

# Psychological Intervention

## *The Gap between Research and Practice*

Steven Greer

From the St Raphael's Hospice, North Cheam, Surrey, UK

Correspondence to: Steven Greer, Consultant Psychiatrist, St Raphael's Hospice, London Road, North Cheam, Surrey SM3 9DX, UK. Tel: + 44 020 8335 4575. Fax: + 44 020 8 335 4569

---

Acta Oncologica Vol. 41, No. 3, pp. 238–243, 2002

Despite a substantial body of literature on psychological interventions for cancer patients, there is a dearth of psycho-oncology units where such interventions can be conducted in Britain. For the majority of cancer patients, systematic psychological therapy is not available. Is such therapy of benefit to patients? The literature reveals compelling evidence from randomized trials that patients' quality of life can be improved significantly by psychological interventions, in particular cognitive behavioural therapy, psychoeducational therapy and supportive-expressive group therapy. Evidence concerning the effect of psychological interventions on survival is contradictory. But irrespective of that question, since cancers are chronic diseases, quality of life is important to patients; hence every effort should be made to provide facilities for evidence-based psychological interventions. One psychological factor shown to have a significant detrimental effect on both quality of life and survival of cancer patients is the coping response of helplessness/hopelessness. This response can be altered by psychotherapy.

Received 29 August 2001

Accepted 17 April 2002

---

When my colleagues and I first began a psychological study of women with breast cancer, radical mastectomy was still in vogue. It soon became evident that this operation entailed serious distressing psychological consequences for many of the women. When I reported this fact at a cancer symposium, one well-known and highly respected surgeon reacted angrily, saying that he had performed radical mastectomies for 30 years without a single complaint from any of his patients. Some of his colleagues at that meeting voiced similar opinions, though in more measured tones. Such an attitude illustrates Bertrand Russell's caustic observation:

*Every man, wherever he goes, is encompassed by a cloud of comforting convictions which move with him like flies on a summer day. (1)*

### **MUCH RESEARCH—LITTLE PSYCHOLOGICAL INTERVENTION**

At first sight, this anecdote appears to have little relevance to the topic under discussion. After all, thankfully, radical mastectomy has gone out of fashion (although surprisingly, it is still practised in some European centres, e.g. Fouré et al. (2)). What has not gone out of fashion, however, is the underlying attitude which ignores or mini-

mizes the psychological responses of patients to cancer and its treatments, and the effect of these responses on the quality of life of patients and possibly—in some cases—even on their survival. Arguably, it is this attitude—an unfortunate relic of Cartesian dualism—which is largely responsible for the wide gap between published research on psychological interventions for cancer patients and the dearth of psycho-oncology units where such interventions can be carried out. In Britain, only a handful of psycho-oncology units that provide psychological therapy exist. But even where such units exist, only a small proportion of patients with clinically significant psychological disorders are referred. To take just one example, at the European Institute of Oncology in Milan, of 30 consecutive patients with major anxiety and depressive disorders only 2 were referred to the psycho-oncology unit (3). There can be little doubt that for the great majority of psychologically distressed cancer patients, psychological therapy is not available. Any attempt to improve this state of affairs will depend crucially on providing sound, empirically based evidence that: a) cancers and cancer treatments result in substantial psychological morbidity and b) psychological therapy can alleviate such morbidity to a significant degree. The evidence can be summarized as follows.

### *Cancer-related psychological morbidity*

Faced with a diagnosis of cancer, most people react initially with numbed shock and disbelief followed by anxiety, anger and depression. Although this stress reaction subsides in the majority of cases within a few weeks, a substantial minority of patients go on to develop psychiatric disorders owing to the emotional impact of the primary diagnosis or recurrence of cancer, or the side effects of treatment, or advancing disease. Numerous systematic studies have documented the occurrence of clinical anxiety, depression, severe emotional distress, low self-esteem, feelings of helplessness, as well as impaired social relationships, sexual functioning and work capacity among patients with various cancers (4, 5). The prevalence of psychiatric disorder varies from 47% in a US study (6) to 23% in a British study (7). By far the largest investigation reported a prevalence of psychological distress of 35% among 4496 cancer patients (8). The differing prevalence figures are probably due to differences in methodology. From these three surveys as well as from studies carried out in other countries, for example, Italy (9), The Netherlands (10) and Sweden (11), we can draw the firm conclusion that approximately one-third of cancer patients suffer from clinically significant anxiety and depression.

In the majority of cases, these symptoms are not due to pre-existing psychiatric disorders but are the reactions of psychologically normal individuals subjected to severe stress.

Evidence from an Australian study indicates that the incidence of cancer-related psychological morbidity is two to three times that in the general community (12). Moreover, such morbidity may persist for years even among cancer survivors who are cured (13–16). As well as the effect on patients, the psychological impact of cancer on patients' families has been well documented (17–19).

There is convincing evidence, therefore, from independent studies in many countries, of psychological morbidity associated with cancer and its treatments. Although this fact is now widely accepted, the question arises whether psychological intervention can alleviate cancer-related psychiatric disorders. Some clinicians (including psychiatrists) have argued that since anxiety and depression are natural, understandable consequences of cancer, psychological intervention cannot help. To answer this question, we need to examine the evidence from clinical trials.

### *Effect of psychological intervention on quality of life*

Following the pioneering study by Weisman and his colleagues (20), many randomized controlled trials of psychological interventions with cancer patients have been carried out. Examples of such trials are listed in Table 1.

Results refer to psychological adjustment (predominantly measures of anxiety, depression and coping). Of the 13 randomized trials, 11 reported statistically significant

improvement associated with psychological intervention. Different kinds of intervention were used, such as individual or group counselling, supportive-expressive group therapy (21), psycho-educational interventions (22), supportive discussions and cognitive behavioural therapy (CBT). It is evident that brief therapy (6–8 sessions) is sufficient to produce improvement in psychological adjustment and that, in most cases, this improvement persists for 3 to 12 months. Shear & Maguire's (23) meta-analysis of trials of psychological intervention showed that such intervention had a moderate effect on anxiety (not on depression) and—as might be expected—the effects were greatest when intervention was targeted on patients experiencing significant distress. Moreover, the benefits of psychological intervention are not confined to psychological adjustment per se. A meta-analysis of 45 randomized trials by Meyer & Mark (24) revealed a consistent beneficial effect in three areas relevant to quality of life: a) psychological adjustment, b) functional adjustment (e.g. returning to work) and c) symptoms related to cancer treatment (e.g. anticipatory nausea related to chemotherapy). This major study provides compelling evidence to suggest that psychological intervention can significantly improve the quality of life of cancer patients. The most recent review also concludes that psychosocial interventions reduce depression, anxiety and functional impairment but argues that emphasis should now be placed on cost effectiveness (25).

There are, of course, some unanswered questions. Which type of psychological intervention is the most effective and which patients are most likely to benefit? Bloch & Kissane (26) have proposed that CBT may be more appropriate for patients with early-stage disease to help them adjust to being 'cancer survivors', whereas supportive-expressive therapy, which encourages discussion about existential concerns, may be more suitable for patients with metastatic disease. Preliminary evidence from a recent review of group therapy for cancer patients suggests that psychoeducational therapy which includes elements of CBT provides greater benefits than purely supportive counselling (27). As far as individual cognitive therapy is concerned, only one study has been reported. Moorey et al. (28) compared CBT with supportive counselling for patients with various cancers; CBT resulted in a significantly greater improvement than counselling. However, no firm conclusions can be drawn about the relative efficacy of various psychological interventions because most published trials compare such interventions with no therapy. Large trials involving direct comparisons between different psychological therapies are required. Irrespective of these questions, however, it is clear that cancer patients can benefit from systematic psychological interventions.

### *Effect of psychological intervention on survival*

The first randomized trial was the well-known study by Spiegel et al. (29) who carried out supportive-expressive

**Table 1**  
*Effect of psychological intervention on psychological adjustment*

| Authors                 | Patients   | Cancer        |            | Intervention                    |             | Results                                 |                  | Follow-up Months |
|-------------------------|------------|---------------|------------|---------------------------------|-------------|---|------------------|------------------|
|                         |            | Types         | Stages     | Type                            | Session (N) | Improved (+)                            | Not improved (-) |                  |
| Maguire et al. (46)     | 152 f      | Breast        | All        | Individual Counsel.             | (?)         | -                                       |                  | 4                |
| Spiegel et al. (47)     | 86 f       | Breast        | Metastatic | Group Supportive Expressive     | (50)        | +                                       |                  | 12               |
| Linn et al. (33)        | 120 m      | Various       | Advanced   | Individual Counsel.             | (?)         | +                                       |                  | 3                |
| Forester et al. (48)    | 50 m 50 f  | Various       | All        | Individual Psycho-Educ.         | (10)        | +                                       |                  |                  |
| Cain (49)               | 80 f       | Gynaecol.     | Advanced   | Individual & Group Psycho-Educ. | (8)         | +Indiv = Group                          |                  | 6                |
| Telch & Telch (50)      | 27f 14m    | Various       | All        | Group CBT                       | (6)         | +CBT > support > no therapy             |                  | 3                |
| Bridge et al. (51)      | 139 f      | Breast        | I & II     | Group Relaxation/Imagery        | (6)         | +                                       |                  | 0                |
| Cunningham & Tocco (52) | 39 f 14 m  | Various       | All        | Group CBT/ Psycho-Educ.         | (6)         | +CBT/Psycho-Educ. > supportive discuss. |                  | 3                |
| Fawzy et al. (31)       | 35 f 31 m  | Mal. melanoma | I & II     | Group CBT/ Psycho-Educ.         | (6)         | +                                       |                  | 6                |
| Greer et al. (7)        | 124 f 32 m | Various       | All        | Individual CBT                  | (6)         | +                                       |                  | 12               |
| Edelman et al. (53)     | 124 f      | Breast        | Metastatic | Group CBT                       | (8)         | +                                       |                  | 6 <sup>1</sup>   |
| Edmonds et al. (54)     | 66 f       | Breast        | Metastatic | Group CBT/ Psycho-Educ.         | (35)        | -                                       |                  | 6                |

<sup>1</sup> Improvement not maintained.

group therapy with women suffering from metastatic breast cancer. Groups of 7 to 10 women met weekly for one year during which patients discussed family and communication problems and how to live with terminal illness; emphasis was put on expressing feelings about their illness and on learning how to support each other. The authors, to their surprise, found that patients who had received this psychological intervention lived for 18 months longer on average than patients in the control groups; this survival advantage persisted after known prognostic variables had been taken into account.

Since Spiegel's study, several other investigations have been reported, but none of these is a replication study. Richardson et al. (30) studied the effect of a psychoeducational intervention on patients with various haematological cancers. At follow-up 2–5 years later, patients receiving this intervention had a better survival rate than controls. Fawzy et al. (31, 32), in their randomized trial of group therapy for patients with malignant melanoma, conducted six weekly sessions which focused on health education, stress management, coping skills and group support. At follow-up 5–6 years later, patients who had received group therapy were significantly more likely to be alive than control patients. This study is of particular interest because it is the first in which immune responses were also mea-

sured. Up to 6 months after group therapy, this psychological intervention was associated with significant increases in the percentage of NK cells, in NK-cell activity and in CD8 T-cells. Of particular interest is the result that higher levels of NK-cell activity predicted survival.

Other workers have found no correlation between psychological interventions and survival. Linn et al. (33) gave individual supportive psychotherapy to a series of men with metastatic lung cancers. In this randomized trial, no effect on survival had occurred at the 1 year follow-up. Cunningham et al. (34) randomly allocated women with metastatic breast cancer to either 35 weekly sessions of group therapy (supportive and CBT) or a control group that received a home study cognitive behavioural package. At 5 years' follow-up, similar survival rates were found in both groups. The authors pointed out, however, that the control group was not a no-treatment group and that, in fact, 28% attended an outside support group. Another randomized trial of group CBT (8 weekly sessions) for women with metastatic breast cancer was conducted by Edelman et al. (35) who found no significant effect of CBT on survival at 2 to 5 years' follow-up.

It is evident that, currently, we cannot draw any conclusions about the effect of psychological interventions on survival. Two replication studies of Spiegel's original study

**Table 2**  
*Helplessness/hopelessness and disease outcome*

| Authors                 | Subjects n, sex | Disease                             | Outcome Increased risk            | Follow/up years |
|-------------------------|-----------------|-------------------------------------|-----------------------------------|-----------------|
| Greer et al. (55)       | 62 f            | Ca. Breast                          | Recurrence/death                  | 5, 10, 15       |
| Pettingale et al. (56)  |                 |                                     |                                   |                 |
| Greer et al. (57)       |                 |                                     |                                   |                 |
| Cassileth et al. (58)   | 359 m & f       | Various cancers                     | H/H unrelated to outcome          | 3–8             |
| Di Clemente et al. (59) | 117 m & f       | Malignant melanoma                  | Recurrence in m                   | 2.1             |
| Goodkin et al. (60)     | 73 f            | Cervical intra-epithelial neoplasia | Progression from CIN → Ca. cervix | ?               |
| Jensen & Muenz (61)     | 52 f            | Ca. breast                          | Recurrence/death                  | 1.7             |
| Morris et al. (62)      | 50 m & f        | Lymphoma                            | Recurrence/death                  | 5               |
|                         | 88 f            | Ca. breast                          | Recurrence/death                  | 5               |
| Ringdal (63)            | 253 m & f       | Various cancers                     | H/H unrelated to outcome          | 2               |
| Watson et al. (41)      | 578 f           | Ca. breast                          | Recurrence/death                  | 5               |
| Callahan et al. (43)    | 1 384 f         | Rheumatoid arthritis                | Death                             | 5               |
| Everson et al. (42)     | 2 428 f         | In general population               | Death                             | 5               |

are in progress (36, 37); the results are awaited with considerable interest.

#### *What kind of psychological intervention?*

Having established that psychological intervention is desirable because it can significantly improve the quality of life of cancer patients, and, perhaps, help to prolong survival, the question remains: which kind of psychological intervention is the most effective? As mentioned earlier, more studies are required which compare different interventions such as individual versus group therapy or cognitive versus other approaches. Although these issues need to be addressed, evidence from the research literature points to an important clue. Various studies show that both quality of life and duration of survival are related to the patients' coping response. In particular, the response of helplessness/hopelessness (H/H) is significantly associated with poor quality of life as evidenced by increased clinical anxiety and depression, (7, 38–40). The effect of H/H on subsequent survival has also been studied. The majority of these prospective studies report that H/H is associated with a significantly increased risk of recurrence and death (Table 2) and this association is independent of stage of disease and other biological prognostic factors, as reported, for example, in Watson et al. (41).

An intriguing aspect of the literature on the relationship between H/H and disease outcome is that, apparently, the prognostic significance of H/H is not confined to cancer (Table 2). A general population study of men aged 42–60 followed up for 5 years revealed that men with high hopelessness scores were at significantly greater risk of death (from all causes) than men with low hopelessness scores (42). A 5-year follow-up study of women with rheumatoid arthritis reported high helplessness scores to be associated significantly with higher subsequent mortality (43). These findings, if verified, raise important questions, not least which biological mechanisms mediate the

effect of H/H on survival (44). From a clinical perspective, the findings indicate a need for psychological intervention to enable patients to overcome feelings of H/H and to develop more positive coping responses.

#### *Psychotherapy can alter helplessness/hopelessness*

In three separate randomized-controlled trials of CBT with patients suffering from various early-stage and advanced cancers, my colleagues and I found that:

1. CBT significantly reduced H/H and increased positive coping, i.e. fighting spirit (7), and
2. When CBT was compared with supportive counselling, both interventions reduced H/H but CBT was superior in this respect (28).

Other investigators have reported that group support also resulted in a significant reduction in H/H in women with breast cancer (45). No results to the contrary have been reported so far. Although further studies are required, the present results indicate that H/H can be reduced by psychotherapy. The crucial question, namely whether such reduction in H/H can influence survival, remains to be investigated.

## CONCLUSIONS

Approximately one-third of cancer patients suffer from clinically significant anxiety and depression.

There is a wide gap between the substantial body of research which indicates that psychological intervention can significantly improve the quality of life of cancer patients and the dearth of facilities for psychological treatment in oncology units.

In contrast to strong evidence indicating the beneficial effects of psychological intervention on quality of life, the evidence concerning the effect of such intervention on survival is inconsistent. Further studies are required before any conclusions can be drawn.

One psychological factor that has been shown to have a significant detrimental effect on the quality of life as well as on survival of cancer patients is the coping response of helplessness/hopelessness. This effect is independent of other prognostic factors.

The helpless/hopeless coping response can be altered by psychological intervention. Consequently, such intervention should be focused on patients' helplessness/hopelessness. In this way, research can be linked to clinical practice and the gap between them narrowed. The argument for psychological intervention for cancer patients is based on sound, empirically based research.

## ACKNOWLEDGEMENTS

I extend my sincere thanks to Laraine Pereira for her unflinching patience and help in preparing this paper.

## REFERENCES

- Russell B. Dreams and facts. In: Sceptical Essays. London: Allen & Unwin, 1928: 19–24.
- Fouré M, Reich MG, Ulaszewski AL, Jaujekeete M. Coping and self-esteem before and after radical mastectomy. *Psychooncology* 2000; 9: 64. (Abstr).
- Bredart A, Didier F, Roberstson C, et al. Psychological distress in cancer patients attending the European Institute of Oncology in Milan. *Psychooncology* 1999; 8: 7.
- Greer S. Psycho-oncology: its aims, achievements and future tasks. *Psychooncology* 1994; 3: 87–101.
- Holland JC, ed. *Psycho-oncology*. New York: Oxford University Press, 1998.
- Derogatis LR, Morrow GR, Fetting J, et al. The prevalence of psychiatric disorders among cancer patients. *J Am Med Ass* 1983; 249: 751–7.
- Greer S, Moorey S, Baruch J, et al. Adjuvant psychological therapy for patients with cancer: a prospective randomised trial. *Br Med J* 1992; 304: 675–80.
- Zabora J, Brintzenhofeszo K, Cubrow B, Hooker C, Piantadosi S. The prevalence of psychological distress by cancer site. *Psychooncology* 2001; 10: 19–28.
- Grassi L, Rosti G, Albieri G, Marangolo M. Depression and abnormal illness behaviour in cancer patients. *Gen Hosp Psychiat* 1989; 11: 104–11.
- Sneeuw KCA, Aaronson NK, van Wouwe MCC. Prevalence and screening of psychiatric disorder in patients with early stage breast cancer. *Qual Life Res* 1993; 2: 50–1.
- Brandberg Y, Bolund C, Sigurdardottir V, Sjöden P-O, Sullivan M. Anxiety and depressive symptoms at different states of malignant melanoma. *Psychooncology* 1992; 1: 71–8.
- Kissane D, Clarke D, Ikin J. Psychological morbidity and quality of life in Australian women with early stage breast cancer. *Med J Aust* 1998; 169: 192–6.
- Fobair P, Hoppe RT, Bloom J, Cox R, Varghese M, Spiegel D. Psychosocial problems among survivors of Hodgkin's disease. *J Clin Oncol* 1986; 4: 805–14.
- Cella DF, Pratt A, Holland JC. Persistent anticipatory nausea, vomiting and anxiety in cured Hodgkin's disease patients after completion of chemotherapy. *Am J Psychiat* 1986; 43: 641–3.
- Gritz ER, Wellisch DK, Landsverk JA. Psychosocial sequelae in long-term survivors of testicular cancer. *J Psychosoc Oncol* 1988; 63: 41–63.
- Kornblith AB, Anderson J, Cella DF, et al. Hodgkin's disease survivors at increased risk for problems in psychosocial adaptation. *Cancer* 1992; 70: 2214–24.
- Baider L, Cooper CL, Kaplan de Nour A. *Cancer and the family*. Chichester: Wiley, 1996.
- Carlson LE, Bultz BD, Specia M, St. Pierre M. Partners of cancer patients: part I. Impact, adjustment and coping across the illness trajectory. *J Psychosoc Oncol* 2000; 18: 39–63.
- Manne S, Duhamel K, Redd WH. Association of psychological vulnerability factors to post-traumatic stress symptomatology in mothers of paediatric cancer survivors. *Psychooncology* 2000; 9: 372–84.
- Weisman AD, Worden JW, Sobel HJ. *Psychosocial screening and intervention with cancer patients*. Boston: Massachusetts General Hospital, 1980.
- Spiegel D, Spira L. *Supportive-expressive group therapy: a treatment manual of psychosocial intervention for women with recurrent breast cancer*. Stanford, CA: Stanford University School of Medicine, 1991.
- Fawzy IF, Fawzy NW. Psychoeducational interventions. In: Holland JC, ed. *Psycho-oncology*. New York: Oxford University Press, 1998.
- Shear T, Maguire P. The effect of psychological interventions on anxiety and depression in cancer patients: results of two meta-analyses. *Br J Cancer* 1999; 80: 1770–80.
- Meyer TJ, Mark MM. Effects of psychosocial interventions with adult cancer patients: a meta-analysis of randomized experiments. *Health Psychol* 1995; 14: 101–8.
- Owen JE, Klapow JC, Hicken B, Tucker DC. Psychosocial interventions for cancer: review and analysis using a three-tiered outcomes model. *Psychooncology* 2001; 10: 218–30.
- Bloch S, Kissane D. Psychological care and breast cancer. *Lancet* 1995; 46: 1114.
- Edelman S, Craig A, Kidman AD. Group interventions with cancer patients: efficacy of psychoeducational versus supportive groups. *J Psychosoc Oncol* 2000; 18: 67–85.
- Moorey S, Greer S, Bliss J, Law M. A comparison of adjuvant psychological therapy and supportive counselling in patients with cancer. *Psychooncology* 1998; 7: 218–28.
- Spiegel D, Bloom JR, Kraemer HC, Gotthel E. Effects of psychosocial treatment on survival of patients with metastatic breast cancer. *Lancet* 1989; ii: 888–91.
- Richardson JL, Shelton DR, Krailo M, Levine AM. The effect of compliance with treatment on survival among patients with hematological malignancies. *J Clin Oncol* 1990; 8: 356–64.
- Fawzy FI, Cousins N, Fawzy NW, Kemeny ME, Elashoff R, Morton D. A structured psychiatric intervention for cancer patients: I. Changes over time in methods of coping and affective disturbance. *Arch Gen Psychiatry* 1990; 47: 720–5.
- Fawzy FI, Fawzy NW, Hyun CS. Malignant melanoma: effects on early structured psychiatric intervention, coping, and affective state on recurrence and survival 6 years later. *Arch Gen Psychiatry* 1993; 50: 681–9.
- Linn MW, Linn BS, Harris R. Effects of counselling for late stage cancer patients. *Cancer* 1982; 49: 1048–55.
- Cunningham AJ, Edmonds CVI, Jenkins GP, et al. A randomised control trial of the effects of group therapy on survival in women with metastatic breast cancer. *Psychooncology* 1998; 7: 508–17.
- Edelman S, Lemon J, Bell DR, Kidman AD. Effect of group CBT on the survival time of patients with metastatic breast cancer. *Psychooncology* 1999b; 8: 474–81.

36. Classen C, Koopman C, Angell K, Spiegel D. Coping styles associated with psychological adjustment to advanced breast cancer. *Health Psychol* 1996; 15: 434–7.
37. Goodwin PJ, Leszcz M, Koopman J, et al. Randomized trial of group psychosocial support in metastatic breast cancer: the BEST (Breast Expressive-Supportive Therapy) study. *Cancer Treat Rev* 1996; 22 (Suppl A): 91–6.
38. Watson M, Greer S, Young J, Inayat Q, Burgess C, Robertson B. Development of a questionnaire measure of adjustment to cancer: the MAC scale. *Psychol Med* 1988; 18: 203–9.
39. Grassi L, Rosti G, Lasalvia A, Marangolo M. Psychosocial variables associated with mental adjustment to cancer. *Psychooncology* 1993; 2: 11–20.
40. Schnoll RA, Mackinnon JR, Stolbach L, Lorman C. The relationship between emotional adjustment and two factor structures of the Mental Adjustment to Cancer (MAC) Scale. *Psychooncology* 1995; 4: 265–72.
41. Watson M, Haviland JS, Greer S, Davidson J, Bliss JM. Influence of psychological response on survival in breast cancer: a population-based cohort study. *Lancet* 1999; 354: 1331–6.
42. Everson SA, Goldberg DE, Kaplan GA, et al. Hopelessness and risk of mortality and incidence of myocardial infarction and cancer. *Psychosom Med* 1996; 58: 113–21.
43. Callahan LF, Cordray DS, Wells G, Pincus T. Formal education and five-year mortality in rheumatoid arthritis: mediation by helplessness scores. *Arthritis Care Res* 1996; 9: 463–72.
44. Greer S. Mind-body research in psychooncology. *Adv Mind-Body Med* 1999; 15: 236–51.
45. Levine EG, Tario JD, Targ E. Reduction of hopelessness/helplessness coping style in women with breast cancer. *Psychooncology* 2000; 9: 32.
46. Maguire GP, Tait A, Brooke M, Sellwood R. The effects of monitoring on the psychiatric morbidity associated with mastectomy. *Br Med J* 1980; ii: 1454–6.
47. Spiegel D, Bloom JR, Yalom I. Group support for patients with metastatic cancer. *Arch Gen Psychiatry* 1981; 38: 527–33.
48. Forester B, Kornfeld DS, Fleiss JL. Psychotherapy during radiotherapy: effects on emotional and physical distress. *Am J Psychiatry* 1985; 142: 22–7.
49. Cain EN, Kohorn EI, Quinlan DM, Latimer K, Schwartz PE. Psychosocial benefits of a career support group. *Cancer* 1986; 57: 183–9.
50. Telch CF, Telch MJ. Group coping skills instruction and supportive group therapy for cancer patients: a comparison of strategies. *J Consult Clin Psychol* 1986; 54: 802–6.
51. Bridge LR, Benson P, Pietroni PC, Priest RG. Relaxation and imagery in the treatment of breast cancer. *Br Med J* 1988; 297: 1169–72.
52. Cunningham AJ, Tocco EK. A randomized trial of group psychoeducational therapy for cancer patients. *Patient Educ Counsel* 1989; 14: 101–14.
53. Edelman S, Bell DR, Kidman AD. Group cognitive behaviour therapy programme with metastatic breast cancer patients. *Psychooncology* 1999a; 8: 295–305.
54. Edmonds CVI, Lockwood GA, Cunningham AJ. Psychological response to long-term group therapy: a randomized trial with metastatic breast cancer patients. *Psychooncology* 1999a; 8: 74–91.
55. Greer S, Morris T, Pettingale KW. Psychological response to breast cancer: effect on outcome. *Lancet* 1979; ii: 785–7.
56. Pettingale KW, Morris T, Greer S, Haybittle J. Mental attitudes to cancer: an additional prognostic factor. *Lancet* 1985; i: 750.
57. Greer S, Morris T, Pettingale KW, Haybittle JL. Psychological response to breast cancer and 15 year outcome. *Lancet* 1990; i: 49–50.
58. Cassileth BR, Lusk EJ, Miller DS, Brown LL, Miller C. Psychological correlates of survival in advanced malignant disease. *N Engl J Med* 1985; 312: 1551–5.
59. Di Clemente RJ, Temoshok L. Psychological adjustment to having cutaneous malignant melanoma as a predictor of follow-up clinical status. *Psychosom Med* 1985; 47: 81.
60. Goodkin K, Antoni MH, Blaney PH. Stress and hopelessness in the promotion of cervical intraepithelial neoplasia to invasive squamous cell carcinoma of the cervix. *J Psychosom Res* 1986; 30: 67–76.
61. Jensen MA, Muenz LR. A retrospective study of personality variables associated with fibrocystic disease and breast cancer. *J Psychosom Res* 1983; 28: 35–42.
62. Morris T, Pettingale KW, Haybittle J. Psychological response to cancer diagnosis and disease outcome in patients with breast cancer and lymphoma. *Psychooncology* 1992; 1: 105–14.
63. Ringdal GI. Correlates of hopelessness in cancer patients. *J Psychosoc Oncol* 1995; 13: 47–66.