The effects of psychoeducational care provided to adults with cancer: meta-analysis of 116 studies
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Authors' objectives
To estimate the effects of psychoeducational care on psychological well-being, physical well-being and cancer-related knowledge in adults with cancer, and also to determine whether some types of psychoeducational care are more effective than others.

Searching
CINAHL was searched from 1983 to 1992, MEDLINE from 1966 to 1993, Dissertation Abstracts International from 1861 to 1992, and PsycLIT from 1974 to 1993. Keywords included 'cancer/neoplasms', 'patient/client education', 'counseling', 'behavioral therapy' and 'relaxation therapy'. Dissertations obtained from graduate nursing programmes and from University Microfilms International, and reference list of relevant studies and reviews, were also examined.

Study selection
Study designs of evaluations included in the review
Experimental, quasi-experimental or pre-post single group study design were included. Studies with fewer than 5 participants were excluded, as were studies where all of the treatments groups did not come from the same setting.

Specific interventions included in the review
The interventions comprised one or more of the following general categories of psychoeducational care: education, e.g. the provision of information via interpersonal contact or some other type of medium; nonbehavioural/noncognitive counselling, e.g. nondirective supportive listening or general psychodynamic counselling; behavioural/cognitive counselling, e.g. relaxation-based interventions such as progressive muscle relaxation, guided imagery or hypnotherapy; non-relaxation interventions such as cognitive restructuring and problem-solving skill development. Studies that examined other areas, e.g. the effectiveness of psychoeducational care versus that of pharmacotherapy in reducing nausea, were not included.

Participants included in the review
Adults with cancer. Patient age was reported in 83% of studies and the average ranged from 27 to 69 years. 92% of studies reported gender, of which 18% included women only and 70% had more women than men. 85% of studies were conducted in the USA and 10% in Canada. The majority of studies involved a combination of settings, e.g. outpatients and home.

Outcomes assessed in the review
Physical well-being: nausea and vomiting (e.g. Likert-scale self-reports), and pain (e.g. McGill Pain Questionnaire). Psychological well-being: anxiety (e.g. Spielberger's Anxiety Inventory, Profile of Mood States POMS), Multiple Affect Adjective Checklist [MAACL]), depression (e.g. Beck's Depression Inventory) and mood (e.g. POMS, MAACL). Knowledge about one's health condition.

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 report a method for assessing validity. However, information on how the participants were assigned to treatment groups, and the type of control group, was extracted from the studies.
Data extraction
Study, participant, setting, treatment characteristics and outcomes were extracted. The studies were coded by nurses with doctorates and by doctoral students in nursing. It is unclear from the article whether this was done independently, but inter-rater reliability is reported.

Methods of synthesis
How were the studies combined?
For each study, the effect size (standardised mean difference between treatment and control groups) was calculated and adjusted for sample size. Data were combined in a meta-analysis, both by calculating weighted average effect sizes and by looking at the percentage of studies with a positive or negative direction of effect. To test for threats to validity, univariate and multivariate weighted regression procedures were used to estimate the relationship between three threats (publication bias, Hawthorne effects and internal validity) and size-of-effect. A fail-safe N was also calculated to further assess the threat of publication bias.

How were differences between studies investigated?
Homogeneity was assessed using a statistic based on the random-effects model.

Results of the review
There were 116 studies in total, although in 18 studies only the direction of the treatment effect was provided. The main analysis is based on 98 studies (5,326 patients) representing 116 experimental treatment groups: education only (20 groups); education with counselling (20 groups); nonbehavioural/noncognitive counselling only (8 groups); behavioural/cognitive counselling only (65 groups); and behavioural/cognitive and nonbehavioural/noncognitive counselling (3 groups).

Psychological well-being: Anxiety (68 studies), 95% of studies showed a positive treatment effect, which was significantly larger than the 50% expected by chance. The average effect size (based on 55 studies) was 0.56 (95% confidence interval, CI: 0.42, 0.70), but the effect sizes were heterogeneous. A subgroup analysis by type of psychoeducational care (tested in 5 or more studies) found effect-size values homogeneous in 4 of the 6 subgroups. Further analysis of the 2 heterogeneous subgroups suggests that the 6 types of care have similar effects on anxiety.

Depression (48 studies), 92% of studies showed a positive treatment effect that was statistically-significant. The average effect size (based on 40 studies) was 0.54 (95% CI: 0.43, 0.65) and the effect sizes were homogeneous. Mood (30 studies), 87% of studies showed a positive treatment effect that was statistically-significant. The average effect size (based on 25 studies) was 0.45 (95% CI: 0.32, 0.58), but the effect sizes were heterogeneous. The number of studies within individual types of treatment was too small to enable useful subgroup analysis.

Physical well-being: Nausea (27 studies), 93% of studies showed a positive treatment effect that was statistically-significant. The average effect size (based on 21 studies) was 0.69 (95% CI: 0.45, 0.92), but the effect sizes were heterogeneous. When analysis was restricted to studies in which patients had documented nausea prior to treatment, the effect on nausea was larger and homogeneous (1.04, 95% CI: 0.69, 1.39).

Vomiting (16 studies), 81% of studies showed a positive treatment effect that was statistically-significant. The average effect size (based on 12 studies) was 0.34 (95% CI: 0.09, 0.69) and the effect sizes were homogeneous.

Pain (13 studies), 92% of studies showed a positive treatment effect that was statistically-significant. The average effect size (based on 11 studies) was 0.43 (95% CI: 0.16, 0.69), but the effect sizes were heterogeneous. Relaxation-type interventions showed a large and homogeneous effect (0.91, 95% CI: 0.35, 1.47). Education only or multiple behavioural strategies produced small, non significant and heterogeneous average effect sizes.

Knowledge (19 studies), 95% of studies showed a positive treatment effect that was statistically-significant. The average effect size (based on 18 studies) was 0.90 (95% CI: 0.61, 1.20), but the effect sizes were heterogeneous. Treatment effect on knowledge was significantly larger in treatments that included written content.
Authors' conclusions
Psychoeducational care was found to benefit adults with cancer in relation to anxiety, depression, mood, nausea, vomiting, pain and knowledge. Differentiating the effectiveness of various types of psychoeducational care was problematic. To maximise the utility of this knowledge for clinicians, more research is needed to evaluate the relative effectiveness of different types of psychoeducational care.

CRD commentary
The search appears to be thorough and extensive, but it is unclear whether the search was restricted to English language articles only. There are no details of the primary studies, although bibliographic details of the included studies are given. The majority of studies were undertaken in north America, so the generalisability of the results to the UK needs to be considered. The lack of detail provided in the primary studies inhibits the ability to identify the various components of the interventions responsible for the lack of homogeneity in the studies.

Implications of the review for practice and research
Practice: The authors stated that clinicians should examine their practice to determine if research-based psychoeducational care is being used sufficiently.

Research: Research is still required to evaluate the relative effectiveness of different types of psychoeducational care in adult patients with cancer.

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