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Systematic review

Musculoskeletal triage: a mixed methods study, integrating systematic review with expert and patient perspectives

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Abstract

Background Triage is implemented in healthcare settings to optimise access to appropriate care and manage waiting times.
Objectives To determine the optimum features of triage systems for patients with musculoskeletal conditions.
Data sources AMED, BNI, CINAHL, EMBASE, Health Business Elite, HMIC, MEDLINE, Cochrane Library, Web of Science and Google Scholar.
Study selection or eligibility criteria Studies that included non-musculoskeletal conditions, concerned patients aged <18 years or were set in emergency departments were excluded.
Study appraisal and synthesis methods Study quality was graded using the Downs and Black quality index. Qualitative methods were used to further inform the findings of the literature review.
Results Thirty-four studies met the inclusion criteria, with study quality ranging from eight to 24 out of a possible 27. Musculoskeletal triage is conducted via face-to-face consultation, paper referral letter or telephone consultation. Triage performed by physiotherapists, general practitioners, multidisciplinary teams, nurses, occupational therapists and speech therapists has been shown to be effective using a range of outcomes. Qualitative data revealed the value of supportive interdisciplinary teams, and suggested that this support is more important than choice of clinician. Patients trusted, and expressed preferences for, experienced clinicians to perform triage.
Conclusion Triage can be performed effectively via a number of methods and by a range of clinicians. Satisfaction, cost, diagnostic agreement, appropriateness of referral and waiting list time have been improved though triage. Multidisciplinary support mechanisms are critical elements of successful triage systems. Patients are more concerned with access issues than professional boundaries.

Keywords: Referral; Waiting list; Length of stay; Effectiveness; Appropriateness; Satisfaction

Introduction

Musculoskeletal conditions account for up to 2143 per 10,000 general practitioner (GP) consultations [1], and the World Health Organization has set the reduction of associated suffering as an international target [2]. In the UK National Health Service, patients with musculoskeletal conditions form one of the largest groups waiting for an outpatient

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appointment [3–5]. Furthermore, outpatient waiting times are amongst the longest, compared with other specialities such as ophthalmology and gynaecology [3–5], with trauma and orthopaedic lists particularly affected [3]. However, referrals to musculoskeletal services are often found to lead to unnecessary surgical and duplicate referrals, with subsequent redirection by second-contact practitioners causing delay and inefficient care [6].

Triage systems are implemented to reduce waiting times and ensure rapid access to effective assessment, advice and treatment. As a result, the effects of triage on waiting list time [7], satisfaction [8], diagnostic agreement [9], appropriateness of referral [10], clinical measures [11] and cost [12] have been evaluated. Paper-based [13], face-to-face [14] and telephone [12] implementation methods have been evaluated and suggested to be effective using a variety of outcome indicators.

Modernised professional boundaries and innovative service designs have increased the range of suitably qualified first- or second-contact healthcare professionals. Nurses or physiotherapists can extend their scope of practice beyond their traditional professional boundaries. [7,15,16], Following a study by Byles and Ling [17], in which patients referred to orthopaedic outpatient clinics were triaged by a physiotherapist, a variety of service structures have been explored with variable results.

Given the growing use and varied methods of musculoskeletal triage, there is a need for a systematic review to clarify trends emerging in the literature, combined with qualitative data from a range of clinical experts and patients to capture the rich experience of relevant professionals and patients, and address gaps in the literature. For example, the absence of evaluation of private sector mechanisms was noted, and this is of growing importance given the increase in competitive tender processes for such services. Further, the re-organisation of healthcare services to reflect increasing demand and budgetary stringency makes it essential that commissioners and delivery teams have accurate information to apply when planning services.

This study aimed to determine the most advantageous features of triage systems for patients with musculoskeletal conditions. The objectives were: (1) to conduct a systematic review of the literature concerning methods, clinicians and settings; (2) to identify experts' and patients' views using focus groups; and (3) to identify priorities for future research.

Methods

Inclusion and exclusion criteria for the systematic review

The systematic review included studies that were original, scientific journal publications, written in any language, concerned musculoskeletal conditions and evaluated any form of musculoskeletal triage service for adults aged ≥18 years that incorporated any healthcare professional (Table 1).

Table 1
Inclusion/exclusion criteria.

	Inclusion	Exclusion
Population	Adult patients (age ≥ 18 years)	Paediatric or adolescent patients (age ≤ 17 years)
Setting	Outpatient clinic, GP practice, MDT, walk-in clinic, pain clinic, workplace assessment	Emergency department
Conditions	Musculoskeletal conditions	
Outcome measures	Outpatient waiting time Appropriate referrals Healthcare costs Patient outcome	
Type of triage	Paper based Face-to-face Telephone triage Online	
Clinical profession	All triage personnel	

GP, general practitioner; MDT, multidisciplinary team.

Reviews, opinion articles, conference abstracts and any non-peer-reviewed articles were excluded.

Search strategy

Literature searches were conducted using the following databases in August 2012: AMED (1985–), BNI (1985–), CINAHL (1937–), EMBASE (1947–), Health Business Elite (1922–), HMIC (1983–), MEDLINE (1950–), Cochrane Library, Web of Science and Google Scholar. The Medical Subject Headings are detailed in Table A (see online supplementary material).

Review process

Identified references were downloaded into Endnote (Version X4.0.2, Thomas Reuters, Philadelphia, PA, USA), and the title and abstract were evaluated by two independent reviewers (CJ and AH). Any disagreements were resolved through a discussion between the reviewers. If a decision was unclear from the abstract, the full-text article was obtained for assessment.

Study quality was assessed using the Downs and Black Quality Index [18], which is designed to evaluate both randomised and non-randomised trials. All studies were included in the review regardless of their quality score.

Focus groups

Two focus groups (expert and patient) were conducted and recorded using a digital audio recorder. Focus groups were preferred to questionnaire or structured interview methods in order to capitalise on group interactions [19,20]. A