

PSYCHOLOGICAL APPROACHES FOR ENHANCING COPING AMONG CANCER PATIENTS: A REVIEW

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ABSTRACT. *This paper reviews the research on psychosocial intervention with cancer patients. Studies from three major intervention perspectives (i.e., support group therapy, medical education, and coping skills training) are presented and critically examined. Conceptual and methodological problems limit the interpretability of the few controlled investigations. These are discussed in the context of (a) measurement issues, (b) subject selection, and (c) treatment-related issues. Bandura's self-efficacy theory is presented as a potentially useful framework for guiding psychosocial interventions with cancer patients. A recently completed study at Stanford is described to illustrate the application of self-efficacy theory for developing more effective psychological treatment strategies.*

At some point, most of us will experience the painful reality of cancer, either personally or through the affliction of a family member or friend. Present figures indicate that one in four Americans develop cancer and that the rates appear to be climbing (American Cancer Society, 1981). Today more than 2.5 million Americans are living with cancer, with approximately 2 million being diagnosed 5 or more years ago. Until recently a search of the literature would have produced a mere handful of studies describing the psychosocial impact that results from the diagnosis and treatment of cancer. The increased attention to the psychosocial concomitants may be due, in part, to the increased cure rates, extended remissions and other medical advances which have extended the lives of cancer patients. Hence, understanding the problems of living with cancer has become a salient

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issue. Studies investigating the psychosocial consequences of cancer seem to support the obvious, that cancer has a major psychological impact on the lives of patients.

In an ambitious study of 805 cancer patients, Lehmann, Delisa, Warren, deLateur, Bryant, and Nicholson (1978) used a structured interview to assess the psychosocial problems confronting cancer patients. Forty percent of the patients interviewed were judged as experiencing psychosocial problems such as depression, body image concerns, increased marital stress, financial difficulties and vocational upsets. In addition, general weakness and fatigue, pain, and a decrease in activity level were frequently reported.

Maguire, Lee, Bevington, Kuchemann, Crabtree, and Cornell (1978) compared 75 mastectomy patients with 50 women with benign breast disease. All women were assessed by means of psychiatric rating scales and semistructured interviews and then followed over time. One year after surgery, 39% of the mastectomy patients, compared to 12% of the benign breast disease patients evidenced anxiety, depression, and sexual problems that warranted psychiatric help. Anxiety was defined as persistent tension, inability to relax, headaches, sweating and palpitations. Sexual problems involved either termination of intercourse or inability to enjoy it. Sixty-two of the mastectomy patients reported feeling exhausted and low in spirits. In another investigation with mastectomy patients, Jamison, Wellisch, and Pasnau (1978) interviewed 41 mastectomy patients to evaluate their degree of depression. The authors reported that 25% of the women entertained suicidal thoughts following the mastectomy, 40% increased their tranquilizer use post-mastectomy, and 15% reported a significant increase in their alcohol consumption.

The incidence of anxiety, depression and other negative emotional reactions to cancer have also been assessed using self-report instruments. Plumb and Holland (1977) compared Beck Depression Inventory scores of 97 patients hospitalized for treatment of advanced cancer and 99 patients hospitalized following a suicide attempt. Twenty-three percent of the cancer patients scored in the moderately to severely depressed range as compared to 54% of the suicide attempters. These two groups of patients were indistinguishable on the subset of items assessing somatic symptoms such as fatigue and insomnia. Abeloff and Derogatis (1979) administered the SCL90 to 34 metastatic breast cancer patients. Marked psychological distress was found both in patients with a poor prognosis and in patients who subsequently achieved clinical remissions. Breast cancer patients endorsed items reflecting feelings of personal inadequacy, uneasiness during interpersonal interactions, depression, anxiety and loneliness.

In a study employing the MMPI, 25% of a sample of 36 patients suffering from intestinal cancer were significantly depressed (Koenig, Levin, & Brennan, 1967). In another MMPI study with 44 "highly distressed" cancer patients, Sobel and Worden (1979) found depression to be the single most problematic symptom. The MMPI profiles of this high-distressed group were reported to resemble those of neurotic patients. Worden and Weisman (1977) assessed the responses of 40 newly diagnosed breast cancer patients and 50 women with other cancer diagnoses on a battery of psychological tests which included the MMPI, the Profile of Mood States and an Inventory of Predominant Concerns. Twenty percent of the breast cancer patients and 18% of the other women reported experiencing depression, lowered self-esteem, persistent health concerns, pain, loss of energy, difficulty resolving problems, marital problems and troubles with children.

Forester, Kornfell, and Fleiss (1978) investigated patients' emotional reactions

to radiation treatment. The Schedule for Affective Disorders was administered to 200 cancer patients (varying sites) undergoing radiotherapy. Patients reported significant levels of anxiety and depression. These findings are consistent with the results of a study by Peck and Boland (1977), in which 50 cancer patients (varying sites) receiving radiotherapy were interviewed by a psychiatrist before and 1 week following the completion of treatment. In the pre-irradiation interview, 62% of the patients were depressed and 66% were anxious. All but one patient showed signs of depression in the post-irradiation interview and 80% of the patients demonstrated a significant degree of anxiety. The judgments were based on patients' statements regarding loss of sleep, decrease in appetite, reduced activity level, fears concerning radiation and the spread of disease. The increased incidence of depression and anxiety in the post-treatment interviews may be due, in part, to the patients' lack of perceived control and predictability over the outcome of their treatment as well as the adverse physical side effects that often accompany radiation therapy. In a recent study, Leigh, Ungerer, and Percarpio (1980) administered the Locus of Control Inventory and several author constructed questions to 100 cancer patients undergoing radiotherapy. The findings revealed that men were more likely than women to report feelings of control over their illness and to deny knowledge regarding their disease (for example, diagnosis and disease severity). These authors concluded clinical intervention was needed for radiation therapy patients to prevent denial in the face of a potentially fatal illness.

Several authors have described the adverse patient reactions that can accompany cancer chemotherapy (Araoz, 1983; Burish & Lyles, 1983; Redd & Hendler, 1983; Scott, Donahue, Mastrovito, & Hakes 1983). Anticipatory nausea and vomiting, increased pain, fear of medical procedures such as injections, anxiety, and a sense of loss of control over bodily processes are among the chemotherapy concomitants commonly reported. Moreover, these authors warn that the completion of treatment may be jeopardized in some patients who refuse to continue treatment due to these adverse side effects.

Some of the pain and physical side effects that accompany cancer treatments may be exacerbated by emotional distress. A recent study (Spiegel & Bloom, 1983) found that mood disturbance and the meaning of pain to a patient predicted patients' reported pain intensity. Eighty-six women with metastatic breast cancer completed the Profile of Mood States, and were assessed regarding the intensity of their pain and the meaning of that pain for them. Greater mood disturbance and the belief that pain signaled a worsening of their disease were significantly correlated with reported pain intensity. The authors concluded that since the patient sample was homogeneous with regard to medical status, the differential pain experiences reported were due in large part to the patients' emotional status.

Andersen and Hacker (1983) reviewed the handful of studies that have examined the effects of treatment for gynecologic cancer on patients' sexuality and general psychosocial functioning. Although the percentage of patients reporting difficulties depended on a host of factors (i.e., type of treatment, length of time since receiving treatment and stage of disease), the authors concluded that a sizeable number of patients experience diminished desire for sexual activity, decreased frequency of intercourse, serious body image concerns, disruption of social activities and increased anxiety and depression. In addition to these, Krant (1981) describes feelings of alienation, guilt, and shame as frequently experienced by gynecologic cancer patients.

The majority of studies have focused on the impact cancer has on the individual's psychological functioning. A few studies have investigated cancer's influence on patients' interpersonal relationships. An increased incidence of marital discord, sexual problems and family distress have been reported as additional consequences of the cancer diagnosis (Burish & Lyles, 1983; Meyerowitz, 1980; Sewall & Edwards, 1980). Patients who have undergone disfiguring surgery (e.g., radical vulvectomy or mastectomy) may experience a decreased ability to communicate with their spouses and many report a general negative change in their overall marital relationship. Patients who receive surgery for cancer of the head and neck can be especially vulnerable to a deterioration in family communication. Colostomy patients frequently complain of family difficulties ranging from resentment surrounding the patients' extensive use of the bathroom to a loss of respect for their spouse and marked sexual impairment (Dyk & Sutherland, 1956). Burish and Lyles (1983) suggest that mastectomy patients who are dissatisfied with their marriages may be reluctant to terminate the marriage for fear of being unacceptable to other men. The Jamison et al. (1978) study provides one example of the extent to which sexual functioning can be impaired due to cancer surgery. Twenty-three percent of the mastectomy patients reported deleterious effects on their ability to achieve orgasm, 24% reported a reduction in sexual satisfaction, and 21% reported decreases in the frequency of intercourse. These studies emphasize the need to consider how the cancer patients' interpersonal relationships are affected by the disease and its treatment.

A preliminary study undertaken to evaluate a new instrument for cancer patients, the Cancer Inventory of Problem Situations, (Heinrich, Schag, & Ganz, 1983) found many patients were experiencing significant disruption in a variety of domains. Eighty-four cancer patients representing a variety of disease sites, disease stages, and treatment regimens completed the 131 item self-report instrument. Ninety-four percent reported problems in changes in physical appearance; 60% reported cancer had a severe negative impact on their day-to-day physical activities; and more than 50% of the patients rated interactions with family, friends and spouse to be a problem. Patients also reported being somewhat to severely anxious when having their blood drawn (36.7%), and somewhat to severely anxious when waiting to see a physician (40%) or find out the results of laboratory tests (50%). In addition, patients frequently endorsed problems in cognitive, financial and vocational domains. This study documents the negative impact that cancer can exert on virtually every aspect of a patient's life.

Research documenting the persistence of psychosocial distress in cancer patients is scarce. In the Maguire et al. (1978) study, 39% of the mastectomy patients reported a significant level of anxiety, depression and sexual problems 1 year post-surgery. In a 2 year follow-up study of 160 mastectomy patients, Morris, Greer, and White (1977) found 17% of the patients scored in the depressed range on the Hamilton Rating Scale at 3 months post-mastectomy, 23% at 1 year and 22% at 2 year follow-up. At 2 year follow-up, 11% of the cancer patients exhibited a worsening of their marriages; 32% experienced sexual adjustment problems, and 29% continued to evidence work adjustment difficulties. Similarly, Meyerowitz, Heinrich, & Schag (1983) reported that mastectomy patients' levels of emotional and physical distress remained high well into the second year following surgery. Schonfield (1972) administered the MMPI to 42 cancer patients undergoing radiotherapy who had previously been engaged in full-time employment. During a 9 month

follow-up interview, 21% had not returned to work even though none of these patients had medical evidence of disease. MMPI scores indicated a higher level of anxiety and loss of morale for those patients who had not returned to work compared to those patients who had. Even in the "recovered" cancer patient, problems have been reported to persist (O'Neill, 1975). The fear of recurrence is described as universally present, and as particularly acute with the approach of each followup appointment. The slightest deviation of ordinary body function provokes anxiety and is interpreted as a recurrence of the illness. Returning to work and the social environment as a "normal" person without the stigma of the cancer curse is often difficult.

It appears that a substantial proportion of cancer patients experience significant difficulty adjusting to a chronic, life threatening illness, and that in many patients the problems are enduring. Anecdotal reports suggest that depression, anger, anxiety, insomnia, feelings of worthlessness, attitudes of hopelessness and reduced self-esteem frequently accompany cancer diagnosis, treatment and rehabilitation (Bahnson, 1975; Clark, 1976; Lewis & Bloom, 1978). In a comprehensive review of the psychosocial correlates of breast cancer, Meyerowitz (1980) concluded that the presence of depression, anxiety, and anger commonly reported in the anecdotal literature is substantiated by data collected through structured psychiatric interviews and psychological testing. Weisman (1979) argues that almost every patient faces specific problems within the domains of health, self-appraisal, work and finances, family, religion, friends and existential concerns. Similarly, Cohen and Lazarus (1979) describe several threats facing patients. These are categorized as: (a) threats to life, (b) threats to bodily integrity and comfort, (c) threats to self-concept and future plans, (d) threats to emotional equilibrium, and (e) threats to the fulfillment of social roles and activities.

In summary, the diagnosis and treatment of cancer exerts a pervasive negative effect on the lives of many patients. It is to the amelioration of these deleterious effects that the review now turns.

COPING AND CONTROL

One important determinant of the degree to which cancer disrupts a patient's life is the "coping" methods a patient employs. Unfortunately, investigators often neglect to define coping. Coping may be defined as "efforts, both action-oriented and intrapsychic, to manage (that is, master, tolerate, reduce, minimize) environmental and internal demands" (Cohen & Lazarus, 1979, p. 219). Many cancer patients who are depressed, experiencing marital problems, reporting anticipatory vomiting or exhibiting other problems previously described may have coping deficits; their efforts to manage the demands and stresses associated with the disease are ineffective.

One way to manage or reduce the distress associated with aversive events is to exert control over them. Moreover, to be effective the control need not be real; the perception of control may be sufficient to aid successful adjustment (Thompson, 1981). Thompson distinguishes among four types of control: behavioral control is the belief that one can affect the aversiveness of an event through direct action; cognitive control is the ability to affect the aversiveness of an event by thinking about it differently or from differing perspectives; information control is receiving information or learning about the aversive event which affects the aversiveness by

engendering feelings of control; and retrospective control involves making attributions about the cause of a past aversive event.

The effectiveness of differing intervention approaches for enhancing coping may depend on which type(s) of control the treatment addresses as well as its ability to ultimately influence beliefs about controllability or one's operative capabilities, that is self-efficacy percepts. A recent study of 78 women with breast cancer (Taylor, Lichtman, & Wood, *in press*) demonstrated that cognitive and behavioral control were associated with adjustment while information and retrospective control were not. Patients' coping deficits and belief systems appear to be important points to consider in designing psychological interventions.

PSYCHOSOCIAL INTERVENTION WITH CANCER PATIENTS

Intervention approaches differ in the strategies used but share the common goal of minimizing patients' distress and improving quality of life by enhancing patients' coping. Intervention approaches differ in their assumptions regarding how to assist patients in achieving these aims. Several different treatment approaches have been developed; however, the therapeutic potency of these approaches has hardly been explored. The major treatment approaches in working with the psychosocial concerns of cancer patients are reviewed below. The review focuses on the handful of experimental studies conducted to date. Much of the cancer literature consists of anecdotal reports, case studies and descriptions of pilot programs. These will not be reviewed here.

Support Group Therapy

The majority of the published reports on psychological interventions with cancer patients have focussed on the effects of supportive group therapy. Typically these are descriptive reports of patient issues that arise in support groups, the group process and goals, and testimonials to the groups' efficacy. Systematic evaluation of the group's effectiveness is often absent. In addition, the specific coping deficits targeted by support group therapy are rarely spelled out. Whatever these coping deficiencies are that give rise to depression, anxiety and the myriad of distresses discussed, some researchers in the field (e.g., Yalom & Greaves, 1977; Spiegel, 1979) maintain that the support offered and the opportunity to express needs, concerns and fears are the most important therapeutic ingredients in the group therapy experience. Support and catharsis are the therapeutic tools used to diminish mood disturbances, improve relationship distress, and enhance general adjustment. Although the specific content of these groups may vary considerably, one common therapeutic strategy is to enlist patients to become active in the group process. Group members are encouraged to express problems, concerns and feelings and to share personal methods of coping. In this way it is expected that members will serve as peer models for one another. Several therapeutic mechanisms have been put forth to account for the effects of supportive group therapy. These include catharsis, a sense of community with others experiencing the same situation, and feelings of altruism and worth that accompany giving and receiving support. Unfortunately, most studies of group therapy for cancer patients have failed to empirically assess the effectiveness of such programs; hardly any have isolated the active therapeutic components.

Some empirical support for support group therapy has been provided by Spiegel, Bloom and Yalom (1981). They randomized 58 metastatic breast cancer patients to either treatment or control. Those patients assigned to the treatment condition were then randomized to one of two cancer support groups that met for weekly 90-minute sessions over the course of 1 year. The structure of the groups was informal and designed primarily to be supportive and provide a forum for sharing concerns, fears and feelings. Both the treatment and control groups completed a questionnaire battery administered pre-program and at 4, 8 and 12 months. Sixteen treatment patients and 14 control patients completed all four of the test administrations. The assessment battery consisted of the Health Locus of Control scale, the Profile of Mood States, and author constructed self-esteem, coping and phobia measures. No significant differences between treatment and control patients were found at 4 or 8 month assessment. However, at the 12 month assessment patients assigned to the active treatment were less tense, less depressed, less fatigued and had fewer phobias than untreated patients. The authors concluded that when given for a sufficient period (i.e., 1 year) the group experience serves to improve patients' capacity to master their predicament. Interpretation of the treatment effects are problematic since the authors only reported between-group differences at each assessment point. It is not clear whether the superiority of the support group was due to subjects' improvement on outcome measures, a worsening of untreated subjects, or a combination of the two.

A second report by Spiegel and Bloom (1983) further clarified the procedures employed in the above described group intervention study. Although not mentioned in the original report, it becomes evident in the second report that in one of the support groups self-hypnosis exercises were systematically taught each week as a method of pain control. This design enabled the authors to evaluate the benefits of adding a hypnosis component to support group therapy. Although baseline reports of pain sensation were the same across conditions, at 12 month posttest subjects receiving the hypnosis plus support treatment reported significantly lower pain levels than those receiving supportive group therapy or no treatment. This study suggests that teaching patients a technique for coping with pain improves self-reported pain experience beyond that obtained by support group therapy. This report further calls into question the interpretability of the findings initially reported (Spiegel, Bloom, & Yalom 1981). It appears that the conclusion of improved mood for support group patients was based upon analysis of self-reported mood by the combined treatment (including the hypnosis group) vs. the control. Hence, it is plausible that the improved mood evidenced by those receiving supportive group therapy was due in part to the teaching of a coping skill, namely self-hypnosis. The differential contribution of hypnosis and support on improved mood cannot be determined on the basis of the data and findings reported.

Ferlic, Goldman, and Kennedy (1979) have also examined the potential effectiveness of group therapy for cancer patients. Sixty newly diagnosed patients with advanced cancer were randomly assigned to either a group counseling program ($N = 30$) or a no-treatment control group ($N = 30$). Patients in the group counseling condition attended six 90-minute sessions over the course of 2 weeks. These sessions focused on discussing emotional reactions to cancer as well as providing information on a variety of relevant topics (e.g., treatment side effects and diet). All patients completed a patient perception questionnaire, self-concept test, and differential personality questionnaire before sessions began, at program termina-

tion (2 weeks) and 6-month follow-up. The patients who received group counseling demonstrated significant improvement in hospital adjustment, knowledge of their disease and self-concept as compared to the control group. However, these differences were only found at the 2 week posttest. In a 6 month mail follow-up, all patients' scores had declined to their pretest values.

Vachon, Lyall, Rogers, Cochrane, and Freeman (1981) employed a quasi-experimental design to assess the effectiveness of a supportive lodge milieu for reducing psychological distress during radiotherapy. Sixty-four breast cancer patients treated with supportive milieu therapy were compared to 104 breast cancer patients living at home. All patients were undergoing radiation treatment and completed the Goldberg General Health Questionnaire and an author constructed treatment support group index at pre- and post-radiotherapy. The authors reported a reduction in level of distress for Lodge residents as compared to controls; however, most patients' scores remained unchanged. Further analyses revealed that most of the change occurred among those Lodge residents who initially displayed high levels of distress.

It is difficult to determine the actual content of the support group therapy sessions in the studies described above. Because of the informal and unstructured nature of support groups, it is likely that the content and process varies considerably across groups. The unstructured nature of this approach raises an interesting question regarding patient modeling. It is assumed that much of the benefit derived from support groups is a function of group members modeling a variety of coping behaviors and sharing "recipes" for adjustment. However, peer modeling is not directly planned into the group process; therefore, whether coping modeling occurs and how clearly it is conveyed cannot be insured. Moreover, the potential for negative modeling is ever present. For instance, group members may suggest unproven methods of treatment such as the macrobiotic diets or a trip to some foreign country for cancer cure. Obviously, these may prove to be dangerous.

Patient Education Approach

The patient education approach presupposes that the psychosocial distress accompanying an illness is largely a function of patients' lack of knowledge concerning the disease, its course and treatment, and the medical system (Krumm, Vannatta, & Sanders, 1979). That is, patients' coping problems are the result of an information deficit. Cancer patient education is directed toward helping patients learn about: (a) the course, progression and treatment of the disease; (b) nutrition and self-care; and (c) the medical facility and personnel, and financial resources (Blumberg, Kerns, & Lewis, 1983). The emphasis is on information control or providing information concerning the medical aspects of the patient's disease as a way of coping with the psychosocial consequences. It is assumed patients' fear, anxiety, and distress will automatically decrease with increased medical knowledge and access to information (Messerli, Garamendi, & Romano, 1980); however, some researchers have found that information control does not have a reliably beneficial effect on coping (Thompson, 1981). Therapeutic intervention may take the form of written materials, films, audiotapes or lecture groups. Topics covered typically include: (a) the hospital system, (b) medical terminology, (c) description of the disease, (d) treatment of the disease and side effects, (e) theories of etiology, and (f) the doctor-patient

relationship. Like the support group approach, only a handful of studies have examined the therapeutic outcome of the patient education approach.

The effects of a combined patient education and supportive counseling intervention for cancer patients was reported by Gordon et al. (1980). These researchers employed a case-manager treatment model in which each individual cancer patient received psychosocial intervention from a single health care provider (nurse, psychologist, or social worker). Cancer patients (breast, lung, and melanoma) were assigned to either a combination psychosocial rehabilitation program ($N=157$) or to a no-treatment control condition ($N=151$). Patients in the treatment condition were seen individually by a nurse, psychologist, or social worker and provided with medical information regarding their disease as well as supportive counseling which focused on the patient's reactions to and feelings toward the disease. The degree of emphasis on one or both of these components as well as the frequency and duration of the sessions was determined on the basis of individual patient needs. That is, the nature of the intervention given to each patient varied depending on the needs disclosed during a problem-oriented psychosocial evaluation. All patients were assessed on a variety of self-report instruments, a behavioral survey, and interview. While the study design precluded a determination of the effects of education independent of support counseling, the study provided some evidence for the effectiveness of a combined supportive and educational approach for reducing psychological distress. However, the positive findings were dependent, in part, upon the cancer site and the time of the assessment. For example, upon hospital discharge, the breast cancer patients receiving the educational program showed significant improvement in negative affect scores compared to the control group, whereas the lung cancer patients exhibited a worsening of negative affective scores. Most effects that were found at hospital discharge were not maintained at 3 and 6 month follow-ups.

Jacobs, Ross, Walker, and Stockdale (1983) reported on two concurrent studies aimed at assessing the effects of patient education or support group therapy with 81 Hodgkin's patients. In each of the respective studies the active treatment (either patient education or support group therapy) was compared to a no-treatment control. Patients assigned to the education treatment were mailed a 27-page booklet about Hodgkin's disease, while patients in the support group condition received eight weekly 90-minute sessions. Support groups were attended by an oncologist, psychologist, and social worker and focussed on issues of concern to members (e.g., treatment side effects, impact of cancer on work, family and interpersonal relationships). Patients' knowledge regarding their disease was tested pre- and post-intervention. Patients also completed the Cancer Patient Behavioral scale (CPBS). Patients receiving the education booklet improved significantly on the CPBS subscale measures of anxiety, treatment problems, depression, life disruption and disease knowledge as compared to the controls. Patients in both the support group treatment and support group control showed some improvements over the study period but were not significantly different at the 8-week program termination on any of the measures.

Jacobs et al. explained the positive results from the education counseling as being a function of the patients' increased knowledge concerning their illness. However, the effects of increased knowledge on psychological adjustment may be mediated in part by changes in self-perceptions regarding one's prognosis brought

about by the newly acquired information. Such a mediating variable may be strongly influenced by the specific type of cancer and the prognosis associated with it. In the case of Hodgkin's disease, recent treatment advances have led to a high survival rate. Thus, providing Hodgkin's patients with optimistic information concerning prognosis may certainly alter the "death sentence" perception that many patients harbor resulting in a positive shift in psychological adjustment. However, for patients of other cancer sites with less promising prognoses (for example, lung, ovarian, and brain), the disease information may serve to reduce expectancies, resulting in further affective and behavioral deterioration. Further research along these lines is needed to test the generalizability of patient education counseling across different types of cancers.

The Coping Skills Approach

The coping skills approach involves structured training in specific behavioral, cognitive and affective competencies for managing the disruptive effects of cancer. The coping skills approach assumes that the distress experienced is partially due to a limited or ineffective skills repertoire. Within a social learning framework, treatment is viewed as an educational enterprise with the emphasis on assisting patients to develop a repertoire of coping skills that will enable them to manage stressful situations effectively (Mahoney & Arnkoff, 1978). Skills which are not commonly among individuals' coping alternatives (e.g., relaxation techniques, problem-solving, self-instructional training) are taught. Learning these skills may provide patients with the cognitive and behavioral control researchers have found to be associated with positive adjustment. For example, relaxation training may provide patients with some direct action for reducing the aversiveness of events such as pain, insomnia, and nausea. Cognitive control may be achieved by self-instruction techniques which help individuals learn to talk to themselves in a constructive manner and avoid negativistic thinking. Learning cognitive and behavioral coping strategies may enhance adjustment by expanding coping repertoires, thereby increasing one's perception of control. From among the coping skills armamentarium, relaxation training, self-instructional procedures and problem-solving have been most commonly used with cancer patients.

Several research teams (Lyles, Burish, Krozley, & Oldham, 1982; Morrow & Morrell, 1982; Redd, Andersen, & Monagawa, 1982) have focused on the treatment of a circumscribed yet debilitating aspect of cancer—the nausea and vomiting that many patients experience both before and during chemotherapy injections. Approximately 25% of cancer patients report anxiety, nausea and vomiting prior to chemotherapy treatments (Morrow & Morrell, 1982; Redd & Andrykowski, 1982). In some cases the adverse side effects of chemotherapy interferes with the completion of treatment. One of the first experimental studies carried out (Burish & Lyles, 1981) provided strong support for the effectiveness of progressive muscle relaxation and guided imagery for reducing patients nausea and vomiting. Patients in this study were randomized to either relaxation training or a no-treatment control. In a subsequent study, Lyles et al. (1982) randomly assigned 50 cancer patients to either: (a) progressive muscle-relaxation plus guided imagery; (b) therapist control, in which a therapist provided encouragement and support with no relaxation training; or (c) no-treatment control. Anxiety, depression, nausea and vomiting were assessed on self-report, physiological, nurse rating and home record

indices. The results indicated that patients who received relaxation training were significantly less anxious and depressed, demonstrated less physiological arousal and reported less severe nausea and vomiting during chemotherapy. Similarly, Redd, Andersen, and Monagawa (1982) reported on the effective use of a therapist-directed, muscle-relaxation hypnosis plus guided imagery in controlling pre- and post-chemotherapy nausea and vomiting. Patients received a visual-fixation induction and were given suggestions of relaxation while instructed to focus on pleasant images. These two research teams posit several factors to explain the success of the relaxation and hypnotic procedures: (a) deep muscle relaxation inhibits physiological arousal that can exacerbate gastrointestinal upset; (b) focusing the patient's attention on relaxation and guided imagery may serve as a cognitive distraction preventing the patient from attending to nausea-eliciting stimuli; and (c) relaxation training may increase patients' perception of control, thus reducing feelings of helplessness and depression (cf., Redd & Andryowski, 1982).

Morrow and Morrell (1982) question the hypothesis that perceptions of control mediate reductions in patients' adverse response to chemotherapy. They conducted a randomized trial in which they compared the effectiveness of a systematic desensitization procedure, Rogerian supportive counseling and a no-treatment control for reducing the frequency, severity and duration of anticipatory nausea and vomiting in 60 cancer patients. The systematic desensitization procedure involved teaching patients to relax while imagining situations in which they experienced anticipatory side effects. Nausea and emesis were assessed by patient self-report as were anxiety (State-Trait Anxiety Inventory) and feelings of control (Health Locus of Control scale). A significant decrease in the frequency, severity and duration of anticipatory nausea and vomiting was reported by patients receiving systematic desensitization as compared to patients receiving supportive counseling or no treatment. No significant differences were found between these latter two groups. Interestingly, there were no pre/post changes evidenced on measures of anxiety or perceived control. Hence, the authors concluded that the results fail to support the view that systematic desensitization works by increasing patients' sense of control over their chemotherapy treatments. One alternative explanation for the findings is that a global scale such as the Health Locus of Control scale may not be sensitive to changes of perceived control in specific situations. Therefore, changes may have occurred in patients' perceptions of control over their chemotherapy treatments, but were not detected by the nonspecific Health Locus of Control measure.

Overall, the studies evaluating the effectiveness of various behavioral techniques for reducing adverse chemotherapy side-effects have demonstrated favorable results. These studies are especially promising because they employed different therapists, in different settings, with cancer patients of different diagnoses who were receiving different drug regimens. Moreover, a few of the studies controlled for the effects of therapist attention by including an attention placebo condition.

Self-instruction and problem solving procedures have also been studied with cancer patients (Weisman & Sobel, 1979; Weisman, Worden, & Sobel, 1980). The aim of these techniques is to fortify coping skills by learning a problem-solving process for generating alternative coping strategies and evaluating their effectiveness. This process restores patients' confidence in their ability to manage the disruptive effects of their illness. Weisman, Worden, and Sobel (1980) randomized newly diagnosed cancer patients evaluated as being at "high risk" for emotional distress to either: (a) a generalized problem-solving and self-instructional condition

that included relaxation training ($N=30$), or (b) a personalized problem-solving and self-instructional condition ($N=29$). In both treatment conditions problem-solving was emphasized. The major distinction involved a differential focus on either solving a patient's personal problems or teaching a specific step-by-step problem-solving process that could be applied to problems in general. All patients were seen in individual therapy sessions once a week for 4 weeks. A control group of non-intervened patients ($N=58$) was obtained by retrieving the data collected during an earlier 1976 study conducted by the authors. The control patients had participated in the 1976 study designed to evaluate the validity of a psychological screening instrument. Data from patients who had been classified as "high risk" for emotional distress were used. The authors state that they used this earlier data as a control condition because they felt it unethical to withhold intervention from "high risk" patients in their current study. Therefore, patients in the two intervention conditions were compared to an earlier group of untreated patients. Patients in both treatment conditions, as compared to control subjects, demonstrated significant improvement on the Profile of Mood States and on several author constructed measures of emotional distress. Intervention patients had higher problem resolution scores than controls although both were similar in the number of reported problems. Treatment gains were maintained at 2, 4 and 6 month follow-up assessments. No differences were found between the two active treatment groups, and both were superior to the untreated controls at 2, 4 and 6 month follow-ups.

At least two problems arise with the Weisman et al. study. First, the control patients were not randomly assigned from the same population as the treated patients, but in fact had been studied more than one year earlier during a different study designed to evaluate the utility of a screening interview. Although the control and intervened subjects did not differ significantly on the screening interview scores, there were a number of between-group differences found at pretest (Worden, 1981). Control patients reported more alcohol, family and religious concerns, more past psychiatric treatment, and more advanced disease at pretest than the intervention patients. Second, the two interventions were so similar that the meaningfulness of the treatment comparisons may be questionable. That is, the essence of the therapy in both treatment conditions was problem-solving instruction. Thus, the finding of equal improvement between treatment conditions does not allow determination of whether improvement was due to the specific problem solving techniques taught or to nonspecific therapist factors. These problems cloud the interpretability of the findings reported.

GENERAL METHODOLOGICAL PROBLEMS OF THE STUDIES REVIEWED

Many of the outcome studies reviewed had methodological problems that hinder the interpretation of results. The discussion of these problems is organized according to issues concerning: (a) measurement, (b) subject selection, and (c) treatment-related issues.

Measurement Issues

With few exceptions (e.g., Lyles et al., 1982) evaluation of treatment efficacy has involved the use of global measures of psychopathology such as depression and anxiety. The appropriateness of these scales for measuring treatment effects with

cancer patients can be seriously questioned. First, it has not been shown that global measures of psychopathology will be sensitive in assessing relevant areas of psychological adjustment in the cancer patient population. Therefore, sole reliance on these measures may result in a researchers' failure to detect true differences between treatment approaches or even between treatment versus no-treatment groups. Moreover, patients afflicted with a serious physical disease often resent completing long psychological inventories that probe for underlying psychopathology (Bloom & Ross, 1982). Employment of these instruments should come only after their validity with cancer patients has been established. Watson and Kendall (1983) state "the validity of even well established and widely used measures should be re-evaluated in light of the special circumstances of specific patient populations" (p.59).

Data from semi-structured interviews, author constructed rating devices, and global self-report rating instruments such as the Health Locus of Control scale have also been used. These instruments, unlike the commonly used psychopathology measures, often lack important information concerning reliability and validity. Moreover, they frequently fail to assess specific adjustment difficulties. As Meyerowitz, Heinrich, and Schag (1983) suggest, cancer should not be viewed as a unitary stressor but rather as a complex multifaceted system of stressors. Therefore, evaluation strategies need to be tailored specifically to the myriad of daily stressors that confront individuals afflicted with cancer.

The long-term effectiveness of psychological interventions for cancer patients has been frequently neglected. With few exceptions (e.g., Ferlic et al., 1979; Weisman et al., 1980), follow-up assessments of 3 months or more post intervention were lacking. Moreover, compliance with the mail follow-up assessment conducted in the Ferlic et al. study was extremely low, thus limiting the conclusions regarding long-term efficacy. In some cases, investigators have conducted repeated assessments while psychological intervention was still being given (Gordon et al., 1980; Spiegel et al., 1981). However, these do not supplant the need for data concerning the long-term maintenance of treatment effects upon termination of the intervention.

Subject Selection Issues

Because of the vastly different types of cancer and their differential treatment course, physical concomitants and prognoses, patient selection factors become extremely important in interpreting the results from psychological studies. The intervention studies varied greatly in terms of subject inclusion criteria. For instance, some studies (e.g., Jacobs et al., 1983; Spiegel et al., 1981; Vachon et al., 1981) selected patients with a uniform type of cancer such as breast or Hodgkin's disease, while others included patients from a variety of different cancers. In addition, studies often limited their sample to patients with metastatic disease or newly diagnosed patients. Of course, depending on the study's purpose, these variables may or may not be important criteria to consider. However, the generalizability of the study's conclusions to other cancer patient subgroups is seriously limited. It may be prudent to recruit a more heterogeneous sample representative of the diverse cancer patient population. Separate analyses on subgroups could be performed to determine the influence of medical variables and facilitate interpretation.

Another factor that may cloud the interpretability of findings across studies is

failure to control for patients' initial level of coping difficulties upon entry into the trial. We believe it is erroneous to conclude that all cancer patients by virtue of their disease are in need of psychological assistance. Patients assigned to a psychological intervention who display effective coping at the outset may evidence negligible treatment gains at the posttreatment assessment. Such a finding should not be used to support the conclusion that the psychological treatment was ineffective. A study's failure to adequately screen patients for psychological adjustment or level of coping may drastically reduce its ability to effectively test one or more psychological interventions. Unfortunately, the majority of studies, with the exception of Lyles et al. (1982) and Weisman et al. (1980) failed to include any type of psychological adjustment selection criteria. It is recommended that future intervention studies carefully attend to this issue and incorporate specific psychological screening criteria for their patient sample.

Finally, some of the studies reviewed failed to randomly assign patients to the study conditions. The random assignment of subjects should be employed if at all possible. This will also facilitate interpretation of results obtained from the heterogeneous sample suggested.

Treatment-Related Issues

A few additional comments need to be considered in the overall evaluation of the treatment approaches described. With regard to the support group approach, the length of time required before members derive benefit appears to be a major shortcoming. In the Spiegel et al. study (1981) 4, 8, and 12 month assessments were performed during the course of the 1 year groups. Between-group differences were not evidenced until the final 12 month evaluation. Yalom and Greaves (1977) report on support groups that continue for 4 years. Thus, the cost efficiency of support groups needs to be considered as well as the demand for a method of psychosocial assistance in which patient improvement is accelerated. In addition, many of the support groups described included an educational or coping skills component. The differential contribution of these components in enhancing patient adjustment could not be determined in the studies reviewed.

The reference groups used to evaluate the efficacy of the various psychosocial interventions to date also deserve mention. Few of the studies reviewed employed an alternative treatment condition against which the "favorite" treatment could be compared. Even in the Jacobs et al. study (1983) the education and support conditions were not directly compared but were instead evaluated separately in relation to two independent control conditions. In most instances a treatment was pitted against a no treatment control, thus demonstrating that "something is better than nothing." It is recommended that future outcome studies in this area employ a more stringent test of experimental intervention strategies by using reference groups that are equated for level of professional contact.

The application of coping skills training to cancer patients needs to be expanded. To date, the coping skills approach has been narrowly applied in treating cancer patients. For example, the potential benefits of relaxation training for reducing the physical pain, anxiety and emotional distress patients often experience has not been systematically examined beyond the application to pre-chemotherapy nausea and vomiting. Furthermore, the range of coping strategies evaluated has been limited to problem-solving and relaxation training. A more comprehensive theo-

retical framework which suggests a variety of therapeutic strategies and addresses a wide range of psychosocial problems is needed.

SELF-EFFICACY THEORY: A FRAMEWORK FOR DEVELOPING MORE POWERFUL COPING STRATEGIES

Self-efficacy theory (Bandura, 1977, 1982) provides a potentially useful framework for understanding how people cope with a life threatening illness such as cancer. The theory posits that peoples' beliefs concerning their ability to perform effectively play a prominent role in determining behavior, thought patterns, and emotional arousal. Support for the self-efficacy mechanism is provided by an impressive body of empirical evidence from a number of different lines of research showing that perceived self-efficacy is influential in accounting for changes in coping behavior produced by different modes of treatment (Bandura & Adams, 1977; Bandura, Adams, & Beyer, 1977; Bandura, Adams, Hardy, & Howells, 1980); self-regulatory behavior (Conditte & Lichtenstein, 1981; DiClemente, 1981; Killen, Maccoby, & Taylor, 1984); post-operative rehabilitation (Ewart, Taylor, Debusk, & Reese, 1983); achievement motivation (Schunk, 1981); vocational interests (Hackett & Betz, 1981); athletic performance (Weinberg, Yukelson, & Jackson, 1980); and most important for the present discussion, level of physiological stress reactions (Miller, 1979).

From a social learning perspective, the stress reaction resulting from a potentially deadly malignancy is determined, in part, by one's perceived efficacy in coping with the array of consequent aversive events (e.g., hair loss, chronic pain, nausea). Much of the psychological distress associated with having cancer can be accounted for by two primary factors: discomfort produced by the aversive features of the illness, and the arousal generated by ruminatory thought. When individuals entertain strong self-doubts concerning their coping capabilities, worrisome ideation is more likely to exceed the objective hazards. On the other hand, personal judgments of coping efficacy may serve to reduce the level of arousal associated with a stressful event. For example, in laboratory investigations of perceived control, those that believe they have some control over aversive events exhibit less marked performance impairment and visceral arousal than those who think they have no personal control (Miller, 1979, 1980).

A sense of low self-efficacy may also contribute to the depressive reaction commonly reported among cancer patients. Whereas perceived inefficacy in controlling aversive events usually leads to debilitating anxiety, strong self-doubts concerning one's competence in obtaining highly valued outcomes may lead to feelings of despondency and despair (Bandura, 1982).

The application of self-efficacy theory to the problem of coping with cancer may serve two important functions. First, pre-intervention assessment of the strength and level of patients' perceived coping efficacy on a variety of relevant dimensions may provide an extremely valuable data base from which to tailor intervention strategies to patients' needs. Secondly, repeated efficacy probes may serve as a vehicle for assessing the impact of various intervention strategies on patients' functioning in specific areas of coping such as communication with family members and pain management. This assessment augments the global measures of anxiety and depression that are typically employed as the sole indicants of treatment outcome.

APPLICATION OF SELF-EFFICACY THEORY WITH CANCER PATIENTS: THE STANFORD PROJECT

A comprehensive coping skills training approach derived from self-efficacy theory was examined in a recent study by Telch (1984). Seventy patients among a diverse array of cancer diagnoses (e.g., breast, Hodgkin's, lymphoma, lung, colon, and tongue cancer) underwent a structured psychological screening interview. Of those interviewed, 41 patients exhibiting a marked degree of psychological disruption and meeting minimal medical inclusion criteria (i.e., Karnofsky Performance rating of at least 70, and received diagnosis at least 30 days prior to study participation) were randomized to one of three experimental conditions: (a) supportive group therapy, (b) group coping skills training, and (c) no treatment control. Patients assigned to supportive group therapy met for six weekly, 90-minute sessions. The sessions were non-directive in nature and emphasized the mutual sharing of issues related to patients' illness.

The group coping skills treatment consisted of six weekly, 90-minute training modules in specific patient-relevant areas. Normative data were collected pre-program development to determine the module areas of most relevance to this population. Eighty cancer patients comprised this normative sample and completed an author constructed self-efficacy scale (Telch & Telch, 1982). The efficacy scale items assess patients' beliefs concerning their ability to cope in a particular situation or perform a specific behavior relevant to cancer patients. The scale consists of six subscales which have demonstrated high internal consistency (Cronbach alphas ranging from .77 to .92). The subscales are: (1) Coping with Medical Procedures, such as getting blood drawn or undergoing radiotherapy; (2) Communication, with physicians, friends, family; (3) Activity, including vocational, social, and physical; (4) Personal Management, such as rearranging one's daily routine to accomodate treatment schedules; (5) Affective Management, such as reducing anger associated with the illness; and (6) Self-satisfaction, such as with one's physical appearance.

The pre-program self-efficacy probes were instrumental in the development of the coping skills training program. However, the treatment intervention was not individually tailored to study patients specific coping deficits. That is, all patients in the group coping skills condition received training in all six module areas regardless of their efficacy level in a particular area. Study patients' efficacy scores were below the mean scores reported by the normative sample; however, efficacy levels varied between individual patients as well as within individual patients, depending on the subscale.

The coping skills training areas included: (a) relaxation and stress management, (b) communication training, (c) cognitive restructuring and problem-solving, (d) feelings management, and (e) pleasant activity planning. Behavioral strategies included: (a) homework assignments, (b) self-monitoring, (c) goal setting, (d) self-reinforcement, (e) participant modeling, and (f) behavioral rehearsal.

Assessments were conducted at pretreatment and again at the end of 6 weeks of intervention. Assessment consisted of: (a) structured clinical interview ratings of psychological distress, (b) Profile of Mood States subscales and total mood disturbance score, (c) Self-efficacy subscale and total scores (Telch & Telch, 1982), and (d) total scores on the Cancer Inventory of Problem Situations. In addition, patients in the coping skills condition recorded the frequency with which they practiced the skills taught each week. The average weekly frequency of skills prac-

tice reported was 12.3 with a range of 3 to 25. Results of the study demonstrated a marked and consistent superiority of the coping skills intervention over supportive group therapy and no treatment conditions on the outcome indices described. Moreover, coping skills patients significantly improved compared to their own pretest levels. Patients receiving supportive group therapy exhibited little change from pretest levels, whereas no treatment controls evidenced a significant deterioration in psychological functioning.

Self-efficacy theory may provide a useful model for interpreting the results of the Telch study. Patients receiving the coping skills instruction improved dramatically on each of the efficacy subscales compared to their own pretest efficacy levels and compared to both the support group and control subjects. Support group patients showed little improvement on any of the efficacy subscales. One explanation for these findings is provided by considering the four ways self-efficacy percepts may be influenced through enactive, vicarious, physiological, and persuasive information sources. Information obtained from these sources is used to make judgments regarding one's personal coping efficacy (Bandura, 1977, 1982). The enactive and vicarious sources provide the most powerful evidence regarding one's own coping abilities, and the persuasive mode is the least powerful for inducing change. Only patients in the coping skills treatment received enactive mastery experiences provided via homework assignments, behavioral rehearsal, and role-plays. These patients were also exposed to more vicarious information due to the participant modeling and role-plays employed. Learning relaxation techniques provided coping skills subjects with physiologic information regarding their ability to reduce visceral arousal. By contrast, support groups rely primarily upon persuasive information sources to induce change. Patients typically disclosed problems and concerns and group members offered support and understanding by sharing similar feelings and assuring one another these feelings were "normal." Persuasion or reassurance from others that one can cope is a relatively weak and unconvincing source for enhancing one's judgments of coping efficacy compared to first hand enactive mastery experiences (Bandura, 1977). It is therefore not surprising that patients in the supportive counseling condition did not report stronger beliefs regarding their coping capabilities at posttest, and demonstrated negligible gains on the various mood and other psychological change indices.

These results lend encouraging support for providing psychologically distressed cancer patients with multifaceted coping skills training using a group format. However, as is commonly the case, more questions than answers have been provided. Future research designed to examine whether individually tailored treatment interventions increase treatment effectiveness would be a worthwhile endeavor. Typically pretreatment assessment does not directly dictate the intervention received. Ideally the initial assessment should function to link the domain specific coping deficits identified with the appropriate intervention strategies. One way to test the effectiveness of matching treatment strategies with individual patients' needs would be to assign patients to coping skills modules based on pre-intervention efficacy probes. Patients in the individually tailored treatment condition would attend only those modules directly related to their coping deficits identified by the self-efficacy measure. The coping skills modules would be randomly assigned to a second patient group; that is, intervention would be unrelated to the pretreatment efficacy probes. The results of the suggested comparative outcome study could help identify methods for enhancing a treatment's effectiveness. Research could also be aimed at

identifying more efficient and cost effective methods of treatment administration and dissemination. The coping skills interventions are particularly suited for translation into a bibliotherapy, audiotaped, or videotaped medium. Studies designed to evaluate the efficacy of these more portable coping skills programs which reduce the demands for professional time may help to increase patient service delivery. The collection of follow-up data should also be considered by future investigators in order to assess the long term effectiveness of coping skills intervention for cancer patients.

Professionals have only recently begun to systematically investigate how to best assist patients living with cancer. During this relatively brief research history some progress has been made toward understanding cancer patients' adjustment difficulties and effective methods for reducing their problems. Although the evidence is far from conclusive, it does seem to suggest that the coping skills approach may provide a more powerful therapeutic intervention than that of the traditional group support model. Further study is required to help advance our knowledge regarding the application of self-efficacy theory to the problems of cancer patients.

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