

# Brief Cognitive-Behavioral and Mindfulness-Based Support for Chemotherapy-Related Anxiety: A Practical Coping Framework

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## ABSTRACT

Chemotherapy can generate substantial anticipatory anxiety because patients may expect nausea, vomiting, fatigue, pain, loss of control, and disruption of family or occupational roles. These reactions are shaped not only by treatment-related physical effects but also by cognitive appraisal, previous experiences, information obtained from others, and the perceived ability to cope. This article presents an expanded brief counselling framework that integrates cognitive-behavioral methods with structured problem solving, self-practice, mindfulness, and acceptance-based strategies. The framework is designed for use before and during chemotherapy and emphasizes realistic cognitive reappraisal rather than simple positive thinking. It also incorporates distress screening, collaborative goal setting, practical coping plans, and referral when symptoms exceed the scope of brief counselling. Contemporary psycho-oncology guidance supports routine assessment of psychological distress and the use of evidence-based psychosocial interventions, including cognitive-behavioral and mindfulness-based approaches. The proposed framework is intended as a clinically practical model rather than as evidence of a newly tested intervention. Future research should evaluate its feasibility, cultural adaptability, and effects on anxiety, psychological flexibility, treatment engagement, and quality of life.

**Keywords:** chemotherapy, anxiety, cognitive-behavioral therapy, mindfulness, acceptance, psychological distress, cancer counselling

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## INTRODUCTION

Cancer diagnosis and treatment can produce psychological distress that includes fear, uncertainty, sadness, sleep disturbance, reduced concentration, and concerns about the future. Distress is increasingly understood as a multidimensional experience involving cognitive, emotional, behavioral, social, spiritual, and physical components. Contemporary oncology guidance therefore recommends systematic identification of patients who need additional psychosocial support (Fann et al., 2026).

Chemotherapy can be particularly anxiety-provoking because patients may anticipate adverse effects before treatment begins. Expectations may be formed through previous treatment, observations of relatives or friends, online information, or stories about severe side effects. For some

patients, these expectations become generalized predictions such as “chemotherapy will certainly make me extremely ill” or “I will not be able to cope.” Such thoughts can intensify autonomic arousal, avoidance, sleep disturbance, and treatment-related fear even before an infusion occurs.

Cognitive Behavioral Therapy (CBT) is relevant because it addresses the reciprocal relationship among thoughts, emotions, physical sensations, and behavior. Current ASCO recommendations identify CBT and related psychosocial interventions as evidence-based options for clinically meaningful anxiety in adults with cancer (Andersen et al., 2023).

A recent meta-analysis also found that CBT was associated with reductions in anxiety and depressive symptoms among patients with advanced cancer, although heterogeneity across studies indicates that delivery format, intensity, and patient

selection remain important (Xia et al., 2024). At the same time, not every cancer-related concern is distorted or irrational. Chemotherapy can involve genuine uncertainty and physical discomfort. Accordingly, counselling should not insist that patients simply replace negative thoughts with positive ones. A more clinically balanced approach combines cognitive reappraisal with coping skills, problem solving, mindfulness, acceptance, and clear pathways for referral. This article proposes such an integrated framework for brief cancer counselling.

This framework also develops ideas from an earlier practice-oriented report in which cognitive-behavioral techniques were described for chemotherapy-related anxiety in a Malaysian cancer patient. The present article broadens that earlier clinical emphasis by integrating contemporary distress screening, mindfulness, acceptance, and updated psycho-oncology evidence (Mustaffa et al., 2012).

### CHEMOTHERAPY-RELATED ANXIETY AND COGNITIVE RESPONSES

Chemotherapy-related anxiety can arise at several points in the treatment trajectory: when chemotherapy is first recommended, while waiting for the first cycle, immediately before an infusion, after experiencing an adverse effect, or when returning for subsequent cycles. Anxiety may also be conditioned by previous unpleasant experiences, so that treatment environments, smells, waiting rooms, or medical equipment become cues that trigger distress.

The intensity of this reaction varies substantially between patients and is influenced by disease status, previous mental-health history, family support, cultural beliefs, perceived

control, symptom burden, and the amount and quality of treatment information.

A useful clinical starting point is to distinguish three interacting elements:

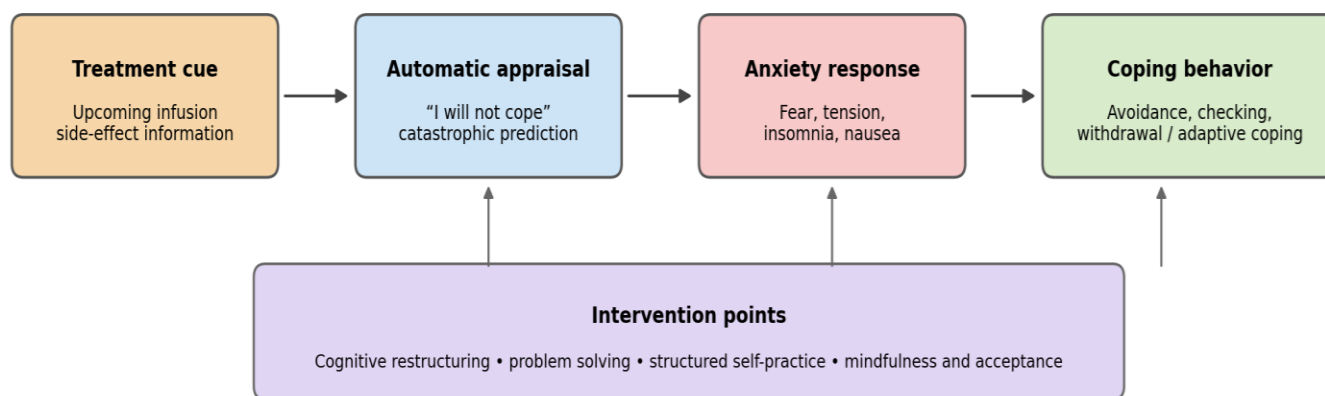
- (1) the objective treatment situation,
- (2) the patient's interpretation of that situation, and
- (3) the behavioral and emotional response.

Two patients receiving comparable treatment may therefore experience very different levels of anxiety because their appraisals and coping resources differ. This principle is central to CBT and remains highly relevant in psycho-oncology.

The cognitive sequence may be represented as:

**Treatment cue → Automatic appraisal →  
Emotional/physical response → Coping behavior**

For example, an upcoming chemotherapy appointment may trigger the thought “I will certainly vomit and lose control,” followed by fear, muscle tension, insomnia, repeated reassurance seeking, or thoughts of postponing treatment. The counselling task is not to promise that nausea will not occur. Instead, the patient is helped to examine probability, severity, coping options, previous evidence, and available medical support. A more balanced appraisal might be: “Nausea can occur, but its severity differs across individuals; preventive medication and coping strategies are available; and I can contact the treatment team if symptoms are difficult to control.”. This sequence and the main intervention points are summarized in Figure 1.



**Figure 1:** Cognitive pathway of chemotherapy-related anxiety and principal intervention points (author's conceptual model).

This distinction between *realistic concern* and *catastrophic prediction* is clinically important. When counselling invalidates realistic concerns, patients may feel misunderstood. When it leaves catastrophic interpretations unexamined, anticipatory anxiety may persist. Effective counselling therefore combines validation with collaborative testing of beliefs. Routine distress screening can strengthen this process. The Distress Thermometer and related brief screening approaches have been widely used in oncology, and

contemporary guidance emphasizes that screening should lead to appropriate assessment and referral rather than function as an isolated measurement (Fann et al., 2026). Earlier validation work also supports the practical value of brief distress screening in cancer care (Ma et al., 2014). Screening is particularly useful when patients minimize symptoms during routine medical consultations or when psychological concerns are overshadowed by physical treatment priorities.

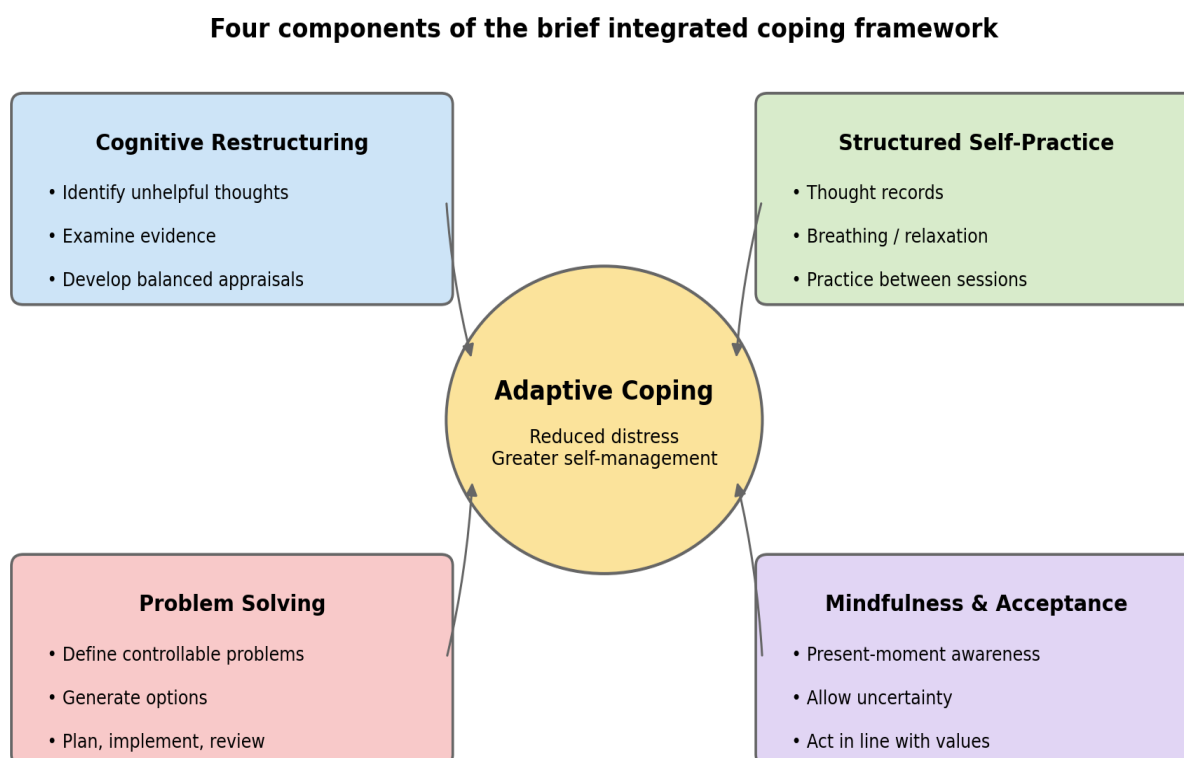
For a brief counselling model, assessment may therefore include the patient's principal fear, the strength of belief in the feared outcome, recent anxiety intensity, sleep and functional interference, avoidance behavior, coping resources, social support, and whether symptoms require more specialized mental-health care. This creates a focused formulation that can be revisited during later chemotherapy cycles.

### BRIEF INTEGRATED COPING FRAMEWORK

The proposed framework contains four interconnected components: cognitive restructuring, structured self-practice, problem solving, and mindfulness/acceptance.

The components are not intended to be applied rigidly. Rather, the counsellor selects and combines them according to the patient's dominant difficulty, level of distress, treatment phase, cultural context, and readiness to engage.

The framework is consistent with contemporary psycho-oncology guidance that supports psychological, behavioral, and mind-body approaches for anxiety and distress in cancer populations (Carlson et al., 2023). The relationship among these four components is summarized in Figure 2.



**Figure 2:** Four components of the brief integrated cognitive-behavioral and mindfulness-based coping framework (author's conceptual model).

### COGNITIVE RESTRUCTURING

Cognitive restructuring begins with identifying specific thoughts that accompany anxiety. General statements such as "I am scared of chemotherapy" are clinically useful but should be explored until the underlying prediction becomes clear. Common examples include fear of uncontrollable vomiting, permanent weakness, inability to care for children, loss of independence, visible changes in appearance, or the belief that severe side effects necessarily indicate treatment failure or worsening disease.

The counsellor can use a sequence of collaborative questions:

- What exactly are you predicting will happen during or after treatment?
- How certain do you feel that this outcome will occur?

- What information supports this prediction, and what information does not?
- Is the prediction based on your own experience, another person's experience, or general information?
- If the feared event occurs, what medical, practical, or emotional support would be available?
- What would be a more balanced statement that recognizes both risk and coping capacity?

The aim is not forced optimism. A useful alternative thought should be believable, specific, and compatible with medical reality. For instance, "I will be completely unable to cope" may become "Treatment may be difficult at times, but I can prepare for likely side effects, use the medication and coping strategies recommended by my team, and ask for help early."

Such restructuring can reduce the degree to which uncertainty is automatically interpreted as catastrophe. Evidence from advanced cancer populations indicates that CBT can reduce anxiety and depressive symptoms, although effects vary across studies and treatment formats (Xia et al., 2024).

For this reason, brief cancer counselling should use cognitive restructuring as one component of care rather than assuming that cognitive techniques alone are sufficient for every patient.

### STRUCTURED SELF-PRACTICE

Skills introduced during counselling are more likely to become useful when patients practice them between sessions. A simple four-column record can be used:

#### Situation – Automatic Thought – Emotion/Body Response – Balanced/Coping Response

The format should remain brief enough to be completed even when the patient is fatigued.

For example, the situation may be “thinking about tomorrow’s chemotherapy”; the automatic thought maybe “I will not tolerate it”; the emotional response may be fear rated 8/10; and the coping response may be “I have tolerated difficult days before, my medical team can treat symptoms, and I will use breathing and distraction during the infusion.” At the next session, the counsellor reviews what happened rather than grading the patient’s performance. This encourages curiosity and learning rather than perfectionism.

Self-practice may also include paced breathing, brief relaxation, guided attention, listening to calming music, reading, walking when medically appropriate, contacting a supportive person, or culturally meaningful spiritual practices. The choice should be individualized. Current integrative oncology guidance supports several nonpharmacologic strategies for anxiety during active cancer treatment, including mindfulness-based interventions and relaxation approaches (Carlson et al., 2023).

A useful principle is to keep homework small and achievable. During chemotherapy, fatigue, cognitive load, and fluctuating symptoms can make complex assignments unrealistic. One five-minute exercise practiced consistently may be more clinically valuable than a lengthy worksheet that the patient never uses.

### STRUCTURED PROBLEM SOLVING

Anxiety is sometimes maintained by concrete unresolved problems rather than by distorted thinking alone. Examples include transportation to the oncology center, uncertainty about childcare, fear of managing nausea at home, difficulty communicating with family members, financial strain, or uncertainty about whom to contact after hours.

In these situations, problem solving converts diffuse worry into a sequence of manageable decisions. A seven-step sequence can be used:

- Identify one specific problem rather than discussing several concerns simultaneously.
- Separate controllable, partly controllable, and uncontrollable aspects.

- Define a realistic short-term goal.
- Generate several possible responses without immediately judging them.
- Compare advantages, disadvantages, feasibility, and required support.
- Select and implement one practical plan.
- Review the outcome and modify the plan during the next contact.

For chemotherapy-related nausea, for example, the goal should not be “I must guarantee that nausea never occurs.” A more realistic goal is “I will prepare a plan for managing nausea if it occurs.” That plan might include discussing antiemetic medication with the oncology team, clarifying food and fluid recommendations, arranging transportation, preparing acceptable foods, using relaxation or distraction, and knowing when to seek medical advice.

Problem solving is also valuable because it restores a sense of agency. Anxiety often expands when the patient experiences the treatment process as completely uncontrollable. Even when the disease or treatment schedule cannot be changed, specific elements of preparation, communication, symptom reporting, and social support can often be organized more effectively.

ASCO guidance includes problem-solving and other structured psychosocial interventions among recommended approaches for clinically relevant anxiety (Andersen et al., 2023).

### MINDFULNESS AND ACCEPTANCE

Some chemotherapy-related experiences cannot be solved immediately. Uncertainty about treatment response, temporary discomfort, waiting for laboratory results, and fear of recurrence may remain despite good information and planning. Mindfulness and acceptance-based approaches are useful when repeated attempts to eliminate all uncertainty become another source of distress.

Mindfulness can be introduced in a nontechnical way: noticing breathing, bodily sensations, and thoughts as present experiences rather than automatically treating them as facts. For example, the statement “Something terrible is going to happen” can be reframed as “I notice that my mind is predicting that something terrible will happen.” This small linguistic shift creates distance between a thought and reality. Acceptance should not be confused with resignation.

In this context, it refers to making room for understandable fear or discomfort while continuing to act in accordance with treatment goals and personal values. Acceptance-based work can therefore complement cognitive restructuring: the patient challenges thoughts that are inaccurate or exaggerated, while learning to tolerate uncertainty that cannot be resolved.

Recent evidence supports the relevance of these methods. A systematic review and meta-analysis of randomized trials found that acceptance and commitment therapy was associated with improvements in anxiety, depression, and psychological flexibility among patients with cancer (Jiang et al., 2024). Mindfulness-focused meta-analyses have likewise reported reductions in anxiety and other negative emotional outcomes,

while also emphasizing substantial heterogeneity across trials (Li et al., 2024); (Reangsing et al., 2025).

These findings support inclusion of mindfulness and acceptance as clinically relevant components, but they do not imply that every patient requires a full formal mindfulness program. In brief counselling, even one- to five-minute practices may serve as an introduction to present-focused coping.

## APPLICATION IN BRIEF CANCER COUNSELLING

The framework can be incorporated into short contacts before chemotherapy and reinforced during subsequent cycles. The first contact should establish rapport, clarify the patient's main concerns, and determine whether brief counselling is appropriate. A concise assessment may include current distress level, previous experience with chemotherapy or other medical procedures, main feared outcomes, coping history, family and social support, sleep, functional interference, and any history of significant anxiety or depression. Screening should be linked to a clear response pathway, consistent with current distress-management standards (Fann et al., 2026).

The counsellor then develops a shared formulation using ordinary language. For example: "When you think about chemotherapy, you remember what happened to your friend. That makes you predict that the same thing will happen to you, which increases fear and makes it hard to sleep. We can work on both the prediction and a practical plan for managing symptoms if they occur." This type of formulation normalizes the process without dismissing the patient's concerns.

A brief session may follow five steps:

1. identify the main trigger,
2. identify the associated prediction,
3. select one coping skill,
4. create one practical plan, and
5. agree on a small self-practice task.

The next session reviews actual experience. If the feared outcome did not occur, this becomes new evidence for cognitive reappraisal. If it did occur, the focus shifts toward what helped, what did not, and what can be adjusted.

The model should also remain culturally responsive. Patients differ in how they understand illness, family responsibility, spirituality, emotional expression, and professional psychological help. The counsellor should therefore ask rather than assume which coping practices are acceptable and meaningful. Family involvement can be useful when the patient wishes it, particularly when relatives strongly influence treatment expectations or practical decisions.

Importantly, brief counselling has limits. Persistent panic, major depressive symptoms, severe functional impairment, suicidal ideation, trauma-related symptoms, complex psychiatric history, or distress that does not improve should prompt comprehensive assessment and referral. ASCO guidance recommends evidence-based psychological treatment for moderate to severe anxiety and recognizes that treatment intensity should correspond to symptom severity and patient needs (Andersen et al., 2023).

Coordination with the oncology team is also essential. Counsellors should not interpret medical symptoms beyond

their scope or advise patients to alter medication or chemotherapy schedules. Psychological support is most effective when it complements, rather than substitutes for, medical symptom management.

## DISCUSSION

Compared with the earlier case-based presentation (Mustaffa et al., 2012), the current formulation is deliberately conceptual and evidence-informed rather than a re-presentation of the original client case. It shifts the emphasis from describing a single counselling sequence to specifying transferable mechanisms, decision points, limits of brief care, and directions for empirical evaluation.

The proposed framework extends a traditional CBT approach by integrating cognitive reappraisal with behavioral self-management, structured problem solving, mindfulness, and acceptance. This is clinically useful because chemotherapy-related anxiety is rarely maintained by one mechanism alone. A patient may simultaneously have an exaggerated prediction, a real practical problem, physiological arousal, and unavoidable uncertainty. Matching the intervention to the maintaining process may therefore be more useful than applying the same technique to every concern.

A second strength is the emphasis on realistic thinking rather than positive thinking. Cancer counselling should not imply that distress results from a failure to remain optimistic. Fear can be understandable and proportional to the circumstances. The therapeutic task is to identify where thinking has become rigid or catastrophic, increase coping options, and help the patient function effectively even when uncertainty remains.

The framework is also compatible with current evidence. ASCO guidance supports CBT and other structured psychosocial interventions for anxiety in cancer survivors and recommends mindfulness-based approaches in selected contexts (Andersen et al., 2023).

Integrative oncology guidance similarly identifies mindfulness-based interventions and relaxation among evidence-supported options for anxiety during active cancer treatment (Carlson et al., 2023). Meta-analytic evidence indicates beneficial effects of CBT in advanced cancer (Xia et al., 2024), mindfulness interventions (Li et al., 2024); (Reangsing et al., 2025), and acceptance-based therapy (Jiang et al., 2024).

However, the evidence should be interpreted carefully. Meta-analyses report heterogeneity in cancer type, intervention duration, therapist contact, outcome measures, and comparator conditions. Therefore, the present article does not claim that the proposed combination has itself been validated as a single standardized protocol. It is a practice-oriented synthesis that should be evaluated empirically before conclusions are made about comparative effectiveness.

Future studies could test the framework using brief validated measures administered before treatment, after several chemotherapy cycles, and at follow-up. Outcomes might include anxiety, global distress, psychological flexibility, treatment-related avoidance, quality of life, satisfaction with counselling, and adherence to agreed medical treatment. Feasibility outcomes such as completion of brief self-practice, session length, and referral rates would also be valuable. Research should additionally examine cultural adaptation. The

original clinical rationale for this approach emerged in a Malaysian counselling context, where family involvement, spirituality, language, and local beliefs may shape treatment-related anxiety and coping. A culturally adapted model should preserve evidence-based psychological principles while allowing patients to select personally meaningful coping practices. This is particularly important in multicultural oncology settings.

## CONCLUSION

Chemotherapy-related anxiety reflects an interaction between anticipated physical effects, cognitive appraisal, emotional arousal, coping behavior, and the patient's broader social and cultural context. A brief counselling model that combines cognitive restructuring, structured self-practice, problem solving, mindfulness, and acceptance can provide a practical way to address these interacting factors without denying the real challenges of cancer treatment. The central clinical aim is

not to eliminate every negative thought or emotion. Rather, it is to help patients distinguish realistic concern from catastrophic prediction, strengthen coping capacity, respond flexibly to uncertainty, and remain engaged with appropriate medical care. Current psycho-oncology guidance and recent systematic evidence support the individual components of this framework, while also indicating the need for careful assessment, referral when distress is severe, and further research on integrated brief interventions (Fann et al., 2026); (Andersen et al., 2023).

Future controlled studies should determine whether the proposed integrated approach improves anxiety, psychological flexibility, quality of life, and treatment engagement across different cancer populations and cultural settings. Until such evidence is available, the framework is best regarded as a structured, evidence-informed counselling model that can guide individualized psychological support before and during chemotherapy.

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