



Christopher Perkins. *Taranaki*, 1931. Oil on canvas, 508 × 914 mm. Courtesy of Auckland Art Gallery Toi o Tamaki, purchased 1968.

*Psychoeducational intervention strategies offer significant benefits in the treatment of cancer-related pain.*

# Nonpharmacological Interventions With Chronic Cancer Pain in Adults

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**Background:** Pain is often poorly controlled in cancer patients. Chronic pain affects adult patients at all stages of cancer management. Optimal pain management may require attention to psychosocial variables and the inclusion of nonpharmacological techniques.

**Methods:** Three nonpharmacological strategies that are effective in reducing pain caused by cancer — patient psychoeducation, supportive psychotherapy, and cognitive-behavioral interventions — are reviewed. Recommendations for physicians to facilitate a mental health referral are also discussed.

**Results:** Effective treatment of cancer pain begins with assessing the severity, characteristics, and impact of pain. Emotional distress (especially anxiety, depression, and beliefs about pain) has emerged as predictive of patient pain levels. Appropriate pain management may require a multidisciplinary approach.

**Conclusions:** Patient psychoeducation has empowered patients to actively participate in pain control strategies. Supportive psychotherapy can assist patients in managing the stressors associated with cancer, and cognitive-behavioral therapy helps patients to recognize and modify the factors that contribute to physical and emotional distress.

## Introduction

Physical pain is perhaps one of the most feared consequences for patients with cancer. Available esti-

mates suggest that chronic pain affects 60% of adult patients with newly diagnosed or intermediate-stage cancer and up to 95% of patients with advanced disease.<sup>1,2</sup> Indeed, the magnitude of the problem is so great that some reports indicate that 25% of individuals may actually die in significant pain.<sup>3</sup>

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Ninety percent of cancer patients are believed to be manageable with relatively simple medical interventions.<sup>2</sup> However, in practice, less than 50% experience effective pain relief.<sup>3</sup> To account for this discrepancy in pain management, a number of psychosocial factors

have been implicated in the literature. While some researchers have focused on inadequacies related to health care providers or health care systems (eg, an emphasis on prolonging life or achieving cure rather than alleviating suffering),<sup>2,4</sup> others have identified issues involving the patients themselves.<sup>5,9</sup> That is, patients experience difficulty assessing and communicating about pain, are reluctant to report pain, have limited expectations for relief, and generally lack knowledge about current therapeutic approaches. Even when pain is addressed medically, patients may be noncompliant with treatment due to concerns about drug tolerance, addiction, side effects, or respiratory depression.

Of all of the psychosocial factors, emotional distress (particularly anxiety, depression, and beliefs about pain) has consistently emerged as predictive of patient pain levels. Spiegel and Bloom<sup>10</sup> found that the site of metastases in women with advanced breast cancer was not reliably associated with pain; rather, emotional distress and the belief that pain signaled a worsening of their condition predicted the reporting of pain. Similarly, Daut and Cleeland<sup>11</sup> found that cancer patients who attributed their pain to a cause other than cancer reported the least interference with activities of daily living and pleasure. Further, Ahles et al<sup>12</sup> compared cancer patients with and without pain and demonstrated that patients with pain scored higher on measures of depression, anxiety, hostility, and somatization. Thus, attention to the psychosocial variables of the cancer patient through nonpharmacological intervention seemingly provides an additional and viable avenue for the treatment of cancer-related pain.

This article focuses on three of the most common approaches employed by mental health professionals: patient psychoeducation, supportive psychotherapy, and cognitive-behavioral therapy. The basic principles behind these methods are explained and relevant research studies are discussed. Only those studies that have methodically strong designs are included in order to critically examine the efficacy of these approaches.

## Patient Psychoeducation

Educational efforts have attempted to empower patients to actively participate in pain control strategies. Unfortunately, only a handful of empirical studies have considered the role of education in changing patients' attitudes and beliefs in pain management. In an early study, Rimer and colleagues<sup>5</sup> investigated the effects of a 15-minute patient education program. Printed materials concerning pharmacological issues were individualized and discussed with patients by a counselor. One month later, results indicated that mem-

bers of the intervention group were significantly more likely to take their medications on the correct schedule and at the correct dosage. They were also less likely to cease taking the medicine when they felt better. While both groups were equally likely to experience medication side effects, the experimental group was more likely to believe that side effects could be prevented and that they had some personal control over their pain experience. Moreover, intervention participants were significantly less fearful about the possibilities of tolerance and addiction. There was no difference in patient-reported pain relief, although there was a trend for the experimental participants to report less pain. In fact, 44% of subjects in the intervention group reported no or mild pain compared with 24% of control subjects. The characteristics and results of the reviewed studies are summarized in Table 1.

Over the past decade, pain experts have discovered that a combination of pharmacological and nonpharmacological strategies provides the most effective pain management.<sup>1,2,13,14</sup> Subsequent case reports and studies have thus begun to incorporate multiple components into the educational process. Current comprehensive programs attempt to provide education about the basic principles of pain assessment and control, pharmacological intervention, and nonpharmacological treatments.<sup>6,9</sup> With regard to pain assessment, pain-rating scales can be easily understood by patients. Pain rating scales are measured on a Likert scale ranging from 0 (indicating no pain) to 10 or 100 (indicating the worst possible pain imaginable). These pain scales have been found to be a reliable and clinically useful means for patients to label and communicate about pain.<sup>15</sup> Another useful instrument is the daily pain diary or log that documents the date and time of a pain experience, pain severity, distress due to pain, actions taken, and severity of pain after one hour.<sup>6</sup> Such a tool provides ready information concerning pain patterns and the effectiveness of a pain management program. Pharmacological pain education should include information designed to counteract fears of drug addiction, tolerance, side effects, and respiratory depression. It may also be useful to discuss the medical control of complicating symptoms such as nausea and constipation. Informing cancer patients about the side effects of treatment has not been found to increase the occurrence of these side effects or to have other negative consequences.<sup>16</sup> Finally, education about nonpharmacological interventions should stress the importance of these modalities as an adjunct to effective pain relief. Discussions of various modalities and referrals to appropriate personnel or resources should be provided.

Two recent studies evaluated the effectiveness of this type of multicomponent education. Ferrell and

Table 1. — Summary of Characteristics and Results of Controlled Randomized Studies

Authors (ref)	Study Design	Significant Results
Rimer et al (5)	<ul style="list-style-type: none"> <li>• N = 230, mixed cancers</li> <li>• 2 groups: experimental and control</li> <li>• 1 individual session, 15 minutes</li> </ul>	<p>Increase in knowledge of taking medications on correct schedule and knowledge of taking medications at correct dosage.</p> <p>Decrease in stopping medications when felt better, fear of tolerance, and fear of addiction.</p>
Ferrell et al (6)	<ul style="list-style-type: none"> <li>• N = 40 patients (mixed cancers) and family members</li> <li>• Solomon Four-Group Design: 2 experimental and 2 control</li> <li>• 3 sessions (either individual or with family caregiver)</li> </ul>	<p><u>Patients:</u></p> <p>Increase in knowledge of pain medications, use of pain drugs, and sleep.</p> <p>Decrease in fear of addiction, pain intensity, pain severity, and anxious mood</p> <p><u>Family caretakers:</u></p> <p>Increase in providing medications consistently and at the correct dosage.</p> <p>Decrease in fear of addiction and fear of respiratory depression.</p>
de Wit et al (9)	<ul style="list-style-type: none"> <li>• N = 313, mixed cancers</li> <li>• 4 groups: experimental with and without home nursing, control with and without home nursing</li> <li>• 1 individual session + 2 telephone contacts, 60-90 minutes</li> </ul>	<p>Increase in pain knowledge (taking medications on correct schedule and at correct dosage).</p> <p>Decrease in fear of addiction and pain intensity for those without home nursing.</p>
Spiegel et al (20)	<ul style="list-style-type: none"> <li>• N = 86, metastatic breast cancer</li> <li>• 2 groups: experimental and control</li> <li>• 52 group sessions, 90 minutes</li> </ul>	<p>Decrease in anxiety, depression, fatigue, confusion, phobias, and negative coping responses.</p> <p>Increase in vigor.</p>
Spiegel and Bloom (21)	<ul style="list-style-type: none"> <li>• N = 54, metastatic breast cancer patients with pain</li> <li>• 3 groups: supportive psychotherapy, supportive psychotherapy + hypnosis, control</li> <li>• 52 group sessions, 90 minutes of support, 5-10 minutes of hypnosis</li> </ul>	<p><u>Both support and support + hypnosis groups:</u></p> <p>Decrease in pain sensation and suffering compared with control.</p> <p><u>Support + hypnosis group:</u></p> <p>Decrease in pain sensation compared with both support alone and control groups.</p>
Syrjala et al (27)	<ul style="list-style-type: none"> <li>• N = 67, bone marrow transplant recipients</li> <li>• 4 groups: treatment as usual control, therapist contact control, hypnosis, and cognitive-behavioral skills (imagery excluded)</li> <li>• 12 semiweekly individual sessions (2 pre-hospitalization and 10 during hospitalization)</li> </ul>	<p><u>Hypnosis group:</u></p> <p>Decrease in pain compared with control.</p>
Syrjala et al (28)	<ul style="list-style-type: none"> <li>• N = 94, bone marrow transplant recipients</li> <li>• 4 groups: treatment as usual, therapist support, relaxation + imagery, cognitive-behavioral coping skills package (includes relaxation + imagery)</li> <li>• 12 semiweekly individual sessions (2 pre-hospitalization and 10 during hospitalization)</li> </ul>	<p><u>Both relaxation + imagery and cognitive-behavioral groups:</u></p> <p>Decrease in pain in comparison to control.</p>
Sloman et al (31)	<ul style="list-style-type: none"> <li>• N = 60, mixed cancers</li> <li>• 3 groups: control, live relaxation + imagery, and taped relaxation + imagery</li> <li>• 4 individual sessions over 2 weeks</li> </ul>	<p><u>Both live and taped treatment groups:</u></p> <p>Decrease in pain intensity, overall severity of cancer pain over past week, and as-needed nonopioid analgesic intake compared with control.</p> <p><u>Live treatment group:</u></p> <p>Decrease in pain sensation compared with control.</p>

associates<sup>6</sup> implemented a pain package in three separate sessions and included verbal, written, and audio-taped instruction to maximize learning. Emotional distress, cancer treatment medications, and the physical pain itself have been discussed as impairing patient retention of information.<sup>3,14</sup> As a consequence, researchers have suggested that information conveyed in small chunks and taught through multiple educational modalities may reduce learning interference.<sup>8</sup> Additionally, the authors of this study provided the pain program to family members who were caregivers. Because pain management is now performed largely on an outpatient basis,<sup>9,17</sup> family members play an integral role in patient care. They frequently oversee the administration of medication and any adjuvant therapies. Since family members are also subject to a lack of knowledge and misconceptions concerning cancer pain and its control, they should be included in any educational intervention. Consistent with past findings, results from the Ferrell study indicated that intervention subjects reported an increase in both knowledge and usage of medication as well as a decrease in a fear of addiction. Anxiety levels declined, and sleep was enhanced. More importantly, study subjects evidenced a decrease in pain intensity and the perception of pain severity. They also reported positive attitudes towards nondrug remedies, and they utilized methods such as heat and massage to decrease pain levels. Caregiver outcomes revealed similar and significantly positive changes in knowledge, including a reduced fear of addiction and respiratory depression. In addition, changes were noted in caregiver behaviors such as the provision of adequate doses of medication and the medication of patients on a consistent basis.

More recently, de Wit and colleagues<sup>9</sup> evaluated a comprehensive pain program that followed a similar structure and individualized format as the Ferrell study. In this study, however, changes were measured over multiple time points, and differences between subjects were more closely inspected. First, patients were classified as to whether they received at-home nursing. They were then randomly assigned to either intervention (eg, pain education) or a control condition. Results revealed that the pain education program was effective in improving pain knowledge and attitudes over time. Again, changes were noted with regard to drug misconceptions and the regular use of medication as an effective means to control cancer pain. While intervention participants reported less pain than control subjects, this decrease was observed primarily in those intervention subjects who did not receive at-home nursing. The authors hypothesized that patients with at-home nursing experienced more complex pain problems. This difference between patients with and without home nursing suggests that improvements in pain

knowledge may not be the only variable responsible for a decrease in pain intensity. Indeed, for those with more complex or extensive pain, education alone may not be sufficient. More rigorous intervention, such as supportive or cognitive-behavior psychotherapy in combination with pharmacotherapy and education, may be needed for adequate pain relief. To ensure proper transmission, use, and success of pain assessment and treatment, education should begin when analgesics become warranted in patient care and before activities of daily living significantly decline.<sup>14</sup>

## Supportive Psychotherapy

Supportive psychotherapy with cancer patients is performed within several formats, including individual, family, couples, and group. Selection of a format may be dictated by patient variables such as physical condition, preference, or coping style. Supportive psychotherapy generally refers to the use of a supportive-expressive model in which a therapist provides emotional support, encourages expression of feelings and thoughts, and assists with strengthening and developing coping skills.<sup>13,18-20</sup> The purpose of supportive psychotherapy is to manage the limitations associated with cancer while continuing to live life meaningfully and establishing smaller, more obtainable goals.<sup>18,19</sup>

Supportive therapeutic work tends to be non-analytical, focusing on present circumstances rather than examining the past, as is the case with a more traditionally oriented approach.<sup>18</sup> Emphasis is therefore placed on communication with others instead of introspection.<sup>13,18-20</sup> Nonetheless, discussion of current stressors and reactions does sometimes involve exploring and gaining insight into past issues. Supportive psychotherapy also tends to be unstructured in that no specific techniques are regularly employed. However, many therapists augment their sessions by teaching concrete strategies to control cancer pain. Specific techniques, along with their theoretical framework, are discussed in the next section.

While many studies have examined the use of supportive psychotherapy with cancer patients, measures have primarily assessed affective distress and quality of life issues. Only one controlled study has examined the effects of supportive psychotherapy on pain in cancer patients. Spiegel et al<sup>10,20,21</sup> randomly assigned women with metastatic breast cancer to weekly group psychotherapy or a control condition that received only routine oncologic care. In the psychotherapy group, members explored existential and practical issues related to living with cancer, including fears surrounding the death and dying process, family adjustment, and

communication with physicians. Psychosocial measures were taken on all study participants every 4 months for 1 year. Following the yearlong intervention, those in the experimental group reported being significantly less tense, depressed, fatigued, and confused. They reported more vigor, fewer maladaptive coping responses (eg, overeating, drinking, smoking), and fewer phobias than the control subjects. Differences were noticeable at 4 and 8 months but were not significant until month 12. With regard to pain over the year period, control subjects reported a sizeable increase in the sensation of pain, while those in the treatment sample reported no change in pain levels. In fact, by the end of the year, reports of pain in the treatment group were half that of the control group. In terms of suffering associated with the pain, the control patients experienced an increase and the treatment group a decrease. Interestingly, there were no differences between the treatment and control groups in terms of either the frequency or duration of pain experiences, suggesting that those aspects of pain that can be influenced by psychological variables may have been significantly affected by the group intervention. In fact, changes related to pain were found to be significantly related to changes in mood states. For the treatment participants, improvements in overall mood were associated with a decrease in the sensation of pain. For control group members, however, increases in pain duration were significantly related to increases in overall mood disturbance and specifically to increases in anxiety, depression, or fatigue.

## Cognitive-Behavioral Therapy

Cognitive-behavioral therapy is another theoretical model that has been employed in the treatment of cancer-related pain. As with supportive psychotherapy, it is practiced in a number of formats, with individual or group sessions tending to be more common than family or couples. At its core, the cognitive-behavioral model suggests that a person's distressing physical and mental symptoms are partially a consequence of maladaptive thoughts, feelings, or behaviors.<sup>22,23</sup> This perspective thus focuses on recognizing and modifying the thoughts, feelings, and behaviors that contribute to physical and emotional distress.

Several researchers have adapted the cognitive-behavioral perspective to specifically address cancer-related pain.<sup>23-25</sup> That is, cancer pain is reputed to contain an objective component (the pain stimulus) and a subjective component (the perception of the pain stimulus). The subjective portion of pain is postulated to be influenced by distorted or irrational thoughts or behaviors that, in turn, generate exaggerated feeling states

and an increase in the perception of pain. Intervention attempts to modify behaviors, cognitions, or a combination of the two. By changing thoughts or behaviors in a positive manner, feeling and pain states are presumed to be naturally and similarly affected.

Cognitive-behavioral intervention is composed of numerous techniques that may be used singularly or collectively in a treatment package. Behavioral strategies include progressive muscle relaxation, relaxation training, and hypnosis. Cognitive strategies include guided imagery, autogenic training, distraction, thought monitoring, coping self-statements, and problem solving. Descriptions of the techniques utilized with cancer pain patients are provided in Table 2.

Cognitive-behavioral strategies have been practiced extensively in the treatment of chemotherapy-related

Table 2. — Definitions of Cognitive-Behavioral Strategies

Technique Name	Description
Progressive Muscle Relaxation	Actively tensing and relaxing various muscle groups, one at a time, to differentiate between the muscle in its tense and usually wakeful state, and the muscle in its goal state of relaxation.
Relaxation	Relaxation in which attention and imagination are focused on the dissipation of tension in successive muscle groups.
Hypnosis	Achieving an intense state of relaxation, or trance, and receiving suggestions to alter sensations, behavior, feelings or thoughts.
Guided Imagery	Using mental imagery, usually of a neutral or positive nature in which the person is led through a particular scene. Imagery may be visual, auditory, kinesthetic or a combination. Frequently used in combination with relaxation or hypnosis.
Autogenic Training	Focusing on internal bodily states and transforming sensations through imagery (eg, a threatening sensation such as pain is imagined to be instead a soothing sensation such as warmth).
Distraction	Diverting attention away from the sensation of pain to a neutral or pleasant stimulus.
Cognitive Restructuring	Monitoring and evaluating negative thought patterns in an effort to create more realistic and adaptive cognitions.
Coping Self-statements	Stating specific positive affirmations such as "I can do this" or "I am strong enough to handle this."
Problem Solving	Labeling of a problem and generation of possible solutions utilizing a cost-benefit analysis.

nausea and vomiting.<sup>26</sup> With the advent of new antiemetic drugs, however, nausea is now better controlled, and these techniques are less utilized.<sup>17</sup> Cognitive-behavioral treatment also has a solid history with chronic pain syndromes,<sup>26</sup> whereas cancer pain literature has been slowly evolving. Overall, one of the most widely used and espoused techniques for cancer related pain is hypnosis. In the Spiegel study described above, intervention participants who were experiencing pain were further subdivided to examine the effects of hypnosis. That is, half of the intervention subjects received the group psychotherapy condition, and the remaining treatment subjects received group therapy plus a 5- to 10-minute hypnosis exercise for pain control. Results at one year revealed that intervention members who received group psychotherapy plus hypnosis reported less pain sensation than those who received only group psychotherapy. Differences between the intervention and control groups were significant, suggesting that the addition of a hypnosis procedure may produce a cumulative effect on the reduction of cancer pain.

In another study by Syrjala and colleagues,<sup>27</sup> cancer patients with oral mucositis pain undergoing bone marrow transplantation were randomly assigned to one of four groups: (1) routine treatment, (2) a therapist attentional control, (3) hypnosis (ie, relaxation and imagery of a visual, auditory and kinesthetic nature), or (4) a cognitive-behavioral skills package. The cognitive-behavioral skills package was quite extensive and included progressive muscle relaxation, autogenic training, cognitive restructuring, distraction, coping self-statements, problem solving, and exploration of the patients' interpretations of their illnesses and treatments. Additionally, psychoeducation specific to transplantation pain was provided. Guided imagery, however, was specifically *excluded* from the cognitive-behavioral skills package. Patients assigned to the hypnosis and the cognitive-behavioral groups participated in two individualized verbal training sessions prior to the transplant procedure, and they received written and audiotaped instructions to practice their skills prior to hospital admission. Therapy sessions to reinforce training were provided twice a week for the first five weeks of hospitalization. Patients in the therapist attention control condition met with a mental health professional to discuss general, non-pain-related topics for the equivalent amount of time and session frequency as the hypnosis and cognitive-behavioral groups.

Results indicated that only the hypnosis-alone group reported significantly less posttransplant pain than that reported by controls. This was particularly true during weeks 2 and 3 posttransplant. Indeed, reported peak pain for the hypnosis group was lower

in intensity and of a shorter duration. There were no differences among the four groups in terms of opioid usage, suggesting that decreased pain report in the hypnosis group was not simply a function of additional pain medication. As the authors suggest, the superiority of the hypnosis group over the cognitive-behavioral skills program implies that the guided imagery component may be pivotal to effective treatment. However, this result may have been influenced by the extraordinary degree of pain associated with oral mucositis and transplantation. In support of this, the article does comment that the patients who received the cognitive-behavioral skills package began to refuse sessions. Those patients engaging in hypnosis did not rebuff intervention, but they required active, engaging imagery to stay involved. Thus, patients experiencing severe levels of pain may require an intensely distracting approach to pain management such as that provided by guided imagery. Additionally, as noted by the researchers, the lack of success with the cognitive-behavioral skills training also may have been compromised by the number of techniques used, which may have surpassed what patients could master in such a short period of time.

In a subsequent study by many of the same researchers,<sup>28</sup> bone marrow transplant patients were again assigned to several conditions: (1) treatment as usual, (2) therapist support, which comprised a psychoeducation component and reassurance but not the training of new coping skills, (3) relaxation, imagery, and autogenic training (called hypnosis in the previous study), and (4) a cognitive-behavioral skills program. This time, the package of cognitive-behavioral techniques was more limited in scope. It included the relaxation program provided to group 3 as well as the techniques of coping self-statements, distraction, and problem solving. Patient training and therapy administration were identical to the companion study.

As noted, the relaxation training in this study was a near duplicate of the hypnosis procedure in the prior study. Apparently, the authors had chosen to use a different label to increase patient acceptance of the procedure. Indeed, there has been some inconsistencies in terminology in the literature, with researchers labeling identical procedures differently. According to Jay and associates,<sup>29</sup> this has been due not only to patient resistance, but also to a lack of clear definition of terms and standardization of procedures, making similar techniques (eg, "relaxation with guided imagery" and "hypnosis") and their associated outcomes in studies difficult to compare. As a consequence, the strategies of relaxation with guided imagery and hypnosis with cancer pain have not been proven to differ empirically at this time.<sup>30</sup>

Data analysis from the second Syrjala study revealed that patients in the relaxation/imagery/autogenic training group and in the cognitive-behavioral skills group reported significantly less pain than those in the treatment-as-usual control group. However, there were no differences between the relaxation/imagery/autogenic training group and the cognitive-behavioral skills group in terms of pain levels. Thus, findings suggest that the addition of cognitive-behavioral techniques to relaxation/imagery/autogenic training did not further reduce pain levels. In addition, those participants who received therapist support also reported less pain than the treatment-as-usual controls. However, the difference was a trend and did not reflect a statistically significant effect. Again, no differences were detected among the groups in terms of opioid use. As psychological distress was measured only prior to transplant, no data were available to examine changes in this variable that occurred during intervention. However, the authors did report that emotional distress prior to transplantation was found to be a significant predictor of subsequent pain reports and opioid usage.

One other methodically sound study supports the idea that relaxation and guided imagery produce significant effects on cancer-related pain. Sloman et al<sup>31</sup> randomly assigned hospitalized cancer patients who were experiencing physical pain to one of three conditions for a 2-week regimen of (1) routine care (ie, a control condition), (2) progressive muscle relaxation and guided imagery by audiotape, or (3) progressive muscle relaxation and guided imagery by live nurse instruction. Subjects in the audiotaped and live intervention groups received two relaxation and imagery sessions each week, and they were directed to practice twice a day. In comparison to controls, results indicated that both of the intervention groups reported a significant reduction in the intensity and overall severity of pain. The live instruction group also reported less pain sensation than the control group, suggesting that live intervention may yield some additional benefits. Lastly, participants in the audiotaped and live-instruction groups required less as-needed nonopioid medication than did the control subjects.

Psychological research suggests that relaxation with guided imagery (ie, hypnosis) is an effective treatment strategy for the relief of cancer pain. In fact, in a meta-analysis that examined cancer pain, relaxation interventions consistently produced a positive and large effect on cancer pain.<sup>32</sup> However, the analysis did not compare relaxation with and without imagery. Data are less clear on the efficacy of cognitive-behavioral techniques without the benefit of relaxation with imagery. A meta-analysis of cognitive-behavioral strategies utilized for non-cancer-related pain found that all

techniques were effective.<sup>33</sup> Further research is needed to delineate the effect of these techniques on cancer-related pain.

## Conclusions

Cancer pain is a complex phenomenon, affected by both medical and psychosocial variables. Effective treatment of cancer pain begins with comprehensive assessment. In this regard, researchers suggest that physicians inquire about the existence of pain as a standard part of treatment and use patient self-report as the primary source of information.<sup>1,2</sup> At a minimum, Cleeland and Syrjala<sup>34</sup> indicate that pain assessment should focus on pain severity (usually rated on a 0 to 10 verbal rating scale), pain characteristics (location, temporal pattern, quality, and response to treatment) and pain impact on quality of life (mood, physical functioning, social interactions, and concurrent symptoms). A formalized and routine assessment of pain assists in not only developing a common patient-physician language for the experience of pain, but also orienting the patient towards active participation and compliance in treatment.

While patients tend to be compliant with cancer therapies, adherence to taking symptom-related medications is less common.<sup>14</sup> Patients may eliminate, skip, or reduce medications because of misconceptions regarding such issues as side effects, tolerance, and addiction. Indeed, pain and its medical treatment appear to be significantly affected by the fears and faulty belief systems of patients and their family members.<sup>5,9</sup> A review of the results of several psychoeducational interventions reveals that simple education of pharmacological issues has the potential to not only increase patient and family adherence to a medication regimen, but also substantially decrease reported pain levels.

Moderate to severe cancer-related pain may be more complicated to treat because pain is likely to significantly impact a patient's quality of life. Available evidence suggests that cancer patients who experience pain report significantly more affective distress, typically depression and anxiety, than those without pain.<sup>4,10,12</sup> Further, the more severe the experience of emotional distress, the more severe the experience of pain.<sup>10,21</sup> Proper management may therefore require a multidisciplinary approach with the inclusion of a mental health professional knowledgeable in pain strategies. Under these circumstances, therapeutic models such as supportive or cognitive-behavioral psychotherapy may be useful adjuncts to pharmacotherapy. Research indicates that these psychotherapeutic interventions can offer significant benefits such as increased relief from pain and associated emotional distress.

Ideally, psychosocial resources should be introduced when a patient is first diagnosed with cancer, and the patient should be reminded or encouraged to participate again as different issues or crisis periods materialize. Data suggest that many patients may be more open to mental health services than physicians realize. For example, one group of researchers found that 24 of 27 cancer patients stated they would likely participate in a psychosocial group if referred by their oncologists.<sup>35</sup> However, the number dropped dramatically to 7 of 24 patients who indicated they would join a group without first consulting their oncologist.

Thus, physicians are in a position to influence their patients by addressing the very psychosocial factors responsible for adequate pain relief. As noted by Loscalzo,<sup>36</sup> some patients may resist the concept or a direct referral to a mental health professional because of a fear that the physician has given up hope. It is therefore incumbent on the physician to frame the referral in a way that facilitates patient involvement. For example, a physician can state that problems with pain require adjustment, and mental health professionals are specially trained to talk with the patient and generate additional coping strategies. In this way, traditional medical services could be combined with psychosocial support as an example of true comprehensive and integrative care.

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