

Exercise Evaluation Randomised Trial (EXERT): a randomised trial comparing GP referral for leisure centre-based exercise, community-based walking and advice only

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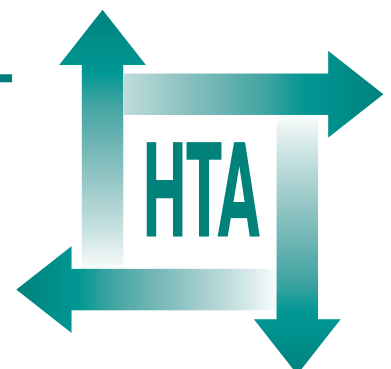
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Executive summary

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Executive summary

Background

Physical activity is known to be beneficial in reducing the risk of cardiovascular disease, but there is a high prevalence of inactivity in the UK population. Primary care is an important setting for encouraging increased physical activity, but brief advice from GPs may not be effective in increasing physical activity levels. Exercise referral schemes, also known as exercise on prescription, have been developed to address this issue and are increasingly popular, but have not been rigorously evaluated.

Objectives

Building on a large local exercise referral scheme, the objectives were to evaluate and compare the effectiveness and cost-effectiveness of a leisure centre-based exercise programme, an instructor-led walking programme and advice only in patients referred for exercise by their GPs.

Methods

Design

The study was a single-centre, parallel-group, randomised controlled trial, consisting of three arms, with the primary comparison at 6 months. The two structured exercise groups were followed for a further 6 months. Subjects in the control arm were rerandomised to one of the other trial arms and followed for a further year, although these data are not included in this report.

Setting

Assessments were carried out at Cophall Leisure Centre in Barnet, an outer London borough, and exercise programmes conducted there and at three other leisure centres and a variety of locations suitable for supervised walking throughout the borough.

Participants

Participants were aged between 40 and 74 years, not currently physically active and with at least one of the following cardiovascular risk factors:

raised cholesterol, controlled moderate to mild hypertension, obesity, current smoking, diabetes and/or a family history of myocardial infarction at an early age.

Interventions

Of 1105 referrals received at the leisure centre over a 3-year period, 943 patients agreed to participate in the trial. They were assessed in cohorts and randomised to one of the following three arms: a 10-week programme of supervised exercise classes, two to three times a week in a local leisure centre; a 10-week instructor-led walking programme, two to three times a week; an advice-only control group who received tailored advice and information on physical activity including information on local exercise facilities. After 6 months the control group were rerandomised to one of the other trial arms. Assessments took place before randomisation, at 10 weeks (in a random 50% subsample of participants), 6 months and 1 year in the leisure centre and walking arms. The control participants were similarly assessed up to 6 months and then reassessed at the same intervals as those initially randomised to the leisure centre and walking groups.

Main outcome measures

The primary outcome measures were changes in self-reported exercise behaviour, blood pressure, total cholesterol and lipid subfractions. Secondary outcomes included changes in anthropometry (waist-hip ratio, body mass index and percentage body fat), cardiorespiratory fitness, flexibility, strength and power, self-reported lifestyle behaviour, general and psychological health status, quality of life and health service usage.

The costs of providing and making use of the service were quantified for economic evaluation.

Results

Follow-up rates were 66% of those eligible at the 10-week assessment, 60% at 6 months and 50% at 1 year. Primary outcomes were analysed by intention to treat.



All three study groups increased their duration of activity of at least moderate intensity by 10 weeks. By 6 months, the increase was somewhat attenuated, but the duration of at least moderate activity remained significantly higher than at baseline, the greatest change occurring in the walking group. At 1 year, both leisure centre and walking groups maintained significant increases compared with baseline. However, there was no significant difference between the increases in duration of at least moderate activity in the three study groups at any assessment point.

There was a net increase in the proportion of participants achieving at least 150 minutes per week of at least moderate activity in the sport/leisure and walking categories in all three study groups: at 6 months, the net increases were 13.8% in the leisure centre group, 11.1% in the walking group and 7.5% in the advice-only group.

There were significant reductions in systolic and diastolic blood pressure in all groups at each assessment point compared with baseline, the largest reductions of about 6/4.5 mmHg being observed at 1 year in the leisure centre and walking groups. There were also significant and sustained improvements in cardiorespiratory fitness and leg extensor power, and small reductions in total and low-density lipoprotein cholesterol in all groups, but there were no consistent differences between the groups for any parameter over time.

All three groups showed improvement in Hospital Anxiety and Depression Scale anxiety and Short Form 36 (SF-36) mental well-being scores 6 months after the beginning of the trial. Leisure centre and walking groups maintained this improvement at 1 year. There were no differences between groups.

Costs to the participants amounted to £100 for the leisure centre scheme and £84 for the walking scheme, while provider costs were £186 and £92, respectively. Changes in overall SF-36 scores were small and advice only appeared the most cost-effective intervention.

Conclusions

Implications for healthcare

The results of this trial suggest that referral for tailored advice, supported by written materials,

including details of locally available facilities, supplemented by detailed assessments may be effective in increasing physical activity. The inclusion of a 10-week programme of supervised exercise classes or walks as a formal component of the scheme may not be more effective than the provision of information about their availability. On cost-effectiveness grounds, assessment and advice alone from an exercise specialist may be appropriate to initiate action in the first instance. Subsidised schemes may be best concentrated on patients at higher absolute risk, or with specific conditions for which particular programmes may be beneficial. Walking appears to be as effective as leisure centre classes and is cheaper. Efforts should be directed towards maintenance of increased activity, with proven measures such as telephone support.

Recommendations for research

An updated meta-analysis of published exercise interventions should be undertaken using the standardised mean difference approach.

To improve future comparability of exercise intervention trials, standardised methods should be developed for measuring and presenting outcomes. This should include the development of guidelines both on the content and method of application of a standard physical activity questionnaire for trial use and on the way in which changes in duration and intensity of physical activity and in energy expenditure are best presented.

Research should identify how physical activity questionnaires might best be supplemented by objective measurements, including measures of cardiorespiratory fitness in field trials and whether simple submaximal fitness tests can be usefully incorporated into routine practice.

Research should aim to identify the components of interventions that may be beneficial for particular target groups in comparison with minimal intervention. These should include the frequency and intensity of support required to maximise exercise continuation, the value of physical assessment procedures and feedback as a stimulus to continue exercise, and the place of professional compared with lay advisers.

The effectiveness and cost-effectiveness of opportunistic referral by GPs and practice nurses versus proactive cold-calling of at-risk individuals on practice lists should be compared. ►

Alternative strategies for involving groups under-represented in present schemes, including men and members of deprived communities and specific minority groups, should be compared.

Studies of schemes should include qualitative research with referring clinicians and participants to determine the reasons for success or failure and should allow for long-term follow-up.

Publication

Isaacs AJ, Critchley JA, See Tai S, Buckingham K, Westley D, Harridge SDR, *et al.* Exercise Evaluation Randomised Trial (EXERT): a randomised trial comparing GP referral for leisure centre-based exercise, community-based walking and advice only. *Health Technol Assess* 2007;**11**(10).

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