

Psychological interventions in patients with cancer



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Introduction

Patients with cancer may experience comorbid conditions such as anxiety and depression, and symptoms including fatigue, nausea and vomiting. Anxiety and depression are both very common and it has been estimated that 16–25% of newly diagnosed cancer patients experience either depression or depressed mood (DSM-IV criteria) (Sellick 1999). Studies in women with breast cancer have shown that up to 30% develop psychological morbidity (either anxiety or depressive disorder) within one year of diagnosis (Bleiker 2000; Maguire 2000). Cancer-related symptoms are also very common. As many as 70–80% of all cancer patients receiving chemotherapy experience nausea and vomiting (Lindley et al. 1989; Morrow 1992) and 78% of patients are estimated to be affected by fatigue (Ashbury et al. 1998), in particular those with advanced cancer and those receiving radiotherapy and chemotherapy treatment (Ahlberg et al. 2003; Jacobsen et al. 2007), where symptoms may persist even after treatment has finished (Servaes et al. 2002).

The use of psychological interventions can be beneficial in the management of cancer-related conditions and symptoms and may result in improved quality of life and better long-term outcomes (Devine and Westlakes 1995). Psychological interventions may be classified into four groups (which also include broader psychosocial interventions) as described below (Fawzy et al. 1995; Greer 2002; Edwards et al. 2004):

1. Cognitive behavioural interventions involve the identification and correction of those thoughts, feelings and behaviours that may be

involved in the development and/or maintenance of cancer-related symptoms or conditions (Jacobsen 1998).

2. Individual psychotherapy interventions involve one-to-one interaction between patient and therapist, aimed at reducing feelings of distress and increasing the patient's morale, self-esteem and ability to cope (Fawzy et al. 1995)
3. Educational interventions provide patients with information about cancer, ways of coping with the disease and what resources are available to help them, with the aim of reducing commonly experienced feelings such as inadequacy, confusion, helplessness and loss of control (Fawzy et al. 1995).
4. Group interventions may be either patient led or led by healthcare professionals and serve to provide social support for cancer patients (Leszcz and Goodwin 1998). One intervention within this category, supportive-expressive group therapy, involves building bonds, expressing emotions, improving the relationship between patient and healthcare professional and improving coping skills (Edwards et al. 2004).

It is also important to consider the effectiveness of other interventions, such as the use of complementary therapies, which may be used alongside psychological interventions to achieve a greater improvement in cancer-related conditions and symptoms than those obtained using psychological interventions alone.

This paper reports the process and findings of a literature review performed to identify and evaluate published literature on psychological interventions in

patients with cancer, and other interventions that may also be effective in achieving improved psychological outcomes, together with a discussion of how the evidence gathered may guide informed decision-making on best clinical practice.

Data sources and search strategy

Electronic searches were performed on the Medline, CINAHL and PsychINFO databases for English language articles published between 1998 and 2008. Search terms included cancer AND intervention OR cancer AND therapy plus education OR patient education OR educational OR cognitive behavioural OR cognitive OR psychotherapy OR psychological OR supportive-expressive OR supportive OR group psychotherapy. For each trial, the quality of both the trial itself and the report in the published literature were assessed.

Literature review

Main results

Well-designed, single or multicentre, randomised controlled trials involving large study samples were selected for inclusion, together with systematic reviews and meta-analyses. Only UK published literature was originally planned for inclusion; however, due to the limited number of high quality, well-designed studies identified, searches were performed again to identify suitable non-UK articles.

Summary of studies selected

Cognitive behavioural interventions

One randomised controlled trial and one systematic review were identified from the UK-published articles found during the electronic searches. The randomised controlled study by Moynihan et al. investigated the use of adjuvant psychological therapy in 73 men with newly diagnosed, non-suicidal men with testicular cancer (Moynihan et al. 1998). This is a cognitive behavioural treatment programme designed specifically for patients with cancer. The therapist was a mental health nurse with experience of caring for testicular patients and who was trained in adjuvant psychological therapy techniques. Outcome measures included validated self-completed questionnaires such as the Hospital Anxiety and Depression Scale, the mental adjustment to cancer scale and the psychosocial adjustment to illness scale. The treatment group showed a minimal reduction in anxiety after 2 months and when adjustment for histology, stage of disease and type of treatment was made, the observed effect was not significant. No between group differences in depression scores were observed after 2 months. After 1 year, control patients actually achieved better anxiety and depression scores than those in the treatment group. This study therefore concluded that there was no benefit from the use of adjuvant psychological therapy in men with testicular cancer.

The systematic review performed by Richardson et al. evaluated the use of hypnosis for nausea and vomiting in patients with various types of cancer (Richardson et al. 2006). Study participants were children in 5 of the 6 randomised controlled studies selected. Meta-analyses demonstrated a large effect size of hypnosis compared with standard treatment, and this effect was at least as large as that achieved with cognitive-behavioural therapy.

Limitations of this review were that the sample sizes of the studies included were small, and some of the studies were poorly described in the published literature. As the majority of the studies were conducted in children, further research is needed in adults to confirm these findings.

A number of non-UK published studies evaluating the use of cognitive-behavioural training in patients with cancer were also identified. A randomised controlled study conducted by Korstjens et al. investigated the effects of physical plus cognitive-behavioural training compared with physical training alone on quality of life in 147 patients with various cancers who had completed treatment (Korstjens et al. 2008). Quality of life was measured using the RAND-36. After 12 weeks, there were no differences between groups in quality of life. It can therefore be concluded that adding cognitive-behavioural training had no added benefit on cancer survivors' quality of life compared with physical training alone.

Individual psychotherapeutic interventions

Fenlon et al. conducted a randomised controlled trial to investigate the effect of relaxation training in reducing the incidence of hot flushes 150 women with primary breast cancer (Fenlon et al. 2008). Study participants in the treatment group received a single relaxation training session in conjunction with the use of practice tapes. Outcome measures included a patient diary and validated measures of anxiety and quality of life. After 1 month, the incidence and severity of hot flushes were significantly reduced ($p < 0.001$ and $p = 0.01$ for incidence and severity, respectively) in the treatment group compared with the control group. Furthermore, distress caused by flushes

was also significantly reduced ($p = 0.01$). However, no changes were observed in anxiety or quality of life measures. Relaxation training may therefore be a valuable intervention to relieve hot flushes and related distress in women with primary breast cancer but may not impact on quality of life.

Educational interventions

A randomised controlled trial by Ream et al. evaluated an educational support intervention (i. e. investigator-designed information pack) for fatigue in 103 chemotherapy-naïve cancer patients. Additional psychological support was also provided by nurses. After 3 months, the intervention group reported significantly less fatigue, lower levels of anxiety, depression and distress, and better adaptive coping (all $p < 0.05$), compared with those in the control group. These findings demonstrate that an educational information pack plus psychological support was more effective than psychological support alone in decreasing levels of fatigue in patients with cancer undergoing chemotherapy and also in improving their psychological and emotional well-being. Further research is needed to evaluate whether educational interventions are effective when used alone.

Jones et al. carried out a randomised trial to investigate whether different types of educational information could increase interaction between the patient and others, thereby improving emotional support and psychological well-being (Jones et al. 2006). A total of 325 patients with breast or prostate cancer who were about to begin radiotherapy participated in the study. Patients were given either a general information booklet on cancer or else a

booklet containing personalised information. Outcome measures included the use of Likert scales to score answers to questions on anxiety and depression (non-validated) and Helgeson's social support questionnaire. Results showed no differences between groups in anxiety or depression scores but patients who received personalised information reported that they were more likely to show their booklet to others and believe it helped in discussions. These findings suggest that this type of intervention may have the potential to improve emotional well-being by increasing the levels of support patients receive from others.

A systematic review conducted by Smith et al. evaluated the effectiveness of mindfulness-based stress reduction as supportive therapy (Smith et al. 2005). This is a highly-structured psycho-educational, skill-based therapy that combines mindfulness meditation with hatha yoga. Two randomised controlled and four uncontrolled trials were selected which used self-reported outcome measures for mood, stress, anxiety and quality of life. Study findings showed improvements in mood and sleep quality and reductions in stress in patients following the use of this intervention. However, the studies included in this review largely involved small sample sizes and may therefore be underpowered. Furthermore, the quality of the written study manuscripts was variable; for example, some contained limited descriptions of the randomisation process and a lack of methods on sampling and participant recruitment. While these results are encouraging and suggest that mindfulness-based stress reduction may be effective as a self-administered intervention for cancer patients, further research conducted

through well-designed, randomised controlled trials is needed to confirm these preliminary findings.

Group psychological interventions

A non-UK published study was conducted to investigate the effectiveness of hospital psychosocial support groups on emotional distress and quality of life in 108 women with breast cancer (Schou et al. 2007). Outcome measures involved the use of the validated Hospital Anxiety and Depression Scale and the EORTC quality of life questionnaire. After 12 months, the prevalence of anxiety was significantly lower among group participants than in non-participants (19% vs 34%; $p = 0.04$). These findings suggest that psychosocial support appears to have a long-term benefit on anxiety although the effects of this intervention on depression and quality of life were inconclusive in this study.

Another non-UK published randomised controlled trial has been conducted to investigate the effect of supportive-expressive group therapy compared with educational materials on distress in 125 women with metastatic breast cancer (Classen et al. 2001). Participants were offered either one year of weekly group therapy plus educational materials or educational materials only. Outcome measures included the Profile of Mood States (POMS) to assess mood disturbance and Impact of Event Scale (IES) to assess change over time in trauma symptoms. Patients who received weekly therapy showed a significantly greater decline in traumatic stress symptoms than those in the control group but no between group differences in mood disturbance were observed. It can be concluded that supportive-expressive

group therapy may offer some benefit in reducing distress in women with metastatic breast cancer.

Complementary/alternative interventions

Wilkinson et al. conducted a multicentre randomised controlled trial to investigate the effectiveness of aromatherapy massage in the management of anxiety and depression in 288 patients with cancer diagnosed with clinical anxiety and/or depression (Wilkinson et al. 2007). Patients were randomised to receive either a course of aromatherapy massage plus usual supportive care or supportive care only. Outcome measures included the validated State Subscale of the State Anxiety Inventory (SAI) and the Center for Epidemiological Studies Depression (CES-D) Scale. At 6 weeks post-randomisation, patients who received aromatherapy massage showed a significant improvement in clinical anxiety and/or depression compared with those receiving standard care only ($p= 0.001$) but this effect was not sustained at 10 weeks post-randomisation ($p= 0.10$). Patients receiving the aromatherapy intervention also recorded a greater improvement in self-reported anxiety at both 6 and 10 weeks than those in the control group ($p= 0.04$). These results suggest that although aromatherapy massage may not confer long-term benefits to patients with cancer, short-term benefits may be seen.

Strengths and weaknesses of this literature review

As previously stated, one of the major limitations of this review was that the original searches only included UK-published articles. As a lack of good quality published research was identified, further searches were conducted

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to identify suitable non-UK articles to include in the review. Although a number of studies were selected that recruited participants with various types of cancer, several studies involved patients with only breast cancer and only one study was conducted in men only. It may therefore be argued that the scope of this review was too narrow. One of the systematic reviews which were included (Richardson et al. 2007) involved small studies which were sometimes poorly designed or poorly written up. The findings of this systematic review should therefore be treated with caution until supported with data from randomised controlled trials.

The strengths of this review are that well-designed randomised controlled trials were included, with sample sizes large enough for adequate power. The reports of these trials were generally good quality and comprehensively written with a logical flow. The aims and/or objectives were clearly stated, and descriptions of study design, participant recruitment and selection, and the randomisation process were included. Many of the outcome measures used were validated instruments, a description of all measures was included and appropriate statistical analyses were used to analyse the data.

Implications for clinical practice

Previous research and systematic reviews have reported conflicting findings on whether psychological interventions for patients with cancer are beneficial or not (Greer 2002; Edwards et al. 2004). The current review also presents conflicting data on the benefits of psychological interventions in cancer patients. Two of the studies selected presented evidence that cognitive behavioural interventions provide no added benefit to cancer

patients. Interestingly, a systematic review concluded that hypnosis may be beneficial but many of the studies were conducted in children so whether these findings are also observed in adults requires further investigation. Individual psychotherapeutic interventions such as relaxation training may be beneficial for breast cancer patients in reducing distress although no improvement in anxiety or quality of life was observed. The effectiveness of these types of interventions in men and in patients with other types of cancer requires further research.

Educational interventions and group psychological interventions produced the best outcomes of all the psychological interventions evaluated. In particular, the use of educational booklets and information packs, either used alone or in conjunction with psychological support, may result in improvements in psychological and emotional well-being in patients with cancer. Again, further research is needed to determine whether these types of interventions are beneficial in patients with all types of cancer.

Psychosocial support groups and supportive-expressive group therapy have both been shown to be beneficial in women with breast cancer, particularly in reducing anxiety and distress. Further evidence is needed to demonstrate the effectiveness of these interventions in men. Complementary and/or alternative treatments such as aromatherapy may play a role as adjuvant therapies and can be beneficial in the short-term management of anxiety and depression in cancer patients.

Conclusions

This review has provided evidence that certain psychological interventions such as educational and group interventions may provide some benefit to cancer patients in the management of cancer-related conditions and symptoms including anxiety, depression, fatigue, nausea and vomiting. Both short- and long-term improvements in quality of life and emotional well-being may be achievable using these interventions but further research is needed to provide the evidence to guide best practice.

Psychological and psychiatric support services are currently unable to meet demand from oncology services and the oncology nurse is ideally placed to play a key role in the provision of psychological care and support for cancer patients, either directly or as part of a multidisciplinary team. For example, educational interventions such as information leaflets can be developed and provided to patients by the oncology nurse, who would also be able to lead group therapy sessions. It is essential that the nurse has sufficient knowledge of the most appropriate psychological intervention to use for patients and the skill and expertise to implement this effectively to ensure a successful outcome.

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patients with cancer: a multicenter, randomized controlled trial', *Journal of Clinical Oncology*, vol. 25, no. 5, pp. 532-9.

Table 1. Summary of main UK published studies selected

Intervention	Reference	Study design	Sample size	Type(s) of cancer/inclusion criteria	Intervention	Main findings
Cognitive behavioural	Moynihan et al. 1998	Randomised controlled trial	73 Individual studies had small sample sizes	Testicular Adult and paediatric cancers	Adjuvant psychological therapy	Small reduction in anxiety months in treatment compared control (months) between groups difference 41; p= 0.001 difference sustained following adjustment for disease-related factors Effect of hypnotherapy was at least
	Richardson et al. 2007	Systematic review of 6 randomised controlled trials			Hypnotherapy	

						large as the achieved v traditional cognitive- behaviour therapy
						After 1 mo significant decrease i flushes p - 001) and i distress (p 01) compa with contr group; diff not observ after 3 mo
Individual psychothera py	Fenlon et al. 2008	Randomis controlled trial	150	Primary breast cancer plus hot flushes	Relaxation plus training	
Educational	Ream et al. 2006 Jones et al. 2006 Smith et al. 2005	Randomis ed controlled trial Randomis ed trial	103 325 Individu al studies had small	Any cancer; all patients were chemother apy naïve Breast or	Investigator- designed information pack Information booklets containing either general or	Significant fatigue, an and depre than contr group (p < At follow-u significant

						change from
						baseline w
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						either mea
						anxiety or
						depression
						scores (an
						baseline 5
						follow-up 6
						depression
						baseline 3
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						Potential a
						clinically v
						interventio
						improve m
						sleep qual
						reduction
						stress
						Limited ev
						of any ben
						short-term
						benefit for
						psycholog
						outcomes
Group	Edwards	5 studies identified from systematic literature	Sample sizes in individual studies ranged	Metastatic breast cancer	Cognitive behavioural (2 studies); supportive-expressive (3	

			search -			generally
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