



Figure 1 Cost-effectiveness plane for the comparison of implementation of a structured model for OA care (intervention group) and usual care (control group)

should pay more focus on implementing structured OA care models in primary healthcare as this may be beneficial for the individual as well as for the society.

PRESENTATION NUMBER: 58 NON HEALTHCARE EXERCISE PROFESSIONAL LED EXERCISE FOR OSTEOARTHRITIS - A COCHRANE REVIEW

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Purpose: Osteoarthritis (OA) is a leading cause of disability with an estimated 300 million individuals worldwide living with the condition. Evidence-based guidelines recommend exercise as a core treatment to reduce pain and increase function. Traditionally, exercise interventions for OA are delivered within a healthcare environment by physiotherapists following referral from primary or secondary care. Healthcare professionals such as physiotherapists are ideally placed and appropriately skilled to provide exercise advice, however timely access to National Health Service (NHS) treatment is a significant problem in the face of increasing referrals and inadequate resources. As such, a strategic healthcare and public health approach to the long-term management of OA is required to ensure appropriate access to effective exercise interventions is received. Community based Exercise Referral Schemes (ERS) located within leisure centres are available, but rarely evaluated to determine short or long-term efficacy. A review of ERS for a number of conditions (including obesity, cardiovascular disease, diabetes and mental health) where referral came from a healthcare professional, suggested inconclusive evidence regarding clinical and cost-effectiveness in the short-term and no evidence to support long-term changes to physical activity. Although outcomes of community based trials in OA are available, the effects of this type of intervention remain uncertain, and an accumulation of the evidence would inform future service planning and provision. The aim of this systematic review was to assess the benefits and harms of community based exercise programmes for OA led by non-healthcare exercise professionals (e.g. trained exercise instructor), compared to those delivered by healthcare professionals, self-management interventions, home-based programmes or continued general practitioner (GP) care.

Methods: A comprehensive systematic review and narrative synthesis of existing literature was conducted using multiple electronic databases (e.g. MEDLINE, EMBASE). Inclusion criteria for study designs were randomised controlled trials or controlled clinical trials, which included adults with a mean age over 45 years old with a clinical or radiographic diagnosis of lower limb OA, and tested an exercise programme, delivered to groups or individuals in the community and supervised by a non-healthcare exercise professional. The primary outcomes of interest were pain and function; secondary outcomes included physical activity levels, quality of life, long-term engagement and cost effectiveness. Two reviewers independently screened the full texts retrieved, checked data extraction and carried out quality assessment.

Results: Titles (16,189) and abstracts (1,627) were screened for eligibility. Of the 409 full text assessed, 20 studies were deemed eligible for the review. Study quality and risk of bias was variable and often unclear

according to the CASP appraisal tool and the Cochrane risk of bias. Most notable were issues associated with randomisation and blinding. Other issues identified that may have impeded study quality included small sample sizes (ranging from 24 to 316), poor reporting on data management and high attrition amongst exercise participants. The majority of studies were conducted within the US (n=11). All studies were community based and compared the effectiveness of different exercise interventions, for example aerobic exercise versus strengthening exercise, educational interventions; or no intervention controls. The interventions included activities that were categorised as dynamic weight bearing low force (n=10), non-weight bearing low force (n=3), a combination of activities (n=6), and non-weight bearing high force (n=1). 14 studies used generic exercise instructors; 6 studies employed the skills of specialist exercise instructor (e.g. Yoga, TaiChi); and one included a trained Arthritis Foundation leader. Compared to educational interventions or no intervention controls, community based exercise for OA led by non-healthcare professionals demonstrated significant improvement in pain, function and quality of life outcomes. Of those studies that explicitly reported information on adverse events (n=14), these were on the whole minor and related to pain and soreness following exercise.

Conclusions: To our knowledge this is the first systematic review to examine and demonstrate the effectiveness of exercise interventions led by community-based, non-healthcare professionals for lower-limb osteoarthritis. It is hoped that the evidence from this review could inform future service planning and provision. Priorities for future research should be to help strengthen the argument that non-healthcare exercise professionals can provide community based exercise effectively and safely for lower-limb OA. Making the direct comparison of healthcare professional versus non-healthcare professional exercise provision would be one way for future studies to examine this further.

PRESENTATION NUMBER: 59 ASSOCIATION OF PAIN INTENSITY AND PATTERNS WITH RESPONSE TO EXERCISE IN KNEE OSTEOARTHRITIS

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Purpose: While exercise is recommended as the first-line intervention for people with chronic knee pain due to osteoarthritis (OA), a significant proportion of individuals do not respond to exercise interventions and may even report more pain. A normal response to a bout of exercise is characterized by reductions in pain and pain threshold, a phenomenon known as exercise induced hypoalgesia (EIH). Some individuals with chronic pain show an impaired EIH response immediately after exercise which may contribute to non-response after exercise interventions. Understanding clinical characteristics that may help identify people with knee OA who may have impaired EIH could guide personalized interventions. Whether the intensity and pattern of knee pain is associated with an impaired EIH response in people with knee OA is not known. The objective of this study was to determine the relation of knee pain intensity and pattern, i.e. intermittent or constant pain, with the presence of impaired EIH in people with knee OA.

Methods: Individuals with symptomatic knee OA were recruited for this study. Pain intensity was assessed using a numeric pain rating scale (0-10 NRS) 2-weeks apart and the mean of the two ratings was used in the analysis. The Intermittent and Constant OA pain (ICOAP) questionnaire was used to calculate a total, intermittent, and constant pain scores. Participants performed a series of exercises that included three maximal isometric contractions of knee extensors and flexors each and two isokinetic flexion-extension trials at 60°/s and 120°/s, each with five repetitions. Three trials of pressure pain threshold (PPT) was assessed at the patella of the symptomatic knee (n=25) and dorsal aspect of left wrist (n=26) before and after the exercise and the mean of the last two trials at each timepoint was used in the analyses (Fig. 1). An increase in PPT after exercise is considered a normal EIH response; EIH was considered to be impaired if the ratio of the post- and pre-exercise PPT was less than one. We use separate logistic regression models to assess the association of NRS, total, intermittent, and constant ICOAP scores with presence of impaired EIH, adjusting for age, sex, and BMI.

Results: In this cohort, 36% and 46% had impaired EIH at the knee and wrist, respectively (Table 1). Differences in NRS and ICOAP scores by presence of impaired EIH are shown in Fig. 2. One unit higher NRS was associated with 57% and 63% greater odds of impaired EIH at knee (n=25) and wrist (n=26), respectively (Table 2). One-unit higher