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a systematic review**

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Substitution of doctors with physiotherapists in the management of common musculoskeletal disorders: protocol for a systematic review

Marks D, Comans T, Bisset L, Scuffham PA

Background

Musculoskeletal disorders are the second largest cause of global disability⁽¹⁻³⁾. Linked by the presence of pain and impaired function⁽⁴⁾, the heterogeneity of these disorders dictates a range of management pathways but the majority present to primary care and approximately one third receive specialist referral, most often to orthopaedics⁽⁵⁾. However, demand for specialist care already outstrips supply in the public sector, and with an age-related tendency towards chronicity and increased prevalence, musculoskeletal disorders are expected to cause an increasing burden as the population ages⁽²⁾.

Professional substitution is the transfer of work normally performed by one profession (in this case doctors), to other professionals⁽⁶⁾. This can entail specific duties, or complete role substitution⁽⁷⁾. Professional substitution aims to address the challenges of musculoskeletal demand by improving access for patients⁽⁷⁾, reducing cost and addressing workforce shortages⁽⁶⁾. Physiotherapists are an increasingly common substitute for doctors, often via orthopaedic triage services in which patients are seen by physiotherapists instead of doctors^(8,9). Yet the professional and legal scope of physiotherapy varies internationally and there is great variability in service models^(10,11), suggesting uncertainty regarding best practice.

If service designers are to make informed decisions about professional substitution, then they require an understanding of the marginal impact of physiotherapists compared with doctors. This should be informed by evidence of their safety, efficacy and cost. Claims that physiotherapy is as good or better than care from doctors with respect to efficacy, satisfaction and cost^(8, 9), are undermined by previous reviewers reliance upon observational studies. Such studies lack a control group providing usual care from doctors and are therefore unable to quantify marginal differences in outcomes from care delivered by physiotherapists. Furthermore, observational designs do not control for factors that can affect patient outcomes and are therefore prone to biased estimation of the impact of care delivered by physiotherapists⁽⁶⁾. This review will be the first to only evaluate studies that have compared outcomes from care delivered by doctors and physiotherapists. It will provide new insights into the efficacy of substituting doctors with physiotherapists in the management of musculoskeletal disorders.

Objectives

To synthesize and evaluate health outcomes (condition specific or functional measures, quality of life, safety / adverse events and patient satisfaction), costs, resource utilization and care processes from musculoskeletal care (adult non-inflammatory, non-emergency) delivered by physiotherapists, compared with usual care from doctors.

Methods

This review will follow the Preferred Reporting Items for Systematic Reviews and Meta-analysis Guidelines⁽¹²⁾.

Participants:

Included: Adults (as defined by the study) with musculoskeletal disorders seeking care in ambulatory settings such as primary care or specialist outpatients

Doctors (usual doctors providing care for the clinical setting)

Physiotherapists acting as a substitute for doctors

Excluded: Inflammatory / autoimmune disease

Emergency care such as emergency departments

Intervention:

Included: Substitution of the usual doctor with a physiotherapist

Direction comparison of care from a physiotherapist and a doctor

Excluded: Usual medical care supplemented with involvement of another healthcare professional (represents enhancement rather than substitution)

Intervention studies defined as those designed to investigate the effect of an experimental treatment rather than the effect of the professional delivering the treatment

Diagnostic validation of professional decisions against external standards such as MRI or arthroscopy

Comparison:

Included: Studies with a control group of usual care provided by the usual doctors for the clinical setting (randomized and pseudo-randomized controlled trials, agreement studies and comparative studies (non-randomised

experimental trials, cohort studies, case-control studies and interrupted time series), written in English and of any age)

Excluded: Studies lacking a control / comparison group

Outcomes:

Included:

1. Health outcomes (condition specific or functional outcome measures, quality of life, safety and adverse events and patient satisfaction)
2. Care processes (professional decision making in diagnostic and management domains and service delivery factors such as waiting times)
3. Resource utilization (consultation times, number of visits, re-presentation rates and medical device or pharmaceuticals usage rates)
4. Costs (direct or indirect costs)

Excluded:

Satisfaction ratings from other healthcare professionals

Diagnostic validation against external standards (eg arthroscopy or MRI)

Any outcome measure not collected for the study population in question (eg waiting times compared to historical non-study populations)

Identification of studies

Medline, CINAHL and ABI Complete databases will be searched electronically with terms to capture physiotherapy, substitution, musculoskeletal disorders and terms to exclude emergency settings and inflammatory disorders. A full search strategy is shown in Appendix A. In addition to electronic searches, reference lists of studies from the electronic search, published reviews and policy documents will be manually searched. Search results will be exported to Endnote® for removal of duplicates.

Data collection and analysis

Two reviewers will screen titles and available abstracts for potential inclusion. The full text of potentially relevant articles will be independently reviewed, differences between reviewers discussed and where necessary any ongoing disagreements will be resolved by a third reviewer.

Assessment of quality and risk of bias in included studies

The Downs and Black Instrument will be applied to all studies⁽¹³⁾. This is validated for randomised and non-randomised clinical trials and has better reliability and validity than other tools for studies of varied design^(14, 15). The final question will be condensed leaving a scale of 28 (best possible score) to zero (worst possible score). Agreement studies will be assessed with the Quality Appraisal Tool for Reliability Studies checklist (QAREL). This 11-item checklist reliably assesses the quality of studies of diagnostic reliability^(13, 16, 17). Economic evaluations will be assessed with the Evers Checklist, a quality assessment checklist and scoring tool for economic analyses⁽¹⁸⁾.

Data extraction and management

A data extraction form will be constructed in Microsoft excel 2010®, based on the Cochrane Collaboration template. Two reviewers will also independently assess each study for risk of bias, with discrepancies resolved by discussion and where necessary by a third reviewer (LB). For agreement studies, Altman's interpretation of reliability will be applied to Kappa and raw % scores⁽¹⁹⁾: <0.2 poor, 0.21 - 0.4 Fair, 0.41 - 0.6 Moderate, 0.61 - 0.8 good, 0.81 – 1 very good.

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Appendix A:

Electronic searches

1. Terms to capture substitution: advanced and extended practice terms used in a previous review (Kersten et al 2007) with additional items relating to substitution:
"Waiting list" OR triage OR ESP OR "ext* role" OR "exp* role" OR "role substitution"
OR "task substitution" OR "extended scope" OR "advanced practi*" OR "role transfer"
OR "task transfer" OR "medical substitution" OR "diagnos* concordance" OR
"diagnos* agreement" OR "managem* agreement" OR "managem* concordance" OR
"int??disciplinary compar*" OR "economic evaluation" OR "health service" OR
"advanc* practi*" OR "cross boundar*" OR "enhan* practice" OR "enhan* practice"
OR "exp* practice*" OR "expan* scope*" OR "ext* scope*" OR "int??disciplinary
competenc*" OR "int??disciplinary practice*" OR "new role*" OR "new scope*" OR
"profession* boundar*" OR "role* chang*" OR "role* collaborati*" OR "role*
cross*" OR "role* defin*" OR "role* enhan*" OR "role* expan*" OR "role* exten*" OR
OR "role* modern*" OR "role* overlap*" OR "role* redefin*" OR "role* shar*" OR
"role* shift*" OR "scope of practice" OR "shar* competenc*" OR "shift* boundar*"
OR "skill* interdisciplin*skill* interdisciplin*" OR "skill* overlap*" OR "skill* shar*" OR
"specialist practitioner*" OR "traditional role*" OR "transdisciplinary practice*"
2. Terms to capture musculoskeletal disorders:
"musculoskeletal disorde*" OR "musculoskeletal pain" OR arthriti* OR "back pain" OR
"spinal pain " OR radiculopathy OR sciati* OR "neck pain " OR "shoulder pain" OR "
hip pain" OR "knee pain" OR "wrist pain" OR "hand pain" OR "ankle pain" OR "foot
pain"
3. Terms to capture physiotherapy:
physiotherap* OR "physical therap*
4. Terms to exclude emergency settings and inflammatory conditions:
rheumat* OR spondyloarthr* OR psoria* OR "inflam* arthritis" OR emergency OR
paediat* OR pediat* OR chil*