

9th Saudi Students Conference in the UK - 2016

Submission No. 50: Effect of physical activity and dietary restriction interventions on the musculoskeletal function of overweight and obese elders with knee osteoarthritis: a systematic review

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Abstract:

Background: it is known that overweight, obesity and ageing are risk factors for developing knee osteoarthritis (OA). Knee OA is considered as the most common form of arthritis. In addition, chronic pain, functional limitation and emotional distress are associated with knee OA which lead to disability and may have a negative effect on quality of life.

Objective: to investigate the effectiveness of combined physical activity and dietary restriction programmes on the musculoskeletal function of overweight and obese elders with knee OA.

Design systematic review and meta-analysis. The study protocol followed the Cochrane handbook method guidelines for a systematic review and PRISMA statement.

Information sources well designed search strategy with comprehensive terms was run through key electronic databases (Ovid, Embase, Web of science and CINAHL). Additional studies were searched manually in the bibliographies of key journals.



Eligibility criteria for included studies randomised controlled trials published in English prior to 13 February 2015. The included participants were overweight and obese elders with BMI $\geq 25 \text{Kg/m}^2$, aged ≥ 55 years of age and with radiographic evidence of unilateral or bilateral knee OA. Animal studies and reports not written in English were excluded. The interventions included physical activity plus dietary restriction programmes and their effect on the musculoskeletal function of overweight and obese elders with knee OA. Usual care (either intervention or non-intervention) was the comparator in this systematic review. The primary outcome measures were body weight, BMI, musculoskeletal function, (including; mobility, ROM and muscle strength). Secondary outcome measures included pain and quality of life.

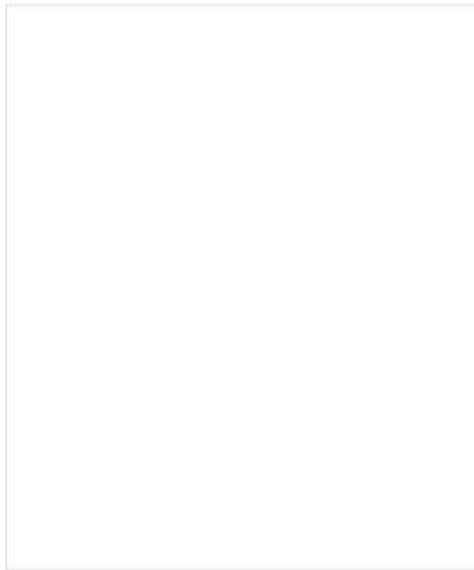
Results: One pilot study and two large trials with $n=794$ were included. Two additional articles reporting additional data and outcome measures were of one trial were found. All of the included trials conducted by the same group from United States. Meta-analysis was used to assess the inter-trial comparability of outcomes between the intervention group and control group. Four studies were included $n=416$ participants. The comparable outcome measures were weight loss, 6 minute walk test, stair climb, physical function, pain and quality of life. In conclusion five studies with a high risk of bias have been included in this systematic review to identify the effect of combined intervention of dietary restriction and physical activity on the musculoskeletal function of overweight and obese elders with knee OA. However, outcome measures comparability has support evidence for some measures but not all. This probably increase the necessity to develop powered clinical trials to optimising diet and

exercise interventions and investigating the effect on new outcome measures which will help health practitioners in this field.

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