Supplementary material 4. Extracted data

First author and year of publication	**Study characteristics** (Study name and design, information about the patient sample, including orthopaedic condition an type of surgery, the number of participants, relevant inclusion/exclusion criteria, percentages of females, age and country)	**Intervention characteristics** (Intervention description, element, start and duration of the intervention and number of measurement occasions)	**Control condition**	**Outcome measures**	**Effect sizes**		
					Intervention group	**Control group**	**Intervention vs control**
Archer, 2016; Archer, 2014	Study name: - Study design: RCT Orthopaedic condition: Patients undergoing a laminectomy with or without arthrodesis for a lumbar degenerative condition (spinal stenosis, spondylosis, and degenerative	Intervention description: Cognitive-behavioural-based rehabilitation approach to reduce pain and disability through reductions in fear of movement and increase in self-efficacy, with focus on: • Self-management • Problem solving • Cognitive restructuring • Relaxation training. The main components of the program include education on the relationship between the body, mind, and one's activity level, a graded activity plan and	Education program on postoperative recovery, consisting of topics commonly covered by physical therapists during outpatient treatment, for example benefits of physical therapy,	Disability (Roland Disability questionnaire; on a 0 to 100 scale) with lower scores representing lower levels of disability.	Pre-treatment Mean(SD)=38.8 (17.3) Post-treatment Mean(SD)=28.6 (17.6) Change=-9.8 [-12.1 -7.5] 3 months Mean(SD)=21.1 (16.7) Change=-17.3 [-20.3 -14.4]	Pre-treatment Mean(SD)=34.0 (16.7) Post-treatment Mean(SD)=27.9 (19.4) Change=-6.1 [-10.5 -1.7] 3 months Mean(SD)=26.5 (20.5) Change=-7.5 [-12.1 -2.9]	Post-treatment Change=-3.7 [-8.6 1.2]# 3 months Change=-9.8 [-15.3 -4.4]#
				QoL (SF-12 – physical score; on a 0 to 100 scale)	Pre-treatment Mean(SD)=29.8 (0.5) Post-treatment	Pre-treatment Mean(SD)=32.0 (9.8) Post-treatment	Post-treatment Change=1.7 [-1.9 5.3]

	spondylolisthesis) Inclusion: Patients >21 years of age, with back and/or lower extremity pain for >6 months and high fear of movement, without a history of a neurological movement disorder; and no presence of psychotic disease in the medical record. Exclusion: Patients with spinal deformity as the primary indication for surgery, surgery for pseudarthrosis, trauma, infection, or tumor; and with microsurgical techniques as the primary procedure. n= 86 (baseline);	weekly activity and walking goals. Goals were rated by patients on a scale from 0 to 10 (completely confident), and scores of 8 or greater indicated a realistic goal. Patients received weekly sessions from a physical therapist for 6 weeks: 1 in person (1 hour) and 5 by telephone (30 minutes). Intervention element: Active referral and goal setting Start of the intervention: 6 weeks after surgery Duration of the intervention: From six weeks to 3 months after surgery. Measurements: Pre intervention, post intervention (3 months after surgery) and after a 3 months follow-up (6 months after surgery)	importance of daily exercise and ways to promote healing. Information on stress reduction, sleep hygiene, energy management, communication with health providers, and preventing future injury were also provided. Patients received weekly sessions with a physical therapist for 6 weeks. The first session was conducted in person (1 hour), the remaining sessions (30 minutes) were delivered over the telephone.		Mean(SD)=36.5 (10.8) Change=6.6 [4.2–8.9] 3 months Mean(SD)=43.0 (10.9) Change=13.4 [10.4–16.4]	Mean(SD)=36.9 (11.6) Change=4.8 [2.1–7.6] 3 months Mean(SD)=38.3 (11.4) Change=6.3 [3.3–9.3]	3 months Change=7.1 [2.9 11.3]
				QoL (SF-12 – mental score; on a 0 to 100 scale)	Pre-treatment Mean(SD)=43.6 (11.9) Post-treatment Mean(SD)=50.9 (10.0) Change=7.4 [5.3–9.5] 3 months Mean(SD)=56.6 (8.1) Change=12.5 [9.6–15.4]	Pre-treatment Mean(SD)=53.9 (10.1) Post-treatment Mean(SD)=53.7 (12.2) Change=-0.2 [-3.0 2.6] 3 months Mean(SD)=53.4 (12.0) Change=-0.5 [-3.7 2.7]	Post-treatment Change=7.6 [4.2 11.1] 3 months Change=13.0 [8.7 17.2]

	80 (analysed) %female: 80.2% Age: 57.6 (SD: 12.2) Country: USA						
Damkjær, 2015	Study name: - Study design: Controlled before-after studies (comparison between a retrospective and a prospective cohort). Orthopaedic condition: Patients undergoing an arthroscopic Bankart operation (anterior shoulder dislocation repair) Inclusion: Patients that had undergone surgery, were	Intervention description: American Society of Shoulder and Elbow Therapist (ASSET) guidelines consisting of three phases during which specific goals were targeted. The third phase targets to return to work and return to sport. Intervention element: Active referral and goal setting Start of the intervention: - Duration of the intervention: 18 weeks (on average) Measurements: Pre- and post-intervention (18 weeks after surgery).	Standard care rehabilitation protocol	WOSI index on shoulder-related function and QoL (%; on a 0 to 100 scale)	Baseline Mean(SD)=41.6 (16.1) Follow-up Mean(SD)=78.5 (16.7) Change=29.3 (15.9)	Baseline Mean(SD)=57.2 (17.5) Follow-up Mean(SD)=79.7 (11.8) Change=27.8 (17.3)	Change=1.48 [−5.59 8.56]
				WOSI (total; on a 0 to 2100 scale)	Baseline Mean(SD)=1224.3 (338.1) Follow-up Mean(SD)=425.0 (340.8) Change=644.5 (335.3)	Baseline Mean(SD)=898.3 (368.8) Follow-up Mean(SD)=428.6 (271.9) Change=574.8 (361.7)	Change=69.64 [−79.41 218.68]
				WOSI (physical symptoms; on a 0 to 1000 scale)	Baseline Mean(SD)=468.7 (181.1) Follow-up Mean(SD)=160.9 (161.2) Change=240.5 (180.3)	Baseline Mean(SD)=325.9 (167.9) Follow-up Mean(SD)=126.6 (111.6) Change=243.2 (196.9)	Change=2.63 [−78.03 83.30]
				WOSI (sport/recreation/work; on a 0 to 400 scale)	Baseline Mean(SD)=300.9 (75.9) Follow-up Mean(SD)=95.0	Baseline Mean(SD)=229.8 (92.7) Follow-up Mean(SD)=101.9	Change=3.89 [−43.63 51.36]

	referred to 'Bankart rehabilitation' by their surgeon and did not return to the hospital prior to the beginning of the operation. n= 157 (baseline); 84 (analysed) %female: Control group: 17%, Intervention group 64%. Age: Control group: 28.8 (8.9) years. Intervention group: 30.5 (8.7) years. Country: Denmark				(78.7) Change=167.9 (106.9)	(70.1) Change=164.1 (115.3)	
				WOSI (lifestyle/social; on a 0 to 400 scale)	Baseline Mean(SD)=261.9 (71.7) Follow-up Mean(SD)=91.3 (74.4) Change=133.4 (89.2)	Baseline Mean(SD)=183.4 (86.7) Follow-up Mean(SD)=84.0 (57.5) Change=120.7 (95.6)	Change=12.73 [−26.67 52.13]
				WOSI (emotions; on a 0 to 300 scale)	Baseline Mean(SD)=192.6 (62.6) Follow-up Mean(SD)=104.6 (77.7) Change=72.3 (87.4)	Baseline Mean(SD)=160.1 (79.8) Follow-up Mean(SD)=115.0 (76.5) Change=58.2 (94.3)	Change=14.11 [−24.76 52.98]
				The ability to take part in three self-chosen activities with the patient-specific functional scale; PSFS; on a 0 to 30 scale)	Baseline Mean(SD)=2.1 (12.6) Follow-up Mean(SD)=7.7 (17.9) Change=5.03 (3.9)	Baseline Mean(SD)=2.7 (12.9) Follow-up Mean(SD)=7.3 (10.1) Change=4.61 (4.3)	Change=0.41 [−1.35 2.16]
				Return to work (in weeks since the surgery and in %)	Mean(SD)=7.0 (6.5) Percentage=38.9%	Mean(SD)=5.2 (6.9) Percentage=45.9%	Change=1.78 [−1.89 4.65]
				Return to sports (in weeks since the surgery and in %)	Mean(SD)=13.1 (7.9) Percentage=28.7%	Mean(SD)=13.8 (8.8) Percentage=31.6%	Change=0.68 [−5.36 3.99]
Donceel, 1999	Study name: - Study design: RCT Orthopaedic	Intervention description: A rehabilitation oriented program with the following guidelines for the insurance physician: • Patient contact	Practice as usual by the insurance physician	Percentage workers not returning to work after one year	10.1%	18.1%	between-group difference: p=0.002

	condition: Patients undergoing open discectomy for herniated lumbar intervertebral disc Inclusion: Participants from the working population, 15-64 years of age and work incapacity prior to surgery <1 year were included through their medical advisors of a social security sickness fund (i.e. insurance physicians). n= 710 (unclear whether this is the baseline or the follow-up sample) %female: 35% Age: 39.2 years Country: Belgium	○ Strictly timed visits ○ Functional evaluation using the Oswestry Disability Scale ○ Providing information about national history of the disease and expected work incapacity ○ Encouraging personal activities ○ Clear advise about expectations ○ Recognize medical and psychosocial stressors impacting on disability • Contact with treating physicians ○ Ask for sufficient and correct information about diagnosis, treatment, therapeutic planning ○ Encourage professional rehabilitation measures in therapeutic planning ○ Promote a multi-					

		disciplinary approach • Contact with colleagues o Case discussion Intervention element: Active referral and goal setting Start of the intervention: 6 weeks after the surgery Duration of the intervention: Until one year after the surgery Measurements: Pre- and post-intervention (1 year after surgery)					
Hou, 2019	Study name: - Study design: RCT Orthopaedic condition: Patients agreed to receive lumbar spinal surgery and surgical intervention ≤ 3 columns (lumbar disc herniation, spinal stenosis, or lumbar spondylolisthesis) Inclusion: 18-64 years, living	Intervention description: Mobile phone eHealth program consisting of self-management, rehabilitation planning (rehabilitation for 20 min each time, twice a day) including video instructions, exercise and communication with practitioners. Doctors could view reports about the patients' daily exercise and adjust rehabilitation plans for patients. Two meetings were held to show the patients how to use eHealth and how to conduct the exercises. Intervention element: eHealth	Usual care. Surgeons' usual practice, including advices to keep physically active and simple instructions to train the back muscles. Analgesia and other symptomatic treatments when necessary	Oswestry disability (0 to 100 scale)	3 months + –7.27 (5.31) 6 months –18.43 (23.92) 12 months –21.58 (24.64) 24 months –30.43 (23.75)	3 months + –7.90 (4.53) 6 months –14.39 (4.64) 12 months –22.07 (5.56) 24 months –23.41 (6.65)	3 months + –0.63 (0.78) 6 months 4.0 (2.83) 12 months –0.49 (2.98) 24 months 7.02 (3.18)
				QoL (EQ5D; 0 to 100 scale)	3 months 0.09 (0.02) 6 months 0.23 (0.03) 12 months 0.24 (0.04) 24 months 0.35 (0.03)	3 months 0.09 (0.02) 6 months 0.13 (0.08) 12 months 0.17 (0.03) 24 months 0.22 (0.04)	3 months 0.00 (0.00) 6 months –0.10 (0.01) 12 months –0.05 (0.01) 24 months –0.12 (0.01)
				QoL (SF-36; general health; 0 to 100 scale)	3 months 40.01 (3.37) 6 months	3 months 38.16 (2.43) 6 months	3 months –1.85 (0.46) 6 months

	>100km from the hospital Exclusion: Having comorbidities, not able to complete the rehabilitation exercise because of mental retardation or other reasons n= 168 (baseline), 162 (analysed) %female: Intervention: 57%, control: 50% Age: Intervention: 51(10) years, control: 49(10) years. Country: China	Start of the intervention: 3 month after surgery Duration of the intervention: At least 2 months Measurements: baseline, 3, 6, 12, 24 months			54.75 (4.59) 12 months 56.25 (5.31) 24 months 62.80 (6.61)	45.85 (3.43) 12 months 55.53 (3.86) 24 months 57.98 (5.26)	–8.90 (0.66) 12 months –0.72 (0.78) 24 months –4.82 (1.09)
				QoL (SF-36; physical functioning; 0 to 100 scale)	3 months 40.76 (3.05) 6 months 56.12 (4.48) 12 months 56.74 (5.83) 24 months 62.45 (5.78)	3 months 30.58 (2.29) 6 months 46.35 (3.62) 12 months 56.13 (4.79) 24 months 59.07 (5.89)	3 months –2.18 (0.42) 6 months –9.77 (0.66) 12 months –0.61 (0.89) 24 months –3.38 (1.06)
Levinger, 2017	Study name: - Study design: RCT Orthopaedic condition: Patients undergoing	Intervention description: An internet-based intervention in addition to usual physiotherapy care. Patients received an interactive internet-based resource tailored to typical post-operative rehabilitation milestones through providing of	Usual physiotherapy care	KOOS was used to evaluate symptoms and function. KOOS pain (on a 0 to 100 scale)	Baseline Mean=45.9 (10.8) Follow-up Mean=54.7 (12.4)	Baseline Mean=56.2 (19.7) Follow-up Mean=61.2 (5.4)	Change=[-23.0 14.2]#
				KOOS symptoms (on a 0 to 100 scale)	Baseline Mean=53.9 (9.4)	Baseline Mean=52.0 (7.4)	Change=[-10.5 25.3]#

	anterior cruciate ligament reconstruction surgery Inclusion: Patients 18-45 years of age, able to speak English and with internet access on a daily basis. Exclusion: Patients who have had ACL surgery where there was additional surgical intervention or findings that changed routine post-operative physiotherapy care (e.g. meniscal repair). n= 32 (baseline); 17 (analysed) %female: 28% Age: 29.2(7.4) Country: Australia	information and communication between the patient and physiotherapist. Participants were able to access the internet-based resource as often as they desired and were encouraged to access it at least: On a daily basis for the first week following the surgery, three times per week for weeks 2-3 following the surgery, once a week for weeks 4-12 following the surgery. The internet-based resource comprised two elements information and communication between the patients and physiotherapists. Intervention element: e/mHealth Start of the intervention: First week following the surgery Duration of the intervention: Until 3 months after the surgery. Measurements: Pre- and post-intervention (3 months after surgery).			Follow-up Mean=52.1 (12.3)	Follow-up Mean=58.7 (12.0)	
				KOOS ADL (on a 0 to 100 scale)	Baseline Mean=49.8 (12.9) Follow-up Mean=63.2 (12.0)	Baseline Mean=62.4 (25.0) Follow-up Mean=71.9 (5.8)	Change=[-20.1 19.1]#
				KOOS quality of life (on a 0 to 100 scale)	Baseline Mean=26.9 (16.1) Follow-up Mean=61.2 (21.4)	Baseline Mean=27.6 (20.4) Follow-up Mean=50.9 (22.1)	Change=[-37.6 15.2]#

Martinez-Rico, 2018	Study name: - Study design: RCT Orthopaedic condition: Patients with recurrent anterior shoulder instability undergoing arthroscopic Bankart repair Inclusion: - Exclusion: Prior surgery of the involved shoulder, posterior or multidirectional instability, and previous symptoms of rotator cuff injury. n= 71 (baseline), 70 (analysed) %female: intervention: 28%, control: 18%. Age:	Intervention description: A phone intervention in addition to usual care. Patients were provided with additional coaching sessions about self-care, the importance of the exercises at home, instructions on performing the exercises, and responses to their questions (by a nurse who had access to a physiotherapist). Patients had contact by phone three times per week during the first month. Intervention element: Referral Start of the intervention: After removal of the sling Duration of the intervention: Measurements: Preoperatively and postoperatively at 2, 4, 6, and 12 months.	Usual care. 3 weeks of supervised physiotherapy at the outpatient clinic including verbal and written information about activities and exercises to perform daily at home	Activities of daily living (OSIS; 12 to 60 scale)	Preoperative % 36.4 [25-53] 4 months 20.4 [12-36] 6 months 14.5 [12-30] 12 months 12.5 [12-23]	Preoperative % 36.7 [24-53] 4 months 26.4 [12-51] 6 months 21.6 [12-33] 12 months 17.2 [12-32]	Between group preoperatively: p=0.090 Between group 4 months: p=0.037 Between group 6 months: p=0.070 Between group 12 months: p=0.181
			Quality of Life (DASH; 11 to 55 scale)	Preoperative 28.9 [2-54] 4 months 9.0 [0-36] 6 months 2.9 [0-27] 12 months 0.9 [0-18]	Preoperative 30.1 [31-58] 4 months 25.9 [9-86] 6 months 9.7 [0-45] 12 months 5.0 [0-45]	Between group preoperatively: p=0.886 Between group 4 months: p=0.074 Between group 6 months: p=0.004 Between group 12 months: p=0.013
			Functional shoulder outcomes (ROWE; 0 to 100 scale)	Preoperative 42.6 [15-75] 12 months 93.4 [70-100]	Preoperative 40.0 [5-75] 12 months 89.1 [65-100]	Between group preoperatively: p=0.648

	intervention: 26.5 (18–40) years, control: 29.0 (21–60) years. Country: Spain						Between group 12 months: p=0.210
McGregor, 2010; McGregor, 2011; Morris, 2011	Study name: FASTER Study design: RCT (multi-centre) Orthopaedic condition: Patients presenting with symptoms, signs, and radiological findings of either lateral nerve root compression or disc prolapse scheduled for surgery. Inclusion: Patients awaiting spinal surgery. Exclusion: Patients with a condition where the intervention or the rehabilitation may have an	Intervention description: 2x2 factorial design: • A 6-week program of postoperative rehabilitation or the relevant surgeon's usual postoperative care (according to the surgeon's discretion and routine practice) • An educational booklet or the surgeon's usual advice. (Only the results for the rehabilitation program as compared to usual care were extracted for the current review). Rehabilitation consisted of 12 standardized 1-hour classes run twice weekly by an experienced physiotherapist, including general aerobic fitness work; stretching; stability exercises; strengthening and endurance training for the back, abdominal, and leg muscles; ergonomic training; advice on lifting and setting, targets; and	Care according to the surgeon's usual practice. Previous work has shown this to be varied and limited.	Oswestry Disability Index (ODI) and a disability percentage (on a 0 to 100 scale) with lower scores representing lower levels of disability.	Baseline Mean=49 (18) 12 month Mean=24 (21)	Baseline Mean=46 (19) 12 month Mean=27 (23)	Change=−2.7 [−6.8 1.5]#
				Return to work			Not reported
				HrQoL (measured in QALYs with the EQ–5D)			Change=0.002 [–0.044 0.048]

	adverse effect on, previous spinal surgery; spinal surgery where a fusion procedure was planned, pregnant women, or those unable to attend or unsuitable for rehabilitation classes were excluded. n= 338 (baseline); 316 (analysed) %female: 53% Age: 54 (SD 15) Country: Great Britain	self-motivation along with an open group discussion at the end of each class. Intervention element: Active referral and goal setting Start of the intervention: 6 to 8 weeks after surgery Duration of the intervention: 6 weeks Measurements: preoperatively (baseline) and then at 6 weeks, 3 months, 6 months, 9 months, and 12 months post-surgery					
Oestergaard, 2015	Study name: - Study design: RCT Orthopaedic condition: Patients undergoing lumbar spinal fusion surgery Inclusion:	Intervention description: Patients were referred to a case manager (occupational therapist, medical doctor specialized in social medicine and a social work). Patient and case manager plan the patient's return to daily (work) activities according to the following schedule: • 2-3 weeks pre-surgery:	Usual rehabilitation (without a case manager)	Return to work (in weeks – defined as the first spell of four weeks return to work)	Mean=29 weeks	Mean=45 weeks	RR=1.18 [0.8 1.7] (in favour of intervention group)

	Patients undergoing lumbar spinal fusion surgery. n= 83 (baseline); 82 (analysed) %female: intervention group: 51%; control group: 49% Age: Intervention group 46.01(8.7), control group: 47.4(8.9). Country: Denmark	meeting • 4 weeks post-surgery: phone meeting • 6-7 weeks post-surgery: meeting • 10-12 weeks post-surgery: phone meeting If necessary roundtable meeting (with the patient, case manager, employer, social worker) and workplace visits were planned Intervention element: Active referral Start of the intervention: 2-3 weeks pre-surgery. Duration of the intervention: From 2-3 weeks pre- surgery to 10-12 weeks post-surgery Measurements: During a 2 year follow-up period					
Paxton, 2018	Study name:- Study design: RCT Orthopaedic condition: Unilateral total knee arthroplasty patients Inclusion:	Intervention description: Physical activity feedback, including real-time activity feedback using a real-time physical activity wearable sensor (Fitbit), weekly goal planning by telephone and monthly face-to-face support meetings Intervention element: Goal	Standard care plus weekly phone meetings to check health status (without physical activity feedback or group	Physical activity (in steps per day)	Baseline Mean=5754(2714) 12 week Mean=6917(3445) Change(%)=20.2(42.8)	Baseline Mean=5011(2038) 12 week Mean=5291(2298) Change(%)=8.7(36.1)	No statistics for between group differences provided

	Unilateral total knee arthroplasty patients n= 45 (baseline); 40 (analysed) %female: 47% Age: Control: 64(6); intervention: 63(7) Country: USA	setting and e/mHealth Start of the intervention: 6-8 weeks after surgery Duration of the intervention: 12 weeks Measurements: Pre- and post-intervention	meeting)				
Sandell, 2008	Study name:- Study design: RCT Orthopaedic condition: Patients on the waiting list for a primary total hip replacement. Inclusion: Patients on the waiting list with a potential for a 6-month wait or more. n= 89 (baseline); 63 (analysed)	Intervention description: Multidisciplinary intervention, including: • Physiotherapy incorporating hip strengthening and gait training before surgery • Orthopaedic nurse specialist determined potential problems that may delay surgery and refers to appropriate service for investigation/treatment, answers questions patient and explains in-patient journey • Pre-surgery occupational therapist home assessment to determine any equipment needed post-	Usual care (no additional treatment).	QoL assessed with the NHP - Energy (on a 0 to 100 scale)	Change=-9.48 (35.59)	Change=6.67 (34.66)	Change=[-33.87 1.59]#
				NHP - Pain (on a 0 to 100 scale)	Change=-1.46 (22.58)	Change=4.93 (22.77)	Change=[-17.82 5.05]#
				NHP - Emotional (on a 0 to 100 scale)	Change=1.90 (13.67)	Change=2.65 (18.25)	Change=[-8.83 7.32]#
				NHP - Sleep (on a 0 to 100 scale)	Change=-5.70 (24.54)	Change=5.98 (27.02)	Change= [-24.67 1.31]#
				NHP - Social (on a 0 to 100 scale)	Change=4.61 (14.33)	Change=-3.73 (14.37)	Change=[1.10 15.57]#
				NHP - Physical (on a 0 to 100 scale)	Change=-0.47 (12.47)	Change=1.44 (23.13)	Change=[-11.15 7.34]#
				QoL assessed with the Arthritis impact score (AIS) - Mobility (on a 0 to 10 scale)	Change=-0.35 (1.71)	Change=0.31 (1.74)	Change=[-1.537 0.219]#
				AIS - Walking and bending (on a 0 to 10 scale)	Change=-0.14 (2.09)	Change=0.75 (1.50)	Change=[-1.810 0.037]#
				AIS - Hand and finger	Change=0.45 (1.63)	Change=-0.35	Change=[0.10

	%female: 65% Age: treatment group: 70.3 (SD: 8.1), control group: 65.8 (SD: 10.6) Country: United Kingdom	surgery and advices on daily activities • Acute pain advise by nurse specialist regarding pain management, pharmaceutical and non-pharmaceutical. Intervention element: Active referral Start of the intervention: 3 to 16 months pre-surgery Duration of the intervention: Unclear Measurements: Pre- and post-intervention		function (on a 0 to 10 scale)		(1.05)	5 1.504]#
				AIS - Arm function (on a 0 to 10 scale)	Change=-0.08 (1.11)	Change=-0.68 (1.67)	Change=[-0.105 1.313]#
				AIS - Self-care tasks (on a 0 to 10 scale)	Change=-0.25 (1.79)	Change=-0.14 (1.95)	Change=[-1.047 0.837]#
				AIS - Household tasks (on a 0 to 10 scale)	Change=-0.23 (1.50)	Change=-0.13 (1.99)	Change=[-0.990 0.772]#
				AIS - Social activity (on a 0 to 10 scale)	Change=-0.71 (2.01)	Change=0.08 (1.37)	Change=[-1.670 0.080]#
				AIS - Support from family (on a 0 to 10 scale)	Change=-0.03 (2.00)	Change=0.52 (2.53)	Change= [-1.696 0.594]#
				AIS - Arthritis pain (on a 0 to 10 scale)	Change=-0.09 (1.61)	Change=0.74 (1.69)	Change=[-1.665 0.000]#
				AIS - Work (on a 0 to 10 scale)	Change=-0.37 (1.17)	Change=0.44 (1.62)	Change=[-1.409 0.004]#
				AIS - Levels of tension (on a 0 to 10 scale)	Change=0.09 (1.65)	Change=0.00 (1.55)	Change=[-0.719 0.901]#
				AIS - Mood (on a 0 to 10 scale)	Change=-0.12 (1.48)	Change=0.08 (1.23)	Change=[-0.894 0.485]#
				AIS - Satisfaction with health (on a 0 to 10 scale)	Change=-0.04 (1.32)	Change=-0.38 (1.54)	Change=[-0.376 1.062]#
				AIS - Current and future health (on a 0 to 10 scale)	Change=-0.61 (2.43)	Change=-0.44 (2.44)	Change=[-1.388 1.065]#
				AIS - Arthritis impact (on a 0 to 10 scale)	Change=0.00 (2.25)	Change=0.58 (1.82)	Change=[-1.622 0.455]#
Skolasky, 2018	Study name: - Orthopaedic condition: Controlled before-after study (lagged	Intervention description: Usual care, supplemented by 3 timed telephone calls. During the preoperative call, the study therapist used motivational interviewing strategies to increase the patient's	Usual care, involving routine clinical management of signs and symptoms of	QoL (SF-12 on a 0 to 100 scale)	Baseline Mean=36 (7.0) 12 months Mean=53 (9.0) 36 months Mean=51 (7.5)	Baseline Mean=36 (7.7) 12 months Mean=26 (17) 36 months Mean=23 (11)	12 months Change=0.36 [0.04 0.67]* 36 months Change=0.08 [-0.02 0.17]*

	controlled trial). Patient sample: Patients with lumbar spinal stenosis, lumbar spondylolisthesis or scoliosis undergoing lumbar spinal stenosis surgical procedures (i.e. lumbar decompression or arthrodesis) Inclusion: Patients >18 years of age and were able to provide informed consent. Exclusion: Patients who had undergone a previous lumbar spine surgical procedure. n= 125 (baseline); 122 (analysed) %female: 63% Age: Control	perception of the importance of physical therapy to recovery and confidence to follow through with rehabilitation. The therapist identified barriers to engagement and facilitated commitment to behavior change. Medical questions were directed to the orthopaedic surgeon. Intervention element: e/mHealth Start of the intervention: Postoperative Duration of the intervention: 36 months Measurements: pre-intervention, and 12 and 36 months after surgery	lumbar spinal stenosis.				

	group: 58 (SD: 13.5), intervention group: 60 (SD: 13) Country: USA						
Szöts, 2016	Study name: - Study design: RCT (single-center, non-blinded) Orthopaedic condition: Patients undergoing first-time knee arthroplasty due to osteoarthritis Inclusion: Patients >18 years who had undergone a first-time total knee arthroplasty, following a conventional course of treatment, and who were discharged 4 days after surgery or earlier, and	Intervention description: Usual care, supplemented by structured, nurse-managed telephone follow-up at 4 and 14 days post discharge. Key subjects of the telephone follow-up were: communication, cognition/development, breathing/circulation, nutrition, elimination, sleep, pain/perception, skin/tissue, sexuality/reproduction, activity, and psychosocial/spirituality/culture. Intervention element: e/mHealth Start of the intervention: 4 days after discharge from the hospital. Duration of the intervention: From 4 to 14 days after surgery Measurements: pre-intervention and 1 and 3	Usual care, pre-surgery admission with discharge scheduled 2–3 days post-surgery, referral to physiotherapy, removal of stitches by a general practitioner, and outpatient consultation with the surgeon 3 months post-surgery.	Physical function and pain, using the WOMAC Index – Pain (on a 0 to 100 scale)	Baseline Mean=39.6 [35.5 43.7] 1 month Mean=30.6 [26.4 34.7] Change=-8.8 [-13.0 -4.7] 3 months Mean=20.7 [16.2 25.2] Change=-8.7 [-13.2 -4.2]	Baseline Mean=42.4 [37.8 47.0] 1 month Mean=33.5 [29.1 37.8] Change=-19.5 [-24.1 -14.8] 3 months Mean=23.5 [18.7 28.4] Change=-19.8 [-25.6 -14.0]	1 month Change=-0.2 [-6.3 5.9]# 3 months Change=0.3 [-6.9 7.6]#
				WOMAC – Stiffness (on a 0 to 100 scale)	Baseline Mean=57.0 [51.6 62.4] 1 month Mean=42.6 [37.3 48.0] Change=-16.1 [-21.7 -10.5] 3 months Mean=31.4 [25.6 37.2] Change=-25.7 [-31.6 -19.9]	Baseline Mean=53.3 [47.6 59.0] 1 month Change=-10.3 [-15.6 -5.1] Mean=42.3 [37.4 47.2] 3 months Mean=34.6 [28.3 40.9] Change=-19.8 [-27.1 -12.6]	1 month Change=-5.7 [-13.3 1.8]# 3 months Change=-5.9 [-15.0 3.2]#
				WOMAC - Physical Function (on a 0 to 100 scale)	Baseline Mean=47.7 [43.4 52.0]	Baseline Mean=48.7 [43.4 53.7]	1 month Change=-2.8 [-9.1 3.4]#

	signed an informed consent. Exclusion: Patients that had previously undergone hip arthroplasty surgery or were in the terminal phase of another serious illness, such as cancer. n= 117 (baseline); 100 (analysed) %female: 64% Age: Intervention group: 67.3 (9.4), control group: 67.8 (8.4) Country: Denmark	months after surgery			1 month Mean=29.9 [25.7 34.1] Change=-17.9 [-22.3 -13.5] 3 months Mean=20.5 [16.7 24.4] Change=-27.6 [-32.1 -23.1]	1 month Mean=32.7[28.1 37.4] Change=-15.1 [-19.6 -10.5] 3 months Mean=21.5 [17.3 25.7] Change=-28.3 [-33.1 -23.5]	3 months Change=0.7 [-5.8 7.2]#
				HrQoL, using the SF-36 – Physical function (on a 0 to 100 scale)	Baseline Mean=29.8 [23.7 35.8] 1 month Mean=50.6 [44.5 56.6] Change=20.1 [11.8 28.4] 3 months Mean=63.5 [57.7 69.3] Change=10.0 [2.9 17.1]	Baseline Mean=34.5 [28.4 40.6] 1 month Mean=45.0 [39.8 50.1] Change=34.4 [26.4 42.4] 3 months Mean=65.4 [59.6 71.2] Change=32.0 [23.6 40.2]	1 month Change=10.1 [-0.7 20.8] 3 months Change=2.5 [-8.9 13.9]
				SF-36 – Role physical (on a 0 to 100 scale)	Baseline Mean=30.7 [23.1 38.3] 1 month Mean=49.3 [42.3 56.2] Change=18.5 [10.4 26.6] 3 months Mean=67.7 [59.7 75.6] Change=14.7 [6.9 22.5]	Baseline Mean=27.9 [21.4 34.4] 1 month Mean=42.8 [35.8 49.9] Change=37.1 [28.1 46.2] 3 months Mean=69.3 [61.9 76.7] Change=41.0 [30.7 51.3]	1 month Change=3.8 [-7.3 14.9] 3 months Change=-3.9 [-17.4 9.6]

				SF-36 – Bodily pain (on a 0 to 100 scale)	Baseline Mean=33.8 [28.0 39.6] 1 month Mean=55.7 [50.2 61.2] Change=22.3 [15.6 29.0] 3 months Mean=67.6 [62.1 73.1] Change=19.5 [13.7 25.2]	Baseline Mean=32.5 [27.3 37.8] 1 month Mean=52.6 [47.5 57.8] Change=34.9 [28.6 41.29] 3 months Mean=66.2 [59.3 73.2] Change=33.8 [26.2 41.5]	1 month Change=2.8 [-5.9 11.5] 3 months Change=1.1 [-8.6 10.8]
				SF-36 - General Health (on a 0 to 100 scale)	Baseline Mean=70.3 [65.4 75.2] 1 month Mean=73.5 [67.9 79.1] Change=3.4 [-0.3 7.2] 3 months Mean=70.7 [65.0 76.5] Change=3.3 [-0.6 7.3]	Baseline Mean=71.6 [66.5 76.7] 1 month Mean=75.3 [70.3 80.3] Change=0.6 [-3.9 5.1] 3 months Mean=74.5 [68.9 80.1] Change=2.8 [-2.0 7.6]	1 month Change=0.1 [-5.3 5.5] 3 months Change=-2.2 [-8.7 4.3]
				SF-36 - Vitality (on a 0 to 100 scale)	Baseline Mean=46.6 [41.7 51.5] 1 month Mean=54.8 [49.1 60.4] Change=9.7 [4.6 14.7] 3 months Mean=63.7 [57.9	Baseline Mean=40.9 [34.7 47.2] 1 month Mean=50.6 [44.2 57.0] Change=18.3 [12.8 23.9] 3 months Mean=64.0 [57.2	1 month Change=0.8 [-6.3 7.8] 3 months Change=-4.3 [-12.0 3.3]

					69.5] Change=8.9 [3.9 13.9]	70.6] Change=22.7 [17.3 28.1]	
				SF-36 - Social Functioning (on a 0 to 100 scale)	<u>Baseline</u> Mean=67.5 [59.7 75.4] <u>1 month</u> Mean=79.0 [72.5 85.5] Change=10.2 [3.6 16.7] <u>3 months</u> Mean=88.2 [83.1 93.3] Change=4.3 [-2.8 11.5]	<u>Baseline</u> Mean=73.1 [65.9 80.3] <u>1 month</u> Mean=77.9 [71.7 84.1] Change=19.9 [12.2 27.5] <u>3 months</u> Mean=88.0 [82.6 93.5] Change=16.3 [8.8 23.8]	<u>1 month</u> Change=5.8 [-3.8 15.4] <u>3 months</u> Change=3.5 [-7.1 14.2]
				SF-36 - Role Emotion (on a 0 to 100 scale)	<u>Baseline</u> Mean=64.6 [55.5 73.7] <u>1 month</u> Mean=71.7 [63.7 79.7] Change=3.5 [-5.4 12.4] <u>3 months</u> Mean=84.7 [78.5 90.8] Change=6.0 [-3.7 15.7]	<u>Baseline</u> Mean=63.7 [54.2 73.2] <u>1 month</u> Mean=70.8 [62.4 79.3] Change=18.7 [9.9 27.4] <u>3 months</u> Mean=83.7 [76.9 90.5] Change=19.2 [9.5 28.8]	<u>1 month</u> Change=-2.5 [-15.5 10.5] <u>3 months</u> Change=-0.5 [-13.4 12.3]
				SF-36 - Mental Health (on a 0 to 100 scale)	<u>Baseline</u> Mean=71.9 [67.7 76.1] <u>1 month</u> Mean=79.8 [75.6 84.0] Change=9.1 [5.3	<u>Baseline</u> Mean=67.8 [62.1 73.6] <u>1 month</u> Mean=74.8 [69.0 80.6] Change=8.9 [3.9	<u>1 month</u> Change=3.3 [-2.8 9.3] <u>3 months</u> Change=-4.8 [-11.7 2.2]

					12.8] 3 months Mean=79.9 [75.2 84.6] Change=5.8 [1.0 10.6]	14.0] 3 months Mean=82.1 [76.8 87.4] Change=13.7 [8.9 18.5]	
Vesterby, 2017	Study name: Remote Rehabilitation and Support project Study design: RCT Orthopaedic condition: Patients undergoing first-time fast-track total hip replacement Inclusion: Patients undergoing fast-track total hip replacement Exclusion: A distance to the hospital of more than 60 km, previous hip surgery, mental disability, having no support person, and	Intervention description: E/mHealth support, based on a need-driven participatory design approach. Patients receive information material on their TV (using a Wi-Fi connection). The material included elements of exposure and computer-aided cognitive behavioural therapy to minimize preoperative anxiety. Intervention element: e/mHealth Start of the intervention: 14 days before surgery Duration of the intervention: 3 months Measurements: Pre-surgery until 12 months after surgery	The standard fast-track total hip replacement plan	HrQoL, assessed with EQ-5D-3L (on a 0 to 100 scale)	Change=0.28 [0.20 0.34]	Change=0.26 [0.19 0.33]	Change=-0.01 [-0.06 0.04]#

	having no internet connection. n= 73 (baseline); 72 (analysed) %female: 47% Age: Control group: 64 [45 84], intervention group: 63 [43-80] Country: Denmark						
Wang, 2018	Study name: - Study design: RCT Orthopaedic condition: Patients who had undergone hip arthroplasty. Inclusion: Having a smartphone Exclusion: Visiting the platform fewer than 10 times within 6 months after discharge, being readmitted or having died of	Intervention description: The patient was referred to a certified nurse specialist with more than 10 years experiences and who was supported and specifically trained by a professional orthopaedic rehabilitation team consisting of orthopaedic nurses, orthopaedic surgeons and rehabilitation assistants With the help of this specialist and using and online platform the patient works on his/her rehabilitation and had contact at least once a week within 1 month after discharge, at least once every 2 weeks within 2 to 4 months after discharge and at least once a month 5 months after discharge	Usual care. Usual nursing care, including issuing a rehabilitation manual, performing telephone follow-up performed within 1 month after discharge for 30 min. and completing an outpatient review at 1, 3 and 6 months.	Hip function (Harris hip score; 0 to 100 scale)	Pre-treatment: 42.1 (16.1) 3 month: 78.0 (7.8) 6 month: 92.6 (3.7)	Pre-treatment: 44.67 (12.2) 3 month: 71.3 (9.5) 6 month: 86.6 (4.6)	Time*group interaction: p<0.001.
				Activity of daily living (Barthel index; 0 to 100 scale)	Pre-treatment: 68.3 (21.7) 3 month: 86.9 (5.6) 6-month: 93.9 (4.7)	Pre-treatment: 71.7 (21.9) 3 month: 82.6 (9.1) 6-month: 88.9 (5.8)	Time*group interaction: p<0.001.
				Quality of life (SF-36; with total scores of 145)	Pre-treatment: 71.9 (20.1) 3 month: 98.5 (14.9) 6-month: 119.0 (10.5)	Pre-treatment 75.5 (20.8) 3 month: 93.1 (17.3) 6-month: 112.3 (10.5)	Time*group interaction: p<0.001.

	complications. n= 400 (baseline), 389 (analysed) %female: 53% Age: 55.7 (13.8) years Country: China	Intervention element: Referral and eHealth Start of the intervention: Before discharge from the hospital Duration of the intervention: 6 months Measurements: Baseline, and 3 and 6 months follow-up.					

RCT=Randomized controlled trial
HrQoL = Health-related Quality of Life
QoL = Quality of Life
SD = Standar deviation
WOSI = Western Ontario Shoulder Instability;
KOOS = The Knee Injury and Osteoarthritis Outcome Score;
NHP = Nottingham health profile;
WOMAC = Western Ontario and McMaster Universities Osteoarthritis
#=Note that positive change scores depict positive intervention effects in favour of the control group. Effects were converted for the meta-analysis.
*=Change scores were expressed in change per month. For meta-analysis effects were converted into effects per 12 and 36 months, respectively.
+ Change score with respect to baseline (expressed in mean(SD))
% Score expressed in mean and range