Effects of psychosocial interventions on quality of life in adult cancer patients: meta analysis of 37 published controlled outcome studies

Rehse B, Pukrop R

CRD summary
This review evaluated the effectiveness of psychosocial interventions on quality of life in adults with cancer. The authors' concluded that psychosocial interventions of at least 12 weeks improve quality of life. Lack of detail on included studies and broad inclusion criteria make it difficult to determine the type of intervention or specific population to which the results apply.

Authors' objectives
To determine the effectiveness of psychosocial interventions on subjective quality of life (QoL) in adult patients with cancer.

Searching
MEDLINE, AMED, CINAHL, Cancerlit, PSYNDEXplus, PsycLIT and SERLINE were searched for English or German literature published between 1970 and July 1999 using the search terms 'neoplasms', 'psychotherapy' and 'quality of life'. The reference lists of retrieved studies and reviews articles were also checked for additional studies.

Study selection
Study designs of evaluations included in the review
Studies with at least one control group were eligible for inclusion. The specific design details of each of the included studies were not provided.

Specific interventions included in the review
Studies of any psychosocial intervention were eligible for inclusion. The categories of intervention studied were patient education, social support, coping skills training, and psychotherapeutic interventions. Further details of these categories were provided in the report.

Participants included in the review
Studies of adult patients with cancer were eligible for inclusion. Patients with breast cancer were the most frequently presented in the included studies, followed by patients with neoplasm of the lung and mediastinum, gastrointestinal neoplasm, and other sites (not specified in the report).

Outcomes assessed in the review
Studies evaluating QoL were eligible for inclusion. The QoL assessment instruments used in the included studies were classified as emotional versus functional, global versus specific, self-reported versus observer rating, and trait versus state. Further details on the different instruments were provided in the report. Studies that evaluated psychiatric syndromes (fear or depression), survival time, relapse rate or the side-effects of treatment were excluded.

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

Assessment of study quality
The methodological quality of each of the included studies was assessed for internal validity, external validity, construct validity and statistical conclusion validity. Each criterion was rated as fulfilled or not fulfilled, and was used to derive a methodological quality of low (if a below average number of criteria were fulfilled) or high (if a greater than average number of criteria were fulfilled). The specific details of each criterion were not provided in the report. Two reviewers
independently assessed the overall methodological quality of each included study. Any disagreements were resolved through discussion.

Data extraction
Two reviewers independently extracted the data from each included study. Any disagreements were resolved through discussion.

Methods of synthesis
How were the studies combined?
The effect sizes from each included study were transformed into a correlation coefficient equivalent using meta-analytic software, to obtain an average that was weighted by the sample size along with 95% confidence intervals (CIs). The effect sizes were only transformed if they were significant at the specified level (P<0.05). Studies that were not significant were assumed to be zero. If studies had more than one treatment group, the effect size was obtained for the QoL assessment with superior psychometric properties. In addition, the standardised mean difference (d) between the experimental and control groups was obtained for each correlation coefficient equivalent. Publication bias was assessed using the fail-safe N technique.

How were differences between studies investigated?
Homogeneity of the included studies was assessed using the chi-squared test and by examining the observed variance in effect sizes and residual variance. Separate subgroup analyses were performed according to potential moderating variables: sociodemographic and clinical sample parameters (age, gender and site of cancer), characteristics of the psychosocial intervention (type and duration), conceptualisation of the QoL instrument used, and the methodological quality. If the standardised mean difference for each subset was greater than 0.05 and the average residual variance for each subset was lower than the entire sample, then the moderating effect was considered significant and was further investigated using a multiple classification analysis.

Results of the review
Thirty-seven controlled studies (n=3,120) were included in the analysis.

On average, psychosocial interventions had a positive effect on the QoL in adult patients with cancer (correlation coefficient equivalent 0.31, 95% CI: -0.13, 0.75; d=0.65), corresponding to a moderate effect size. However, all tests of homogeneity suggested that there was heterogeneity. A subgroup analysis of the potential moderating variables found that the effect size increased when only male patients were treated, the psychosocial intervention was a patient educational programme, the duration of the intervention was longer than 12 weeks, the measurement of QoL was self-reported and referred to functional adjustment, and the methodological quality was better than average. When these were inputted into the multiple classification analysis, the only variable that remained significant was the duration of the intervention. It was estimated that 70 unidentified studies with an effect size of zero would be required to reduce the observed effect size to 0.10. This suggests that it is probably unlikely that studies were missed from the search and it increases confidence in the review findings.

Authors' conclusions
Psychosocial interventions of at least 12 weeks' duration improve the QoL in adult patients with cancer.

CRD commentary
The review addressed a broad range of participants, interventions and outcomes, which resulted in vague inclusion criteria. This could potentially affect the generalisability of the review findings. Several sources were searched to identify relevant studies and an attempt was made to limit language bias. Unpublished studies were not sought explicitly, although the authors did not find evidence of publication bias. The authors failed to use methods to minimise bias when selecting studies for inclusion; however, methods were used to protect against bias in the extraction of data and assessment of methodological quality. The quality of the included studies was assessed systematically and used to
explore differences in the effect sizes, although the specific criteria used were not given in the report. This makes it difficult to ascertain the appropriateness of the criteria used and the impact this could have on the review findings.

Details of the design and characteristics of the included studies were not reported, and there was no indication of what the psychosocial interventions were compared with, thus making it difficult to address the generalisability of the review findings. The authors' conclusion that psychosocial interventions can improve QoL in adult patients with cancer is justified. However, the type of intervention and specific patient population to which these results apply is unclear.

Implications of the review for practice and research
Practice: The authors stated that psychosocial interventions should be included in treatment programmes for cancer patients. Improvements in the network of psychosocial care facilities and treatment skills of health professionals should be addressed, to enable the delivery of psychosocial treatment for at least 12 weeks following hospital discharge.

Research: The authors did not state any implications for further research.

Bibliographic details

PubMedID
12781933

Other publications of related interest
This additional published commentary may also be of interest. Munro AJ. Review: psychosocial interventions have a modest impact on improving quality of life in adult cancer patients. Evid Based Med 2004;9:113.

Indexing Status
Subject indexing assigned by NLM

MeSH
Adaptation, Psychological; Adult; Effect Modifier, Epidemiologic; Female; Health Promotion /methods /standards; Humans; Male; Middle Aged; Neoplasms /psychology; Patient Education as Topic; Psychotherapy; Quality of Life; Research Design; Sample Size; Self-Help Groups; Social Support; Socioeconomic Factors; Time Factors; Treatment Outcome

AccessionNumber
12003001339

Date bibliographic record published
31/08/2004

Date abstract record published
31/08/2004

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.