Getting Evidence into Clinical Practice:
Musculoskeletal Research Facilitation Group (CAT Group)
Date: September 2020

Specific Question: In patients with musculoskeletal (MSK) disease, is a physiotherapy virtual treatment as clinically effective and as acceptable to clinicians and patients compared to face to face physiotherapy treatment/rehabilitation?

Clinical Bottom Line

Overall there appears to be evidence to support the use of telerehabilitation. The quality of the evidence varies with different orthopaedic conditions and procedures.

There is moderate quality evidence to suggest that telerehabilitation is effective for musculoskeletal conditions (e.g. back pain, chronic pain) in the improvement of physical function.

There is strong evidence in favour of telerehabilitation in patients following total knee and hip arthroplasty and limited evidence in the upper limb interventions (moderate and weak evidence).

There is no difference between telerehabilitation and usual care in reducing pain or disability in patient with subacute low back pain (moderate quality evidence).

Telerehabilitation was superior to usual care in improving quality of life for patients with subacute low back pain.

Combining telehealth and usual care is more beneficial to usual care alone when managing patients with subacute low back pain.

Why is this important?

In the current COVID 19 pandemic, many Physiotherapy services are looking to offer patients non face to face appointments and rehabilitation to reduce the risk of infection and reduce the foot fall through the NHS.

Physiotherapists are now embedded in all sections of the MSK pathway which varies across the UK. Roles vary and include first contact assessment and advice, and 'one-stop shop' interface services requesting further diagnostics and onward referral to secondary care.

Video consultations are currently being considered or offered in First Contact Physiotherapy, Physiotherapy and Interface contexts. Both the consultation, differential diagnosis and elements of treatment and rehabilitation (self-help, advice on exercise and activity) can also be offered.

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Physiotherapy is a traditionally face to face, hands on discipline, however trials have been undertaken on the use of telephone consultations for assessment and management. The Physio Direct trial (Salisbury et al 2013) found this to be a safe and effective method of management for patients with MSK disease. Patients found it to be acceptable.

It is important that we understand the literature underpinning telerehabilitation. Physiotherapists recognise it benefits and challenges, and suggest it is not suitable for all patients and the context is important. Patients also recognise the benefits, such as reducing the burden of hospital attendance and its limitations, such as not all patients having the technology or the perceived technological 'know how' to support its use.

Whilst this may be acceptable to patient during COVID 19, will this form of rehabilitation be of value when the pandemic recedes?

Please see
https://www.keele.ac.uk/pcsc/research/impactacceleratorunit/evidenceintopracticegroups/alliedhealthprofessionals/ for CAT on teleconsultations

Search timeframe : 2015-2020

Inclusion Criteria:

	Description	Search terms
Population and Setting	Adult patients Musculoskeletal pain	Adult patients Pain Osteoarthritis Back pain Spinal pain Shoulder pain Knee pain Joint pain Muscle pain Muscle strain Tendonitis Bursitis
Intervention or Exposure	Video treatment	Video rehabilitation One consult Accurx Telerehabilitation

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		telehealth
Comparison, if any	Usual Physiotherapy face to face	Physiotherapy Physical therapy Usual care Face to face 'Hands on' assessment
Outcomes of interest	Pain reduction Satisfaction Acceptability Safety	VAS Satisfaction Safety Adverse events
Types of studies	Systematic Reviews (SRs) & Randomised Controlled Trials (RCTs)	SRs and RCTs

Routine Databases Searched

Cochrane Systematic Reviews, Clinical Evidence, DARE/HTA/NHSEED, Medline, CINAHL, AMED, PsychInfo, Cochrane (CENTRAL), Web of Science, IBSS (BIDS)

Date of search –

Results of the search

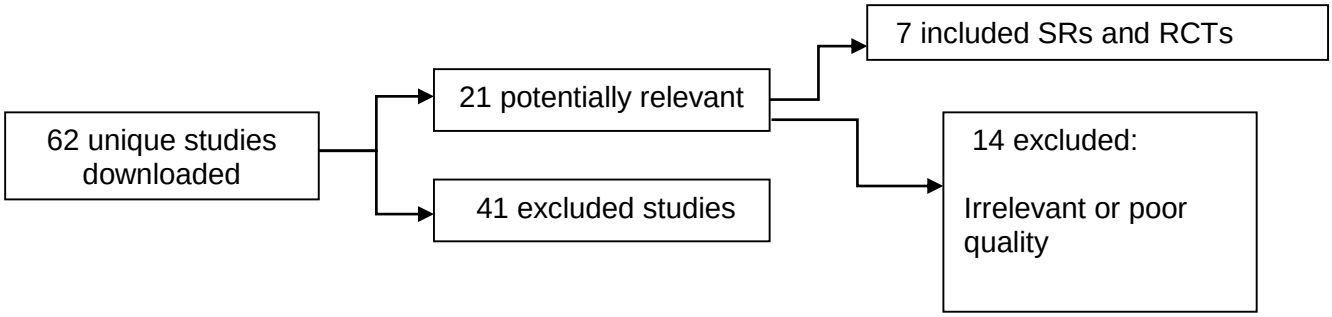

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Table 1- Detail of included studies

First Author, year and type of study	Population and setting	Intervention or exposure tested	Study results	Assessment of quality and comments
Dario et al 2017 Systematic review and meta analysis	Non specific low back pain RCTs	Telehealth Pain, Quality of life and disability Telehealth strategies included education, exercise prescription, goal setting Delivered by call, short message service, apps and internet website, e-mail	11 studies n= 2280 (4 included meta analysis) No significant effect on pain in short or medium term compared with control group No effect for disability Superior to control in quality of life measures Combination of telehealth and usual care better than usual care alone for those with recent onset	Clear search 3 reviewers Clear inclusion and exclusion criteria No language restriction PEDRO used to assess quality GRADE recommendation for strength of evidence Most trails looked at subacute , 1 Included mixed symptom duration Intervention lasted 4 weeks – 1 year Only 4 include in meta-analysis Defines telehealth Interventions lasted 4 weeks to 1 year
Cottrell et al 2017 Systematic Review	All MSK 18 years + Post op included	Evaluated effectiveness of tele rehab	13 trials (n= 1520) Effective in improving physical function Treatment delivered solely by tele rehab is equivalent to face to face Tele plus routine care more favourable	Search All languages, citation list, contacted experts 2 reviewers and addition 1 for disagreement Quality scores For
Herbert et al 2016	USA	Video chronic pain rehab (ACT)	Both groups improved significantly 6 months	Blinded

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RCT	Veterans age 25-89 Chronic pain	N= 64 In person (IP)ACT programme n= 65 Primary outcome Pain Interference subscale Numerous secondary outcomes: mental health, sleep, pain acceptance, disability, functioning, depression, pain related anxiety, treatment satisfaction	Activity levels greater at 6 months in IP group Greater loss to follow up in Video group (5 in Video group, 3 in IP group)	Good randomisation process Clear inclusion and exclusion criteria Financial incentive to complete Follow up No power calculation No Baseline characterises table
Shukla et al 2017 Systematic review and Meta-analysis	Patients undergoing Total Knee Replacement	Evaluate home rehab in patient following Total Knee Replacement	6 trials N=408 High levels of patient satisfaction No differences in Range, similar improvement on functional improvement and physical activity in conventional and telerehab groups	Studies from Canada Australia and Spain Defined telerehabilitation Appropriate databases searched Clear inclusion and exclusion
Grona et al 2018	Chronic MSK Physiotherapy	Validity and reliability and	High risk of bias in studies exploring validity and reliability	No meta analysis High risk of bias

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Systematic review with a narrative synthesis (2003-2018)		System and health outcomes (assessment and treatment)	Suggesting on improvement in satisfaction and health outcome – but studies of small numbers	Only 4 databases searched 2 reviewers not 3
Pastora-Bernal et al 2017 Systematic review	Adults post Orthopaedic surgery US, AUS, Canada	Tele rehabilitation interventions included videoconferencing sessions, phone counselling video games, asynchronous exercise videos, and interactive virtual systems	15 Studies n= 1316 participants. 3 studies with PEDro scores between 6 and 8, which is considered as level 1 evidence (good; 20% [3/15]), 4 studies with a score of 5, which is considered as level 2 evidence (acceptable; 27% [4/15]), and the remaining 8 studies had scores of 4 or less, which is considered (poor; 53% [8/15]). Strong evidence supporting tele rehabilitation post total knee and hip arthroplasty. Limited evidence in the upper limb interventions (moderate and weak evidence). Study heterogeneity	Broad but clear inclusion/exclusion criteria Comparators included face to face treatment Study quality assessed using (PEDro) scores and grade of recommendation following the recommendation of the Oxford Centre for Evidence-Based Medicine. 2 authors for data extraction with 3rd for consistency Primary authors contacted for clarity Some tele rehabilitation interventions of low methodological quality. No validated clinical outcomes, too small a sample size, and a lack of comparison group and lack of blinding found frequently. Differences in tele rehabilitation interventions, treatment period, and follow-up, with bias to more frequent tele rehabilitation contact

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				Further research with greater homogeneous studies required for broader translation for all MSK/orthopaedic conditions
Hinman et al 2017 Qualitative study	Patients with Knee OA, exploring patient and therapist experience with skype for exercise management	12 purposively sampled patients And 8 therapists Interviews audio recorded and transcribed with thematic approach	6 themes emerged Structure: technology use, convenience, empowerment to self-manage and positive therapeutic relationships. Patients satisfied with care and would recommend Reduced pain, improved function and confidence Therapists reported mostly positive experience but needed to modify habits and felt discomfort with lack of hands on	Purposively sampled Appropriate methodology of grounded theory 2 people developed themes, second having no contact with participants

Summary

Most studies available explore particular conditions e.g. low back pain and orthopaedic surgical procedures and are of varying quality. There is varying quality evidence, but appears to be consistent for telerehabilitation following total knee replacement

There is moderate quality evidence to suggest that telerehabilitation is effective for musculoskeletal conditions (e.g. back pain, chronic pain) in the improvement of physical function, disability and pain.

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There is strong evidence in favour of telerehabilitation in patients following total knee and hip arthroplasty and limited evidence in the upper limb interventions (moderate and weak evidence).

There is no difference (equivalent) between telerehabilitation and usual care in reducing pain or disability in patient with subacute low back pain (moderate quality evidence).

Combining telehealth and usual care is superior to usual care alone when managing patients with subacute low back pain.

Consistent theme of patient satisfaction around telerehabilitation

Implications for Practice/research

Telerehabilitation appears to offer an acceptable, effective alternative/adjunct to usual care for some conditions e.g. TKR, THR, LBP, which is a valuable option both during COVID pandemic times and consideration for future service provision, for some patients.

Due to lack of consistency of studies in terms of type, duration and intervention follow-up for specific conditions future high quality research is needed to address this.

Future research implications

Research should focus on the long-term impact of the use of virtual rehabilitation on clinical and health outcomes in the UK context and those conditions commonly referred for rehabilitation, e.g. spinal, knee and shoulder pain. Rehabilitation following common surgical procedures may also warrant investigation e.g. rotator cuff repair.

Research could explore access to technology and the impact of health literacy. Health inequalities may also need to be explored

What would you tweet? (140 characters)

Patients with LBP or post hip/knee arthroplasty benefit from and are satisfied with tele rehabilitation as an effective alternative or adjunct to face to face care.

Tele rehabilitation can be considered as an alternative/adjunct for some MSK orthopaedic conditions

References

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Cottrell MA., Galea OA., O'Leary SP., Hill AJ. and Russell TG. Real-time telerehabilitation for the treatment of musculoskeletal conditions is effective and comparable to standard practice: A systematic review and meta-analysis (2016)

Dario AB., Cabral AM., Almeida L., Ferreira ML., Refshauge K., Simic M., Pappas E. and Ferreira PH. Effectiveness of telehealth-based interventions in the management of non-specific low back pain: A systematic review with meta-analysis (2017)

Grona SL., Bath B., Busch A., Rotter T., Trask C and Harrison E. Use of videoconferencing for physical therapy in people with musculoskeletal conditions: A systematic review (2017)

Herbert MS., Afari N., Liu L., Heppner P., Rutledge T., Williams K., Eraly S., VanBuskirk K., Nguyen C., Bondi M., Hampton Atkinson H., Golshan S. and Loebach Wetherell J. Telehealth Verus In-Person Acceptance and Commitment Therapy for Chronic Pain: A Randomized Noninferiority Trial (2017)

Hinman RS., Nelligan K., Bennell KL. and Delany C. "Sounds a Bit Crazy, But It Was Almost More Personal:" A Qualitative Study of Patient and Clinician Experiences of Physical Therapist-Prescribed Exercise For Knee Osteoarthritis Via Skype (2017) ****

Pastora-Bernal JM., Martin-Valero R., Baron-Lopez FJ. and Estebanez-Perez MJ. Evidence of Benefit of Telerehabilitation After Orthopaedic Surgery: A Systematic Reveiw (2017)

Salisbury Chris, Montgomery Alan A, Hollinghurst Sandra, Hopper Cherida, Bishop Annette, Franchini Angelo et al. Effectiveness of PhysioDirect telephone assessment and advice services for patients with musculoskeletal problems: pragmatic randomised controlled trial BMJ 2013; 346 :f43

Shukla H., Nair SR. and Thakker D. Role of telerehabilitation in patients following total knee arthroplasty: Evidence from a systematic literature review and meta-analysis (2016)

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