

(Cost-)effectiveness of Cancer Rehabilitation

A Systematic Review

Janne Mewes, MSc^a, Lotte Steuten, PhD^a, Maarten IJzerman, PhD^a, Wim van Harten, MD PhD^{ab}

^aDept. Health Technology and Services Research, University of Twente, ^bNetherlands Cancer Institute – Antoni van Leeuwenhoek Hospital

Background

After the completion of primary treatment, a large proportion of cancer patients suffers from complaints such as depression or reduced physical functioning, and is in need of rehabilitation. The evidence-base for rehabilitation interventions is growing and is strongest for physical exercise. Other interventions, such as cognitive-behavioral therapy, psycho-education, and return-to-work programs are also showing promising results.

As many cancer survivors have several complaints, often they are recommended to participate in a multidimensional rehabilitation program, which includes various interventions in order to alleviate all of the symptoms.

Since the number of people who have or had cancer is increasing fast, cost-effectiveness is an important issue in the implementation of cancer rehabilitation services.

Objective

To systematically review the published evidence on:

- Effectiveness of multidimensional rehabilitation programs for cancer survivors who have finished primary treatment.
- Cost-effectiveness of any cancer rehabilitation intervention for patients during or after primary treatment.

Methods

Systematic literature review of studies published in Medline, PsycINFO, and Cochrane library.

Inclusion criteria

Type of study	Primary study, meta-analysis, systematic review
Type of data	Only quantitative
Participants	Any type of cancer patients/survivors, palliative patients are excluded

Results

Ten articles on the effectiveness of multidimensional rehabilitation programs and four economic evaluations of cancer rehabilitation interventions were included.

Results of the studies on the effectiveness of multidimensional cancer survivor rehabilitation

Year of publication	2005-2010
Interventions	Exercise combined with either cognitive-behavioral therapy (n=4), psycho-education (n=2), self-help-education (n=1), or information support (n=1)
Study design	Randomized controlled trial (n=6), pretest-posttest (n=2), quasi-experiment (n=1), longitudinal study (n=1)
Cancer type	Any (n=7), breast (n=2), gastric (n=1)
Number of participants	21-147
Follow-up	End of intervention (n=5), one week (n=1), three months (n=3), nine months (n=1)

A wide variety of outcome measures was used. Quality of life is the only outcome measure that most of the articles shared. All articles, except for one, found significant improvements on all or some of the outcome measures. Improvements were especially found for fatigue and physical outcome measures. When evaluated, multidimensional rehabilitation was not more effective than participating in only one intervention.

Results of the economic evaluations of cancer rehabilitation

Year of publication	2005-2011
Interventions	Physiotherapy compared to group exercise and psycho-education, videotape intervention compared to psycho-educational counseling, supportive-expressive group-therapy, and a preventive swallowing exercise program
Study design	Cost-effectiveness analysis (n=3), cost-minimization analysis (n=1), cost-utility analysis (n=1)
Perspective	Societal (n=2), health care system (n=1), provider (n=1)
Cancer type	Breast (n=3), head and neck (n=1)
Incremental cost-effectiveness ratios (ICER)	AUS\$ 1,344 to 14,478 and €3,197 per quality-adjusted life year. For other outcome measures, an ICER of US\$2.22 and CAN\$5,550 for one unit change in effect were found.

All of these economic evaluations analyzed different interventions. Some articles did not find the intervention evaluated to be effective. In cases where the intervention itself was effective, a favorable cost-effectiveness outcome was found.

Discussion

Multidimensional rehabilitation programs:

Most studies found significant improvements on only some of the outcome measures, mostly fatigue and physical outcomes.

The studies did not assess if the participants actually suffered from the symptoms the rehabilitation programs aim to improve. This might lead to an underestimation of the effect size in patients who would be eligible for these programs in practice.

No attention was given to the timing and sequence of the interventions in the multidimensional programs, whereas this might highly influence their overall effectiveness.

Future trials should compare the combined interventions to the single interventions and a control group.

Cost-effectiveness:

Although all economic analyses evaluated very different interventions, they suggest that cancer rehabilitation has the potential to be a cost-effective means of spending health care resources.

Conclusion

The current evidence-base on the effectiveness of multidimensional cancer rehabilitation and the cost-effectiveness of cancer rehabilitation interventions is very limited. Many combinations of interventions in multidimensional rehabilitation are not evaluated yet. Multidimensional rehabilitation was found to be effective, however, not more effective than a single intervention.

The cost-effectiveness of most cancer rehabilitation interventions is not evaluated yet. The interventions that are evaluated show acceptable cost-effectiveness ratios.

