Adherence to worksite exercise programs: an integrative review of recent research

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Authors' objectives
To summarise and critique the literature on worksite exercise interventions that sought to increase adherence to exercise.

Searching
MEDLINE, CINAHL, Sport and Leisure Index, Sociology of Leisure and Sport Abstracts, Physical Fitness (Sports Medicine), Psychological Abstracts, ABI/INFORM and National Institute for Occupational Safety and Health (NIOSH) databases were searched from 1980 using the keywords provided; relevant citations were tracked in published papers. Unpublished studies were not sought.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), quasi-experimental, time series, and pre-experimental studies, where the interventions were in place before the study began, were included if they fulfilled the following criteria: published research describing worksite exercise programmes and specific strategies to improve exercise adherence; studies examining actual exercise behaviour and not merely intent to exercise; and studies where adherence to exercise was listed as one objective of workplace exercise programmes. The duration of the studies ranged from 16 weeks to 12 years.

Specific interventions included in the review
Interventions to improve exercise adherence included: annual health screen, counselling, seminars on exercise, on-site exercise programmes as part of a larger health promotion programme, supervised and unsupervised exercise, training group, fitness assessment and consultation, recommendation for lifestyle changes, personal preferences for exercise, public displays and prompts, self-directed behavioural strategies, monitoring with logs, phone contact and/or reminders, low-intensity exercise, low-impact supervised aerobic classes, self-kept log, lottery, contracting, monetary incentive, team competition, healthy lifestyle environment, weekly exercise classes, competitions, planning involvement, personalised exercise programme, facility orientation and social support.

Participants included in the review
Participants were volunteers of both sexes and included police officers, university employees, university graduate students and employees of several companies. Mainly 'white collar' workers were involved: only one study involved 'blue collar' workers. The mean age of the participants ranged from 36 to 53 years.

Outcomes assessed in the review
The main outcome assessed was exercise adherence, which was assessed in the following ways:

actual exercise performed, fulfilment of pre-determined goals, attendance or participation in an exercise class or fitness centre, and direct observation.

Other outcomes assessed included:

intensity of exercise measured by a number of different methods including maximum heart rate energy expenditure, and physical fitness measured using the maximum oxygen uptake, % body fat and flexibility.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.
Assessment of study quality
The authors do not state that they assessed quality, but limitations of the primary studies are given.

Data extraction
It was not stated how data on the author, year, purpose of study, sample size and characteristics, sampling method, type of research design, measurement characteristics, programme strategies and findings, were extracted from the primary studies.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review.

How were differences between studies investigated?
The reasons for differences between studies were discussed but not statistically assessed.

Results of the review
There were 2 RCTs with 136 worksite employees, 3 quasi-experimental studies with 3,860 worksite employees, and 5 pre-experimental studies with 1,398 worksite employees.

Varying time frames, samples and measures made comparisons across studies difficult and only general observations were made. Nine of the 10 included studies showed that exercise adherence strategies worked to increase or improve exercise behaviour. The most impressive results came from programmes having multiple interventions.

Authors' conclusions
Careful planning of interventions to increase adherence will increase the number of workers who exercise regularly.

CRD commentary
This is a well-written review with an assessment of the limitations of the primary studies. Factors limiting the results of this review include, as the authors state, the possibility of selection bias, differential attrition rates for different treatment groups, the lack of accounting for people exercising on their own and not recording these episodes, low statistical power resulting from small sample size, lack of reliability of the measures used to assess participation in exercise programmes, exercise patterns or physical fitness, compensatory rivalry, lack of control of extraneous variables, lack of long-term results and the preponderance of studies on 'white collar' workers. The extensive literature search should have revealed most pertinent articles but by excluding unpublished literature some relevant studies may have been omitted.

There was no assessment of the quality of the included studies, or details of the methodology used to select studies for inclusion. Details of the measures used to ascertain adherence to exercise programmes would have been welcome. It cannot be concluded that any single intervention strategy is superior due to the limitations discussed by the author, the multiplicity of interventions directed at the participants, the lack of validity criteria and the lack of costing the interventions studied.

Implications of the review for practice and research
The authors state that more carefully controlled studies are needed to establish intervention effectiveness, dose response and mechanisms of action for a variety of occupational groups.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.