Exercise interventions during cancer treatment: biopsychosocial outcomes
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Authors' objectives
To provide a comprehensive and systematic review of the literature on exercise interventions during cancer treatment.

Searching
Cancerlit, CINAHL, HERACLES, MEDLINE, PsycINFO and SPORTDiscus were searched using keywords related to cancer, the postdiagnosis time period, and exercise. The keywords used were given in the review. Relevant articles were then handsearched for additional references.

Study selection
Study designs of evaluations included in the review
Experimental studies were eligible for the review. The study designs consisted of randomised controlled trials (RCTs), non-randomised controlled trials and uncontrolled studies.

Specific interventions included in the review
Studies of exercise interventions implemented during cancer treatment were eligible for inclusion in the review. The review included both supervised and unsupervised (home-based) exercise programmes. They included aerobic exercise (cycling, walking and other) and resistance training. All followed traditional exercise prescription guidelines in terms of their frequency, intensity and duration. The length of the programmes was less than 12 weeks. Studies that examined movement therapy or stretching or flexibility exercises aimed at improving range of motion, and those that did not disentangle the effects of exercise from a multiple intervention package, were excluded from the review. The controls were placebo, usual-care, waiting-list or matched controls, or a different exercise frequency.

Participants included in the review
Cancer. Studies of patients undergoing treatment for cancer were eligible for the review. Patients had to be studied during their cancer treatment. This was defined as the time period between treatment initiation and either one week after the last radiation treatment, or three weeks after the last chemotherapy or hormone therapy. The patients included in the review were as follows: early-stage breast cancer patients receiving chemotherapy; mixed cancer patients with high-dose chemotherapy; breast cancer patients receiving radiotherapy; prostate cancer patients on hormone therapy; and mixed cancer patients with mixed treatments.

Outcomes assessed in the review
Studies that reported biopsychosocial outcomes were eligible for the review. Those included in the reviewed studies were functional capacity (7 studies), body composition, mood states (3 studies) and fatigue (3 studies).

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
No formal assessment of quality was undertaken.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data extraction. The following categories of data were extracted: the bibliographic details; the study population and treatment; study design; indication; and results.
Methods of synthesis
How were the studies combined?
A very brief narrative synthesis was undertaken.

How were differences between studies investigated?
Differences between the studies were not investigated, but the author stated that it would be unwise to generalise the benefits of exercise found for one particular cancer or treatment combination to another.

Results of the review
Eleven studies were included in the review (n=371): 7 RCTs (n=316), one non-randomised controlled trial and 3 uncontrolled studies.

All eleven studies showed statistically-significant results in favour of the hypothesis that exercise during cancer treatment will have beneficial effects on a wide variety of outcomes that may enhance quality of life, despite the small sample sizes.

Authors' conclusions
Exercise during cancer treatment is likely to be beneficial to cancer patients. Future research is needed, however, because this field is only beginning to take shape.

CRD commentary
This review addressed a broad question relating to the benefits of exercise therapy in cancer patients. Given that the author asserted that it would be unwise to generalise the benefits of exercise found for one particular cancer or treatment combination to another, the inclusion criteria were rather general and the review was unstructured. The literature search was thorough and it is unlikely that any published studies were missed. The possible contribution of unpublished studies was not considered in this review. The quality of the studies was not assessed formally, although this was discussed generally in the review. The details provided of the individual studies were adequate. A more detailed narrative synthesis, divided according to the cancer or treatment, would have been useful and interesting.

The author's conclusions were only of a very general nature. Overall, the review focuses on the need for further research rather than presenting a detailed analysis of the existing findings.

Implications of the review for practice and research
Practice: The author did not state any implications for practice.

Research: The author states that future research is needed because this field is only beginning to take shape.

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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.