical Activity Questionnaire-Short Form (IPAQ-SF) - Adverse events - Medication and health care use - Distance travelled to utilize health care
<i>Registered Protocols in Trial Databases</i>		
Barton, 2019 ²⁵	Primary outcome	- Knee-related burden (KOOS4)
Bayley, 2019 ²⁴	Primary outcome	- Treatment satisfaction - Attrition
Groves-Williams, 2020 ²²	Primary outcome	- Feasibility
Palfai, 2020 ²³	Primary outcome	- Pain severity - Pain interference - Heavy drinking episodes - Average drinks per week
Damush, 2020 ²¹	Primary outcome	- Number of days of pain - Implementation
Bell, 2021 ²⁰	Primary outcome	- Feasibility

APPENDIX D. PEER REVIEW DISPOSITION

Question Text	Reviewer Number	Comment	Response
Are the objectives, scope, and methods for this review clearly described?	1	Yes	Thank you.
	3	Yes	Thank you
	4	Yes	Thank you
	5	Yes	Thank you
	6	Yes	Thank you
	7	Yes	Thank you
	8	Yes	Thank you
	Is there any indication of bias in our synthesis of the evidence?	1	No
3		No	Thank you
4		No	Thank you
5		No	Thank you
6		No	Thank you
7		No	Thank you
8		No	Thank you
Are you aware of any <u>published</u> or <u>unpublished</u> studies that we may have overlooked?		1	No
	3	No	Thank you
	4	No	Thank you
	5	No	Thank you
	6	No	Thank you
	7	Yes - o Schulz-Heik R.J., Meyer H., Mahoney L., et. al.: Results from a clinical yoga program for veterans: yoga via telehealth provides comparable satisfaction and health improvements to in-person yoga. BMC Complement Altern Med 2017; 17: pp. 198 o Results from a clinical yoga program for veterans: yoga via telehealth provides comparable satisfaction and health improvements to in-person yoga - PubMed (nih.gov)	Thank you. In collaboration with the VA operations leaders who nominated this topic, and the Technical Expert Panel who advised us on this review, we focused this review on <i>effectiveness of videoconference-delivered non-pharmacological chronic pain intervention</i> . These groups guided us on our eligibility for

	<p>this review. The study on yoga would not meet eligibility for several reasons (eg, population exposed to intervention of unknow chronic pain status, inclusion of hospitalized patients, not a randomized trial, not required to be more than one session).</p>
<p>8 Yes - A potential suggestion to improve the Evidence Synthesis Report is to broaden the inclusion criteria of the studies. Currently, the inclusion criteria leads to only 1 completed study included in the manuscript and thus the utility of this paper becomes limited for the intended audience. By broadening the inclusion criteria to include all studies that include videoconferencing of nonpharmacological interventions for chronic pain. Examples of additional articles that can be included are: Palyo, S. A., Schopmeyer, K. A., & McQuaid, J. R. (2012). Tele-pain management: Use of videoconferencing technology in the delivery of an integrated cognitive-behavioral and physical therapy group intervention. <i>Psychological Services</i>, 9(2), 200–202. https://doi.org/10.1037/a0025987 Glynn, L. H., Chen, J. A., Dawson, T. C., Gelman, H., & Zeliadt, S. B. (2021). Bringing chronic-pain care to rural veterans: A telehealth pilot program description. <i>Psychological Services</i>, 18(3), 310–318. https://doi.org/10.1037/ser0000408 Evaluating distance education of a mindfulness-based meditation programme for chronic pain management by Jacqueline Gardner-Nix et al., 2008 (https://doi.org/10.1258/jtt.2007.070811)</p>	<p>Thank you for these suggested studies. We included studies that were of greatest value to answer the key areas of uncertainty of our nominating VA operations partners. Their main focus was on effectiveness of videoconferencing compared to in-person non-pharmacological pain management. That is, the focus was on “Does this work?” and not “How this works?”. As such, we limited to comparative study designs best suited to address individual-level outcomes. We did not include descriptive studies (eg., no data on relevant outcomes) and quasi-experimental designs. We added a horizon scan to this review as our TEP advised us that this literature on effectiveness was</p>

<p>Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report.</p>	<p>1 Page v, line 54, please list Dr Beck's title as: Deputy Under Secretary for Health for Policy and Services</p>	<p>likely nascent at this time.</p>
	<p>3 This is an excellent report. I'm wondering if the authors might want the report to cite on p. 6 the most recent CPGs for non-pharmacological options for pain management, the evidence that was used to shape the CPGs, and the National Pain Strategy:</p>	<p>Thank you, this change has been made.</p>
	<p>Skelly AC, Chou R, Dettori JR, et al. Noninvasive Nonpharmacological Treatment for Chronic Pain: A Systematic Review Update. Agency for Healthcare Research and Quality (US); 2020. http://www.ncbi.nlm.nih.gov/books/NBK556229/</p>	<p>We have added these references. Thank you.</p>
	<p>Qaseem A, Wilt TJ, McLean RM, Forciea MA, et al. Clinical Guidelines Committee of the American College of Physicians. Noninvasive Treatments for Acute, Subacute, and Chronic Low Back Pain: A Clinical Practice Guideline from the American College of Physicians. <i>Ann Intern Med.</i> 2017;166(7):514-530. doi:10.7326/M16-2367</p>	
<p>Department of Health and Human Services, Interagency Pain Research Coordinating Committee. National Pain Strategy – A Comprehensive Population Health-Level Strategy for Pain. NIH Interagency Pain Research Coordinating Committee. HHS National Pain Strategy 508C.</p>		
<p>4 This review is on a timely and important topic to the VHA and general population. The report is thorough and well written. Unfortunately, very little literature meeting the review criteria was found. The authors made the most of what was found and provided a fair and informative overview. I have a few minor issues for editorial consideration.</p>	<p>Thank you.</p>	
<p>4 • KQ1 focuses on "psychologically informed behavioral interventions." This term is shortened to "behavioral interventions" throughout the report. The term "behavioral" has a specific meaning, especially within the psychotherapy literature. The term would not bring to mind acceptance and commitment therapy, as the focus of ACT is largely on changing thinking (i.e., cognitive). Perhaps a different term would be more clear?</p>	<p>We have made this suggested wording change.</p>	

<p>4 • Page 15, lines 5-9. The first two lines of the Conclusions section identify the need for research on effectiveness of videoconference interventions for chronic pain, patient preferences, and facilitators and barriers for implementation. I would note that this review did not explore those exact questions, but rather the comparative effectiveness of videoconference interventions and in-person services. Because the authors did not explicitly seek out and systematically review the literature on the overall effectiveness, patient preferences regarding, and implementation of videoconference pain interventions, they may wish to deemphasize or otherwise soften these sentences.</p>	<p>We have revised this wording per the reviewer's suggestions.</p>
<p>4 • Page 30, line 58. "prehabilitation" is a novel term and should be defined.</p>	<p>We have defined this term in the report.</p>
<p>4 • There are a few minor typos. Page 12, line 50 should read "study risk of bias." Page 31, line 53 should read "in-person or via videoconferencing."</p>	<p>Thank you, these changes have been made.</p>
<p>5 vi-13 Please correct spelling and credentials to Kristin Eneberg-Boldon, PT, DPT</p>	<p>These changes have been made</p>
<p>5 p28-line 34 'with via'; line 35 'form' should be 'from'</p>	<p>Thank you, these typos have been corrected.</p>
<p>6 The authors have submitted a well written and concise manuscript. They adequately defined two questions, provided a thorough search strategy. The results were unexpected. Based on the importance of the question, the inadequate answer that the results provide is still worthy of publication. And an update and new information is expected in several years. The authors should be commended for their quality work.</p>	<p>Thank you.</p>
<p>6 I do, however, have a few recommends: 1) the title of the manuscript be more precise. Videoconferencing of Nonpharmacological Interventions for Chronic Pain, implies it is covering nonpharmacological interventions. The interventions of interest are nonpharmacological interventions, however it is not inclusive of all nonpharmacological interventions. And there are some studies in which a self-administered non-pharmacological intervention, such as an electrotherapy, was excluded. The VHA convened a state-of-the-art (SOTA)</p>	<p>Thank you, we changed the title to Videoconferencing of Movement-based and Psychologically Informed Interventions for Chronic Pain: A Systematic Review and Horizon Scan.</p>

	<p>conference on non-pharmacological management of chronic musculoskeletal pain defined four areas of focus: psychological/behavioral therapies; exercise/movement therapies; manual therapies; and multimodal delivery of care. This paper clearly looks at psychological/behavioral therapies; exercise/movement therapies, but may exclude other non-pharmacological treatments. Just a recommendation.</p>
<p>6 2) Table 1. Lack of comparator had 12 studies excluded. I agree with the exclusion of those studies as I do not believe those studies had an adequate comparator. However, Treatment as usual may include some form of in person care or telephone follow-up. Perhaps expanding the definition to be a "similar" or "like" intervention / "a like or similar" psychological/behavioral therapy; exercise/movement therapy delivered in person without any videoconference delivery, telephone or combination of in-person and telephone.</p>	<p>Thank you for these thoughtful comments. We have tried to clarify the comparator eligibility criteria in table 1. To isolate the impact of videoconferencing, the ideal study for inclusion would compare the same treatment delivered by videoconferencing compared to in-person (or telephone or the combination of in-person and telephone). Yet, we did not want to further limit studies that did not have perfect parity in the non-videoconferencing conditions.</p>
<p>6 One requested clarification, multiple sclerosis was excluded because it is not a chronic pain condition?</p>	<p>We excluded studies that only recruited based on a diagnosis of multiple sclerosis. Many patients who have multiple sclerosis do have associated pain, but pain is not a marker or defining characteristic in diagnosing multiple sclerosis. This phenomena was similarly discussed for studies recruiting</p>

	<p>participants based on a diagnosis of osteoarthritis. However, the diagnosis of osteoarthritis is defined by the presence of pain or stiffness, so therefore patients with OA will have pain or stiffness. Many studies investigating multiple sclerosis were looking at fatigue, function, etc. If a study was recruiting for patients with multiple sclerosis and chronic pain, we would have included the study because the study would have been looking for only patients with multiple sclerosis and chronic pain.</p>
<p>7 I was surprised by the lack of research/studies in this area. Hopefully this can help support the need for me in VA.</p>	<p>Agreed, thank you.</p>
<p>7 In KQ1 - I don't recall the term "psychologically informed behavioral interventions" as a category</p>	<p>We have clarified this language throughout the report.</p>
<p>7 Were clinical hypnosis, biofeedback, or guided imagery included as non-pharm approaches for pain? I didn't see them referenced. Would recommend using "movement-based" over "exercise-based" throughout.</p>	<p>We took a broad approach to the included modalities of treatments for non-pharmacological pain management. This would include any evidence-based approaches for non-pharmacological pain.</p> <p>We have changed the wording throughout the report to "movement-based"</p>

		to improve clarity per your suggestion.
7	<p>I know this is focused on live video visits compared to in person care, but wonder if there would be room to discuss recorded content, use of mobile apps, or use of virtual reality in delivering some of these approaches compared to in-person care? I know that these are growing modalities for delivering care (see examples below)</p> <p>- Blödt S., Pach D., von Eisenhart-Rothe S., et. al.: Effectiveness of app-based self-acupressure for women with menstrual pain compared to usual care: a randomized pragmatic trial. <i>Am J Obstet Gynecol</i> 2018; 218: pp. 227.e1-e9.</p> <p>- Rousseaux F., Bicego A., Ledoux D., et. al.: Hypnosis associated with 3D immersive virtual reality technology in the management of pain: a review of the literature. <i>J Pain Res</i> 2020; 13: pp. 1129-1138.</p> <p>- Askay S.W., Patterson D.R., Sharar S.R.: Virtual reality hypnosis. <i>Contemp Hypn</i> 2009; 26: pp. 40-47.</p>	<p>Thank you but these modalities are beyond the scope of the review and the focus of the VA operations partners who commissioned this systematic review.</p>
7	<p>I know this is an ESP report, but I know that VA is doing a lot in the area of Tele-health including Tele-CIH and other non-pharm approaches to care. Would it be appropriate to add any of that into the report as background?</p>	<p>This is an excellent point and we have added this information to the report.</p>
8	<p>Major overall comments:</p> <p>The ESP report is very well done, but the utility of this work needs to be better communicated. As part of an evidence synthesis program, the overall purpose of this paper should be to inform current healthcare providers with actionable suggestions based on the current literature. This particular report included only 1 completed study with fairly inconclusive findings and had some concerns about its risk of bias, leaving the reader wondering about the utility of this study. Using the horizontal scan to mention how there are upcoming studies is greatly appreciated, however, there needs to be more included studies in this report to support conclusions that will be meaningful to healthcare workers in the VA and generally today (see methods section for suggestions).</p>	<p>Thank you for this comment. We too are frustrated by the low yield of relevant studies to address the areas of uncertainty of the VA operations partners. Including other studies that do not address effectiveness likely would provide limited guidance on the impact of this innovation on outcomes that are meaningful to clinicians and patients.</p>
8	<p>Introduction</p> <p>- The introduction section is well organized and follows a great flow to give background information about the importance of chronic pain management through nonpharmacological</p>	<p>Thank you</p>

<p>treatments and why videoconferencing may be feasible.</p>	
<p>8 - In paragraph 3 (page 7, line 11), it is mentioned that telehealth delivery has been examined for other chronic conditions. Elaborate upon this comment so that the author gets an idea of the different types of benefits videoconferencing provides for other chronic conditions and how this may relate to videoconferencing becoming an appropriate modality for chronic pain.</p>	<p>Thank you and we have added this information.</p>
<p>8 - Page 7 line 12 has a typo: currently the sentence reads “the benefits of virtual care the for nonpharmacological...” and could be changed to “the benefits of virtual care for the nonpharmacological...”</p>	<p>Thank you, this typo has been corrected.</p>
<p>8 Methods</p> <ul style="list-style-type: none"> - The methods overall are well-written and clearly describe the steps taken to gather the data. I especially appreciated the PICOTS table included as well as the analytic framework depiction. - A potential suggestion to improve the Evidence Synthesis Report is to broaden the inclusion criteria of the studies. Currently, the inclusion criteria leads to only 1 completed study included in the manuscript and thus the utility of this paper becomes limited for the intended audience. By broadening the inclusion criteria to include all studies that include videoconferencing of nonpharmacological interventions for chronic pain. Examples of additional articles that can be included are: Palyo, S. A., Schopmeyer, K. A., & McQuaid, J. R. (2012). Tele-pain management: Use of videoconferencing technology in the delivery of an integrated cognitive-behavioral and physical therapy group intervention. <i>Psychological Services, 9</i>(2), 200–202. https://doi.org/10.1037/a0025987 Glynn, L. H., Chen, J. A., Dawson, T. C., Gelman, H., & Zeliadt, S. B. (2021). Bringing chronic-pain care to rural veterans: A telehealth pilot program description. <i>Psychological Services, 18</i>(3), 310–318. https://doi.org/10.1037/ser0000408 Evaluating distance education of a mindfulness-based meditation programme for chronic pain management by Jacqueline Gardner-Nix et al., 2008 (https://doi.org/10.1258/jtt.2007.070811) - If the authors choose not to take the approach to broaden their inclusion criteria, then further justification is required. 	<p>Thank you. Please see comments above about scoping of this report to meet the needs of the VA operations partners who commissioned this review. The scope of this review is focused on effectiveness of the interventions. Broadening the scope to include all studies that include videoconferencing of nonpharmacological interventions for chronic pain would not be feasible on our programmatic timelines and budgets. Further, such a review scope would not meet the key information needs of the VA nominating operations partners.</p>

<p>8 To make it easier for the reader to follow along, include the initials of the researchers who were involved in the tasks described in the methods section.</p>	<p>Thank you. This is not part of our ESP style guide for reporting. We take a team science approach; nearly every investigator is involved in all steps of the review process.</p>
<p>8 Results I appreciate the use of the included Tables and the Appendix, which are clearly written and provide digestible and relevant information.</p>	<p>Thank you</p>
<p>8 Include a table in the Appendix with the different outcomes assessed and include a brief description of what those outcomes are and what they mean in a clinical setting.</p>	<p>Thank you, we have added all of the outcomes from the identified literature into Appendix C.</p>
<p>8 The inclusion of the horizontal scan to shed light on the different research projects that are currently being conducted is very beneficial to this study and strengthens the overall paper.</p>	<p>Thank you</p>
<p>8 Discussion Mention limitations to videoconferencing as a platform for chronic pain treatment. Issues such as limited internet connection, lack of access to technology, or lack of education on how to use technology may negatively impact a patient's experience using videoconferencing.</p>	<p>Thank you and we have added this information.</p>
<p>8 I appreciate the mention of future research that can be explored based on the results from the study including specifics regarding system-level studies, patient-important outcomes, and looking at the differences in outcomes across patient-level subgroups.</p>	<p>Thank you</p>