Effectiveness of multidimensional cancer survivor rehabilitation and cost-effectiveness of cancer rehabilitation in general: a systematic review
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CRD summary
This review assessed the effectiveness of multidimensional rehabilitation programmes for survivors of cancer, concluding that the evidence was scarce, but suggested statistically significant benefits, compared with usual care. The findings may not be reliable and should be interpreted cautiously because most studies were of breast-cancer survivors, so their applicability to patients with other cancers remains unknown.

Authors’ objectives
To assess the clinical effectiveness and cost-effectiveness of multidimensional rehabilitation programmes, for patients who had survived cancer.

Searching
MEDLINE, PsycINFO, and The Cochrane Library were searched for English-language articles, published between 1994 and June 2012. Search terms were reported. Reference lists of included articles were manually screened.

Study selection
Eligible for inclusion were randomised controlled trials (RCTs) or quasi-experimental studies evaluating the clinical effectiveness of multidimensional rehabilitation programmes (defined in the review), for cancer survivors (defined in the review). The outcomes of interest were the clinical endpoints and intermediate points. Studies of patients receiving palliative care, those at the end of life, or adult survivors of paediatric cancer were excluded. Studies assessing the cost-effectiveness of single-focus or multidimensional cancer rehabilitation programmes were eligible for inclusion.

The included studies were conducted in the USA, Canada, Europe (mainly the Netherlands), South Korea, or Australia. The patients were survivors of any type of cancer, breast cancer, or gastric cancer. Some patients may have been receiving hormone therapy. The interventions typically included exercise, cognitive-behavioural therapy, psychotherapy, or psychological education, information or both. Interventions lasted between four and 15 weeks. The outcomes were numerous and varied, for example quality of life, fatigue, depression, muscle strength, or physical functioning. They were measured using various tools. For controlled studies (where reported), most of the controls were usual care, waiting list, or exercise alone.

Two reviewers independently screened studies for inclusion. Discrepancies were resolved by discussion or referral to a third reviewer.

Assessment of study quality
Studies of clinical effectiveness were assessed for quality using the Cochrane risk of bias tool. The authors did not state how many reviewers assessed study quality.

Data extraction
The means and standard deviations were extracted, or estimated, to calculate effect sizes (Cohen’s d) and 95% confidence intervals.

The authors did not state how many reviewers extracted the data.

Methods of synthesis
The findings were presented in a narrative synthesis and in tables. Separate comparisons were made for studies of different designs and different rehabilitation programmes (single-focus versus multidimensional, and comprehensive versus standard programmes).

Results of the review
Twelve studies (16 articles; range 21 to 658 participants) were included in the review. Seven were RCTs, three were before-and-after studies, one was quasi-experimental, and one was longitudinal. The risk of bias varied; three studies were at a high risk for selective reporting, and six were at a high risk for other sources of bias (further details were reported). Study follow-up ranged from immediately after intervention to 12 months. Retention rates ranged from 64% to 100%.

With the exception of one before-and-after study, all studies showed statistically significant improvements, for patients receiving multidimensional rehabilitation, for all outcomes or some outcomes. The improvements found at the end of intervention were not necessarily sustained over time.

One study (four articles) compared single-theme versus multidimensional programmes; none of the articles reported statistically significant differences in the outcome measures. Thirteen studies reported on health-related quality of life; effect sizes ranged from -0.12 (95% CI -0.45 to 0.20) to 0.99 (95% CI 0.69 to 1.29), with three studies reporting sustained improvements at their last follow-up. Other findings were reported.

Cost information
The incremental cost-effectiveness ratios ranged from savings of 16,976 Euros (EUR) per quality-adjusted life-year (QALY) gained with cognitive-behavioural therapy plus standard in-patient rehabilitation, compared with standard rehabilitation alone, to a cost of EUR 11,072 per QALY gained with group exercise and psychological intervention, compared with home physiotherapy.

Authors’ conclusions
The evidence for multidimensional rehabilitation programmes was scarce, but suggested statistically significant benefits, compared with usual care, particularly for fatigue and physical outcomes.

CRD commentary
The review question was broad, as were the inclusion criteria for the outcomes. The literature search was limited to articles published in English, which means that potentially relevant articles may have been missed. The authors screened studies for inclusion, in duplicate, but it was unclear whether this was the case for data extraction and quality assessment, which means that reviewer error and bias cannot be ruled out. Study quality was assessed, indicating that most studies were at some risk of bias.

The synthesis seems to have been appropriate, but was somewhat limited for quantitative data (other than for health-related quality of life), which makes it difficult to corroborate the findings. There was considerable variability across articles in their interventions, outcomes and outcome measures, and most studies had small samples.

The authors acknowledged the limited evidence, short follow-up for most studies, and the potential that studies might have been underpowered to evaluate some outcomes. They stated that their findings should be interpreted with caution as the literature was dominated by studies of exercise interventions for breast cancer survivors. So, these findings may not be reliable, and their suggestion to interpret the findings cautiously should be heeded; their applicability to other cancer populations remains unknown.

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

Research: The authors stated that future well-designed studies should assess both single-dimension and multidimensional interventions, and patients with all cancer types. Study and patient details should be better described, and the cost-effectiveness of the programmes should be assessed, from a societal and a health care perspective.

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