

## PROBLEM-SOLVING THERAPY FOR CANCER PATIENTS

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### Abstract

Estimates of the prevalence of psychological difficulties, such as depression, anxiety, and poor quality of life, are high among individuals diagnosed with cancer. Problem-solving therapy (PST), a cognitive and behavioral intervention, is one major approach that has been applied and evaluated as a means of positively impacting on such problems. PST trains individuals in a series of skills that helps them cope more effectively with life stressors, such as those associated with cancer and its treatment. This paper provides a brief overview of the research supporting its efficacy, as well as clinical guidelines.

**Key words:** Problem-solving therapy, effectiveness of psychological treatments, cancer.

### Resumen

Las estimaciones de la prevalencia de los problemas psicológicos, tales como la depresión, la ansiedad y la mala calidad de vida, son altas entre las personas diagnosticadas con cáncer. La terapia de solución de problemas (PST), una intervención cognitivo-conductual, es uno de los enfoques principales que se ha aplicado y valorado como un medio de impactar positivamente en este tipo de problemas. La PST capacita a las personas en una serie de habilidades que les ayuda a afrontar con mayor eficacia a los estresores vitales, tales como los relacionados con el cáncer y su tratamiento. Este artículo ofrece una breve descripción de la investigación que apoya su eficacia, así como los protocolos clínicos.

**Palabras clave:** Terapia de solución de problemas, eficacia de los tratamientos psicológicos, cáncer.

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## INTRODUCTION

Considerable medical progress has been made in treating the collective set of diseases known as cancer. Many types are curable and there has been a sustained decline in the overall death rate from cancer when one focuses on the impact on the total population<sup>(1)</sup>. Because of such improvements in medical science, however, more people are living with cancer than ever be-

fore. Although the extensive medical needs of such patients may be well attended to, psychosocial and emotional needs are often overlooked<sup>(2)</sup>. Almost every aspect of one's life can be affected, as cancer creates many stressors and can negatively impact on a patient's quality of life<sup>(3)</sup>. Even for people who generally cope well with major negative life events, cancer and its treatment greatly increases the stressful nature of even routine daily tasks. Weisman and

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Worden decades ago first referred to this situation for cancer patients as an “existential plight,” where one’s very existence may be endangered<sup>(4)</sup>. Recognizably, not every individual diagnosed with cancer will experience a plethora of problems, but many patients do report significant psychological difficulties.

Estimates of the prevalence of psychological difficulties, for example, range between 23% and 66% across cancer populations<sup>(5)</sup>. Depression, in particular, is a common experience among cancer patients. Studies utilizing both self-report and clinical observations suggest that major depression affects approximately 25% of all cancer patients<sup>(6)</sup>. Oncology patients can also experience high levels of anxiety, for example, while waiting to hear their diagnosis, before procedures, treatment and diagnostic tests, and while waiting for test results. In addition, cancer treatments themselves can be anxiety provoking and may contribute to the actual psychological morbidity of patients with cancer<sup>(7)</sup>. In fact, it has been estimated that 40% to 60% of patients’ emotional distress is directly attributable to the treatment itself<sup>(8)</sup>.

Given these kinds of statistics, a comprehensive approach to the treatment of a patient with cancer needs to include psychosocial interventions to help decrease emotional distress, as well as improve their overall quality of life<sup>(9)</sup>. Not treating such distress can not only lead to a potential exacerbation of the disease process itself, as research has strongly underscored the links between stress and cancer and between depression and cancer<sup>(6)</sup>, but can also impact on a patient’s willingness and ability to adhere to prescribed medical treatments. One such intervention is Problem-Solving Therapy (PST). PST has been evaluated as an intervention to improve the quality of life of cancer patients in multiple research studies. This article briefly describes this literature, as well as provides an overview

of the clinical guidelines comprising contemporary PST.

## PROBLEM-SOLVING THERAPY

PST is a psychosocial intervention, generally considered to be under a cognitive and behavior therapy umbrella, that is based on a biopsychosocial, diathesis-stress model of psychopathology<sup>(10)</sup>. It involves training in a series of skills geared to enhance one’s ability to cope effectively with a variety of life stressors posited to engender negative health and mental health outcomes. Life stressors include both major negative life events, such as experiencing cancer and its treatment, and chronic daily problems, such as financial, sexual, or interpersonal difficulties engendered by the cancer. A basic tenet of PST posits that much of what is conceptualized as psychopathology and behavioral difficulties, including significant emotional problems, is a function of ineffective coping with such stressors<sup>(11)</sup>. As such, teaching individuals to become better problem solvers as a means of coping with life stress, such as that related to cancer, is believed to eventuate in decreased extant physical and mental health problems. As such, the overarching goal of PST is to foster the adoption and effective implementation of adaptive problem-solving attitudes (i.e., optimism, enhanced self-efficacy) and behaviors (i.e., adaptive emotional regulation, planful problem solving) as a means of reducing distress and improving one’s overall well-being<sup>(10,11)</sup>.

## Relevance of PST for cancer patients

The relevance of PST for persons with cancer in particular is embedded in a general problem-solving model of stress, whereby the experience of cancer is conceptualized both as a major negative life event and the cause of a series of stressful daily problems<sup>(12)</sup>. Both sources of stress

are further hypothesized to increase the likelihood that a cancer patient will experience significant psychological distress, such as depression and anxiety. However, one's problem-solving ability is conceptualized as an important moderator of these relationships, whereby effective problem-solving ability serves to attenuate the probability of experiencing distress, even when the person is confronted by high levels of cancer-related difficulties.

The core assumptions of this framework have been supported by research findings based on multiple patient populations, including adult cancer patients<sup>(9)</sup>. For example, Nezu et al. found that under similarly high levels of cancer-related stress, those patients who were characterized as ineffective problem solvers reported higher levels of depression as compared to their cancer patient counterparts who were characterized as effective problem solvers<sup>(13)</sup>.

The major implication of this model for treatment, then, suggests that providing PST to patients with cancer should increase their ability to cope more effectively, and therefore, should impact positively on their distress and quality of life. This is in keeping with Andersen's biobehavioral model of cancer stress and disease course, which in part underscores the importance of impacting on a cancer patient's level of stress as a means of enhancing his or her quality of life and potentially improving the overall disease outcome<sup>(14)</sup>.

### **Research evaluating PST for cancer patients**

PST has been applied as a means of decreasing cancer patients' emotional distress and enhancing their quality of life by helping them to cope more effectively with the myriad of possible cancer-related problems and stressors (e.g., sexual difficulties, financial problems, family problems, role changes, physical limitations, pain, loss

of hair, difficulties sleeping, and so forth)<sup>(12)</sup>. For example, Nezu et al. conducted a randomized clinical trial entitled Project Genesis to assess the efficacy of PST as a means of improving the quality of life of distressed adult cancer patients<sup>(15)</sup>. In this clinical trial, adult cancer patients who were experiencing significant distress and depression were randomly assigned to one of three conditions: (a) ten 1.5-hour sessions of individual PST; (b) ten 1.5-hour sessions of PST provided simultaneously to both the cancer patient and his or her designated significant other (e.g., spouse, family member); or (c) a "treatment as usual" control. PST in this study was based on the empirically validated problem-solving training manual originally developed for major depressive disorder<sup>(16)</sup> and revised specifically for an adult cancer population<sup>(9)</sup>.

The second treatment condition involved providing PST to the cancer patient in tandem with his or her significant other. This person served as a problem-solving coach by providing social support, encouragement, and feedback regarding the patient's attempts to resolve problems and cope with various cancer-related stressors. Such individuals participated in all phases of the intervention and were provided their own set of handouts and training materials. Whereas they were encouraged to use the problem-solving principles to help cope with their own problems when necessary, the primary purpose of their involvement centered around the cancer patient. This condition was included to empirically assess whether incorporating a structured social support component in therapy would augment the effects of individually administered PST. Similar to the PST condition, participants in this condition continued to receive standard medical care related to their cancer treatment.

Results of this investigation at posttreatment across several self-report, clinician-ratings, and ratings by the significant other,

collectively provide strong evidence in support of the overall efficacy of PST for decreasing emotional distress and improving the overall quality of life of patients with cancer. Specifically, patients in both treatment conditions were found to evidence significant improvement as compared to individuals in the control condition. At posttreatment, no differences were found between these two conditions. However, at a 6-month follow-up assessment, on approximately half of the variables assessed, patients who received PST along with a significant other continued to improve significantly beyond those individuals receiving PST by themselves, highlighting the advantage of formally including a collaborative person in treatment. These positive effects of PST were not only statistically significant, but were also found to be highly clinically significant as well. Moreover, analyses indicated that improvements in problem solving were found to correlate significantly with decreases in psychological distress and improvements in overall quality of life.

In a similar investigation, Mishel et al. paired training in problem solving with a cognitive reframing strategy as a means of helping 134 white and 105 black men with localized prostate carcinoma to manage their levels of uncertainty and symptom control<sup>(17)</sup>. Participants were randomly assigned to one of three conditions—the combined psychosocial treatment provided only to the patient himself, treatment provided to the patient and a selected family member, and the control (“medical treatment as usual”). Both forms of treatment were provided by trained nurses through weekly phone calls for eight weeks. In general, regardless of ethnicity, participants who received either form of the intervention improved significantly as measured at the 4-month post-baseline assessment. It is during this period of time that cancer treatment side

effects are most prevalent. As such, it is particularly noteworthy that the combined PST and cognitive reframing treatment led to significant improvements in control of incontinence at 4-months post-baseline.

Allen et al. assessed the efficacy of PST, as compared to a no-treatment control, with regard to a population of 164 women diagnosed with breast cancer and for whom a first course of chemotherapy had been recently initiated<sup>(18)</sup>. PST consisted of two in-person and four telephone sessions with an oncology nurse who provided problem-solving skills training to the women over a 12-week period. This treatment program was designed to empower women with breast carcinoma to cope more effectively with a range of difficulties when diagnosed in mid-life. Participants in both conditions were assessed for physical and psychosocial adjustment.

At a 4-month evaluation, participants in general tended to have significantly less unmet needs and better mental health as compared to baseline. At the 8-month assessment, differences between the treated and control conditions emerged, pointing to the efficacy of the training. In general, PST led to improved mood and more effective coping with problems associated with daily living tasks. Further, the intervention was effective for the majority of women in resolving a range of problems related to cancer and its treatment, including physical side effects, marital and sexual difficulties, and psychological problems. However, an unexpected finding emerged with regard to women who had baseline scores characteristic of “poor problem solving.” In essence, such individuals, relative to the control participants, were less likely to resolve such cancer-related problems. Qualitative analyses suggested that such individuals became especially overwhelmed by expectations to “go it alone” after only one in-person treatment session. As such, these authors concluded

that an important outcome of this study was the advisability of prescribing treatment based on one's level of need or risk. In other words, for individuals who are initially identified as poor problem solvers, a more intensive program (e.g., more face-to-face sessions) may be necessary as compared to those who at baseline are average or good problem solvers.

A study by Given et al. focused on 237 adult cancer patients recently diagnosed with a solid tumor and who were undergoing a first course of chemotherapy<sup>(19)</sup>. Participants were randomly assigned to either a "symptom management intervention" or conventional care. The PST intervention focused on helping to generate a list of strategies that patients and their caregivers could use in order to more effectively cope with a variety of cancer-related problems (e.g., alopecia, depression, fatigue, pain, insomnia). Based on discussions between a nurse and patient-caregiver dyad, various interventions were selected for implementation. Treatment occurred within 10 contacts (in person and telephone) over the course of 20 weeks.

Results indicated that treated patients who had higher baseline symptom severity levels reported lower depression at 10, but not 20 weeks. Unexpectedly, patients in the experimental condition characterized by higher baseline depression were found to be more depressed at 10 weeks than control patients. Further, the intervention was found to be more effective in lowering depression at 10 weeks as a function of its impact on other symptoms rather than on depression directly. However, at 20 weeks, a significant main effect for treatment on depression was identified. As such, these authors concluded that the intervention influenced depression differentially over time. Specifically, it appeared to lower depression through enhanced ability to manage symptoms unrelated to depression and only later did it impact depression directly.

In a subsequent assessment of the impact of this intervention on the limitations imposed on patients by symptoms of cancer and its medical treatment, Doorenbos et al. reported that on average, after 10 weeks, patients receiving the problem-solving based intervention reduced such symptom limitations by a statistically significant 13 points more than the control group<sup>(20)</sup>. Moreover, this positive treatment effect was maintained over the course of the remainder of the treatment. Parenthetically, these authors concluded that this intervention was particularly helpful to younger individuals in managing cancer-related symptom limitations.

Sherwood et al. developed a cognitive-behavioral intervention grounded in problem-solving theory to decrease symptom severity in patients undergoing chemotherapy for advanced cancer<sup>(21)</sup>. Patients recently diagnosed with stage III, IV, or recurrent cancers were randomly assigned to receive usual care, or usual care plus the intervention. Over a 10-week period, patients in the intervention group received two face-to-face sessions and three telephone contacts with a trained nurse interventionist. At each contact, nurses assessed patients' physical symptoms and asked them to rate the severity and impact on the quality of life of each symptom. The nurses utilized cognitive-behavioral strategies to assist patients in reframing their beliefs regarding symptom control, suggested cognitive and behavioral self-care strategies to cope with specific symptoms, and assisted patients in selecting strategies and developing plans to use them.

When controlling for certain covariates (e.g., age, gender, depressive symptoms at baseline), symptom severity at baseline and group assignment were found to be significant predictors of symptom severity at 10 weeks. Patients in the intervention group reported an average symptom severity significantly lower than that of the

control group. Although symptom severity began to increase for all patients after week 10, between-group differences in symptom severity persisted at the 20-week follow-up, suggesting that patients in the intervention group continued to successfully implement problem-solving strategies after the intervention was complete.

### **Problem-Solving Therapy for caregivers of cancer patients**

Family members who are responsible for the day-to-day care of cancer patients can also experience high levels of distress and frequent problems. As such, Houts et al. hypothesized that training such individuals themselves in problem-solving skills may be a particularly useful approach in helping family caregivers to cope more effectively in this role<sup>(22)</sup>. The "Prepared Family Caregiver Course" adapted the then D'Zurilla and Nezu<sup>(23)</sup> PST model as a means of providing the following types of information to family caregivers of cancer patients: (a) understanding the problem; (b) when to get professional help; (c) what can be done to deal with, as well as prevent, a problem; (d) identifying obstacles when they arise and planning to overcome them; and (e) carrying out and adjusting the plan. Manuals have been developed that contain guided problem-solving plans across a variety of physical (e.g., fatigue, hair loss, appetite difficulties) and psychosocial (e.g., depression, anxiety) problems that cancer patients commonly experience<sup>(24,25)</sup>. These manuals use the acronym *COPE* to highlight various problem-solving operations, where *C* = creativity, *O* = optimism, *P* = planning, and *E* = expert information. Although no controlled studies have yet been conducted with this protocol, a program evaluation concerning participant satisfaction and acceptability of the treatment approach among various samples of caregivers has been very promising<sup>(26)</sup>.

With regard to problem-solving interventions for family caregivers of cancer patients, Toseland et al. reported a study that evaluated the efficacy of an intervention for spouses of cancer patients that included support, problem solving, and coping skills<sup>(27)</sup>. Forty male and forty female spouses of cancer patients were randomly assigned to this intervention or a usual treatment condition. Results indicated that little change occurred over time for caregivers in either the treatment or control condition. However, this lack of effects were probably due to the low level of distress and problems that existed across this sample at pretreatment. Thus, when focusing on a subsample of distressed caregivers, significant effects were in fact evident. For example, distressed caregivers undergoing the PST-based intervention were found to significantly improve in their physical, role, and social functioning, as well as their ability to cope with pressing problems. The cancer patients related to this subsample of distressed caregivers receiving the intervention were also found to be significantly less depressed at posttreatment. Moreover, in a subsequent 6-month post-baseline follow-up, it was found that, overall, patients whose spouses received the PST intervention became significantly less depressed than did control patients<sup>(28)</sup>.

### **PST for mothers of pediatric cancer patients**

Sahler et al. focused on the well-being of mothers of newly diagnosed pediatric cancer patients<sup>(29)</sup>. Ninety-two such mothers were randomly assigned to one of two conditions: PST and a control (standard psychosocial care). The problem-solving intervention consisted of eight 1-hour individual sessions and was adapted for this population based on the work of D'Zurilla and Nezu<sup>(30)</sup>. At posttreatment, results indicated that mothers in the PST condition had sig-

nificantly enhanced problem-solving skills and significantly decreased negative affectivity as compared to their control counterparts. Moreover, analyses revealed that changes in self-reports of problem-solving behaviors accounted for 40% of the difference in mood scores between the two conditions. In addition, the intervention appeared to have the greatest impact on improving constructive problem solving, whereas improvement in mood was most influenced by decreases in dysfunctional problem solving.

In an extension of their previous investigation, Sahler and her team further assessed the efficacy of PST among a sample of 430 English- and Spanish-speaking mothers of pediatric cancer patients<sup>(31)</sup>. Again, the 8-week PST condition was compared to a usual care control. Replicating their previous work, results from this study indicated that mothers receiving the PST protocol reported significantly enhanced problem-solving skills and significantly decreased negative affectivity. Whereas treatment effects appeared to be greatest at posttreatment, several differences were maintained at the 3-month follow-up.

### **PST in stepped-care**

In order to increase depressed patients' access to psychological treatment, others have adapted a version of PST specifically to be implemented in medical settings, Problem-Solving Treatment for Primary Care (PST-PC). With a greater emphasis on rational problem-solving skills than on problem orientation, PST-PC was designed so that it could be implemented by non-therapists (e.g., nurses<sup>(32)</sup> or social workers trained and closely supervised by psychologists or psychiatrists). Several groups have further adapted PST-PC as a treatment for depressed cancer patients, incorporating it into stepped-care approaches for depression management.

Walker and Sharpe incorporated PST-PC into their program, "Depression Care for People with Cancer" (DCPC), a collaborative care intervention for major depressive disorder that was evaluated in the SMaRT Oncology series of randomized controlled trials<sup>(33)</sup>. Cancer patients diagnosed with major depressive disorder were randomly assigned to receive either usual care, or usual care supplemented with the DCPC intervention. Patients in the intervention group received up to 10 individual sessions consisting of problem-solving training, psychoeducation of depression, and guidance in deciding whether to try an antidepressant medication. At the end of 3 months, patients in the intervention group had significantly greater improvements in depressive symptoms than did patients receiving usual care, and a greater portion of the intervention group achieved complete remission from major depressive disorder. These differences persisted at the 12-month follow-up<sup>(34)</sup>.

Ell et al. incorporated PST-PC into a stepped-care intervention in the Alleviating Depression Among Patients with Cancer (ADAPT-C) randomized clinical trial<sup>(35)</sup>. Low-income Hispanic cancer patients meeting criteria for major depression were randomly assigned to receive the intervention or enhanced usual care (EUC). Patients in the EUC group received psychoeducation regarding depression, and their oncologists were notified of their depression status. Patients in the intervention group initially received either PST-PC or antidepressant medication according to patient preference, and those who did not respond to treatment within 4-8 weeks were given the opportunity to try their non-preferred treatment.

Over the course of the study, 94 patients received PST, 71 received a combination of PST and antidepressant medication, and 10 received antidepressant medication alone. In contrast, only 24 EUC patients received

any type of treatment for depression. At the end of 12 months, 63% of intervention patients had a 50% reduction in severity of depressive symptoms, compared to only 50% of EUC patients<sup>(36)</sup>. A 24-month follow-up found that these gains were maintained for 46% of the intervention group, but only 32% of the EUC group. Of the 172 patients who no longer met criteria for depression by month 12, 37% experienced a recurrence by month 24. Recurrence rates were similar for the two groups, and had a highly significant association with severity of cancer at baseline (e.g., stage 3, stage 4, or recurrent), and with functional status at month 12. However, as compared to patients in the EUC group, patients in the intervention group experiencing a recurrence of depression were significantly more likely to receive depression treatment between months 12 and 24<sup>(37)</sup>.

Although the study's stepped-care design makes it difficult to isolate the effects of PST-PC in the absence of antidepressant medication, it is important to note that intervention participants overwhelmingly preferred PST-PC to medication. At 6 months, 84.4% of 77 respondents reported that they were "satisfied" to "extremely satisfied" with PST-PC, but only 40.5% of 37 respondents reported similar satisfaction with antidepressant medication.<sup>36</sup>

Hopko et al. compared PST-PC to Behavioral Activation Therapy (BA) for breast cancer patients whom had been diagnosed with depression<sup>(38)</sup>. Eighty patients were randomly assigned to receive eight sessions of either PST-PC or BA. Intent-to-treat analyses demonstrated that both interventions were efficacious at improving self-rated and clinician-rated depressive symptoms. Significant improvements were also observed in anxiety, quality of life, social functioning, environmental reward, and various medical outcomes. These outcomes persisted, and in many cases increased in magnitude, over the 12-month follow-up period. Although

the study did not have a control condition, results were judged to be clinically meaningful on the basis of moderate to large effect sizes on all depression, anxiety, and quality of life outcome measures. In addition, the authors note that the observed effect sizes for both conditions were similar to that of BA, and superior to those of cognitive therapy and antidepressant medication in a previous study.

## **PROBLEM-SOLVING THERAPY: OVERVIEW OF CLINICAL GUIDELINES**

In the remainder of this article, we provide a brief overview of the clinical components of contemporary PST. Note that our model of PST has been revised over the years to incorporate research findings from several fields, including clinical psychology, cognitive psychology, and affective neuroscience<sup>(10)</sup>, using previous versions<sup>(9,23,30,39)</sup> as a base. As such, the present model contains components not included in earlier studies of PST for cancer patients. However, it is an approach that is strongly recommended when treating cancer patients and one that is currently being evaluated in a randomized clinical trial to reduce depression among women with breast cancer.

Conceptually, we suggest that several major obstacles can potentially exist for a given individual when attempting to successfully resolve real-life stressful problems. These include:

- a. Cognitive overload, especially under stressful circumstances
- b. Limited or deficient ability to engage in effective emotional regulation
- c. Biased cognitive processing of various emotion-related information (e.g., negative automatic thoughts, poor self-efficacy beliefs, difficulties in disengaging from negative mood-congruent autobiographical memories)



- d. Poor motivation due to feelings of hopelessness
- e. Ineffective problem-solving strategies

In order to achieve treatment goals and objectives, PST focuses on training individuals in four major problem-solving “toolkits” that map on to the above barriers. These toolkits include (a) Problem-Solving Multitasking, (b) the “Stop, Slow Down, Think, and Act” (S.S.T.A.) method of approaching problems while under stress, (c) Healthy Thinking and Positive Imagery, and (c) Planful Problem Solving.

Note that whether all strategies in all toolkits are taught and emphasized is greatly dependent on the assessment of a patient’s problem-solving strengths and weaknesses, as well as the therapist’s clinical judgment regarding the relevance and importance of other related factors, such as the anticipated length of treatment, the severity of negative symptoms, and the subsequent progress (or lack of) being made by the individual. In other words, not all training activities across all four toolkits are mandatory to engage in. Rather, the therapist should use assessment and outcome data to inform various treatment decisions.

### **Problem-solving multitasking: Overcoming cognitive overload**

This set of tools is geared to help an individual overcome the ubiquitous human limitation when attempting to cope with stressful situations in real life—cognitive overload. Due to basic human limitations in one’s ability to manipulate large amounts of information in our working memory simultaneously while attempting to solve complex problems or make effective decisions, especially when under stress, individuals are taught to use three “multi-tasking enhancement” skills: externalization, visualization, and simplification. These skills are considered founda-

tional to effective problem solving, similar to those skills that may be taught as basic to effective aerobic exercise, such as stretching, breathing, and maintaining a healthy diet.

*Externalization* involves displaying information “externally” as often as possible. More specifically, patients are taught to write ideas down, draw diagrams or charts to determine relationships, draw maps, make lists, and audiotape ideas. In this manner, one’s working memory is not overly taxed and can allow one to concentrate more on other activities, such as creatively thinking of various solutions. The *visualization* tool is presented as using one’s “mind’s eye” or visual imagery to (a) help better clarify the nature of problem, (b) practice carrying out a solution, and/or (c) reduce high levels of negative arousal (i.e., a form of guided imagery whereby one is directed imaginally to go on a peaceful vacation). *Simplification* involves “breaking down” or simplifying problems in order to make them more manageable. Patients are taught to break down complex problems into more manageable smaller problems, and translate complex, vague, and abstract concepts into more simple, specific, and concrete language.

### **“Stop, Slow Down, Think, and Act” (S.S.T.A.): Overcoming emotional dysregulation and maladaptive problem solving under stress**

In situations where the primary goal of PST for a particular individual involves the decrease of clinically significant emotional distress (e.g., depression, suicidal ideation, generalized anxiety), emphasizing training in this toolkit to such patients becomes especially important. It is also useful for training individuals as a means of preventing extant emotional concerns from becoming particularly problematic. In essence, patients are taught a series of steps geared to

enhance their ability to modulate (as opposed to “eradicate”) negative emotional arousal in order to more effectively apply a systematic approach to solving problems (i.e., to be able to optimally use various planful problem-solving skills). It is also presented to individuals as the overarching “map” to follow when attempting to cope with stressful problems that engender strong emotional reactions and is included as the major treatment strategy geared to foster adaptive emotional regulation skills. It is also included in PST as a means of minimizing impulsive/careless attempts at problem solving.

According to the S.S.T.A. method, patients are first taught to become “emotionally mindful” by being more aware of when and how they experience negative emotional arousal. Specifically, they are taught to notice changes in physical (e.g., headache, fatigue, pain), mood (e.g., sadness, anger, tension), cognitive (e.g., worry, thoughts of negative outcomes), and/or behavioral (e.g., urge to run away, yelling, crying) indicators. For certain individuals, additional training may be necessary to increase the accuracy by which they attempt to identify and label emotional phenomena. Next, they are taught to “STOP;” that is, to engage in behaviors (e.g., shouting out loud, raising one’s hands, holding up a stop sign) that helps them to “put on the brakes” in order to better modulate their emotional arousal (i.e., prevent the initial arousal from evoking a more intense form of the emotion together with its “full blown” concomitant negative thinking, state-dependent negative memories, negative affect, and maladaptive behaviors).

Next, in order to meaningfully be able to “STOP;” patients are further taught to “Slow Down;” that is, to decrease the accelerated rate at which one’s negative emotionality can occur. Various specific techniques are provided and practiced with patients

in order to offer them a *choice* among a pool of potentially effective “slowing down tools.” These include counting down from 10 to 1, diaphragmatic breathing, guided imagery or visualization, “fake” yawning (in keeping with recent neuroscience research demonstrating the efficacy of directed yawning as both a stress management strategy and a means to enhance cognitive awareness)<sup>(40)</sup>, meditation, exercise, talking to others, and prayer (if relevant to a particular individual). Individuals are also encouraged to use strategies that have been helpful to them in the past.

The “Thinking” and “Acting” steps in S.S.T.A. refer to applying the four specific planful problem-solving tasks (i.e., defining the problem and setting realistic goals, generating alternative solutions, decision making, solution implementation and verification) once one is “slowed down,” in attempting to resolve or cope with the stressful problem situation that initially evoked the negative emotional stress reaction.

### **Healthy thinking and positive imagery: Overcoming negative thinking and poor motivation**

This toolkit is included to specifically address additional problem-orientation issues if relevant to a particular individual, that is, negative thinking and feelings of hopelessness. Similar to cognitive restructuring strategies, patients are taught that “how one thinks can affect how one feels.” In essence, this toolkit entails a variety of cognitive change techniques geared to enhance optimism and enhanced self-efficacy. For example, patients are taught to use the “ABC Model of Thinking” (where “A” = the activating or triggering event, “B” = a given belief, attitude, or viewpoint, and “C” = the emotional consequence that is based on that belief, as compared to “reality”) in order to determine whether one needs to change such negative beliefs.

They are provided with a series of “healthy thinking” rules (e.g., “Nothing is 100% perfect . . . problems are a normal part of life . . . everyone makes mistakes . . . every minute I spend thinking negatively takes away from enjoying my life”), as well as a list of “realistically optimistic self-statements” (e.g., “I can solve this problem;” “I’m okay—feeling sad under these circumstances is normal;” “I can’t direct the wind, but I can adjust the sails;” “Difficult and painful does not equal hopeless!”), as more optimistic examples of ways to think in order to re-adjust their orientation.

In addition, if a given individual has particular difficulty with changing their negative thinking, the PST therapist can conduct a “reverse advocacy role play” exercise surrounding a given individual’s unique negative thinking patterns. In this exercise, a given maladaptive attitude is temporarily “adopted” by the therapist using a role-play format. The individual, who now has to adopt the role of “counselor,” has to provide reasons or arguments for why such an attitude is incorrect, maladaptive, or dysfunctional. In this manner, the patient is influenced to begin verbalizing those aspects of a positive problem orientation. The process of identifying a more appropriate set of beliefs toward problems and providing justification for the validity of these attitudes helps the individual to begin to personally adopt such an orientation.

The second tool in this toolkit focuses on using visualization to enhance motivation and to decrease feelings of hopelessness. The use of visualization here, which is different than that described within the multi-tasking toolkit, is to help the patient to sensorially experience what it “feels” like to successfully solve a difficult problem; in other words to “see the light at the end of the tunnel or the ribbon across the finishing line.” With this strategy, the

therapist’s goal is to help patients create the experience of the success in their “mind’s eye,” and vicariously experience the potential reinforcement to be gained. Patients are specifically taught to *not* focus on the “how” the problem got solved; rather, to focus on the feelings associated with having already solved it. The central goal of this strategy is to have individuals create their own positive consequences (in the form of affect, thoughts, physical sensations, and behavior) associated with solving a difficult problem as a major motivational step toward overcoming low motivation and feelings of hopelessness, as well as minimizing the tendency to engage in avoidant problem solving.

### **Planful problem solving: Fostering effective problem solving**

This last toolkit provides training in the four planful problem-solving tasks, the first being *problem definition*. This activity involves having patients separate facts from assumptions when describing a problem, delineate a realistic and attainable set of problem-solving goals and objectives, and identify those obstacles that prevent one from reaching such goals. Note that this model advocates delineating both *problem-focused goals*, which include objectives that entail changing the nature of the situation so that it no longer represents a problem, as well as *emotion-focused goals*, which include those objectives that involve moderating one’s cognitive-emotional reactions to those situations that cannot be changed. Strategies that might be effective in reaching such emotion-focused goals might include stress management, forgiveness of others, and acceptance that the situation cannot be changed.

The second task, *generating alternatives*, involves creatively brainstorming a range of possible solution strategies geared to overcome the identified obstacles to

their goals using various brainstorming techniques. *Decision Making*, the third planful problem-solving task, involves predicting the likely consequences of the various alternatives previously generated, conducting a cost-benefit analysis based on these identified outcomes, and developing a solution plan geared to achieve the articulated problem-solving goal. The last activity, *solution implementation and verification*, entails having the person optimally carry out the solution plan, monitor and evaluate the consequences of the plan, and determine whether his or her problem-solving efforts have been successful or need to continue.

### Guided Practice

A substantial majority of the overall PST intervention involves providing feedback and additional training to individuals in the four toolkits as they continue to apply the model to current problems they are experiencing. In addition, PST encourages individuals to “forecast” future stressful situations, whether positive or negative in order to anticipate how such tools can be applied in the future in order to minimize potential negative consequences.

### SUMMARY

This paper began with a description of Problem-Solving Therapy (PST), a cognitive and behavioral intervention geared to foster one’s ability to cope effectively with a variety of life stressors posited to engender negative health and mental health outcomes. The relevance of PST specific to the lives of cancer patients was provided next, whereby the experience of cancer was conceptualized as a major negative life event and the cause of a myriad of possible stressful daily problems. Effectively coping with such stressors, via effective problem-solving ability, leads to enhanced quality of life.

Research evaluating the efficacy of PST specific to various cancer patient populations was presented next. Populations addressed included adult oncology patients, caregivers of adult cancer patients, and mothers of pediatric cancer patients. In general, clinical trials have supported the efficacy of PST with regard to decreasing emotional distress, depression, and anxiety, as well as improving a patient’s overall quality of life.

The last section provided a brief overview of the treatment components comprising contemporary PST, which is a more recent revision based on relevant research from related subfields, including clinical psychology, cognitive psychology, and affective neuroscience. This model of PST focuses on teaching individuals four sets of tools geared to overcome potential barriers to effective problem solving. Such obstacles include (a) cognitive overload, (b) emotional dysregulation, (c) negative thinking and feelings of hopelessness, and (d) ineffective problem-solving skills. The toolkits, mapping onto each of these barriers, include: (a) problem-solving multi-tasking, (b) the *S.S.T.A.* method of emotional regulation, (c) healthy thinking and using visualization to overcome hopelessness, and (d) planful problem solving. PST involves teaching these skills, as well as providing multiple opportunities for guided practice and future forecasting.

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