

JPOS/JASCC clinical guidelines for psychological distress in adult cancer patients: a summary of recommendations

Daisuke Fujisawa^{1,*} , Eisho Yoshikawa², Maiko Fujimori³ , Sachiko Arai⁴, Makoto Kobayakawa⁵, Akiko Kurata⁶, Ayako Kayano⁷, Kanako Ichikura⁸, Yuri Igarashi⁹, Hiroyuki Otani¹⁰, Yuko Yanai⁷, Tomoko Baba¹¹, Yoshiro Okajima¹², Akiko Abe¹³, Yu Uneno¹⁴ , Masako Okamura³, Yoshihisa Matsumoto¹⁵ , Kurumi Asaumi¹⁶, Kazuho Hisamura¹⁷, Kanae Momino¹⁸, Emi Takeuchi¹ , Atsushi Sato¹⁹, Noriko Tamura²⁰, Akiko Imai²¹, Ryoichi Sadahiro⁷ , Toru Okuyama²² , on behalf of Japan Psycho-Oncology Society (JPOS) and Japanese Association of Supportive Care in Cancer (JASCC)

¹Division of Quality Assurance Programs, National Cancer Center Institute for Cancer Control, 5-1-1 Tsukiji, Chuo-ku, Tokyo 104-0045, Japan

²Department of Medical Psychology, Nippon Medical School, 1-7-1, Sakaiminami-cho, Musashino-shi, Tokyo 180-0023, Japan

³Division of Survivorship Research, National Cancer Center Institute for Cancer Control, Tokyo 104-0045, Japan

⁴Pharmacy Division, Yokohama City University Hospital, Yokohama 236-0004, Japan

⁵Department of Psychiatry, Hiroshima Red Cross Hospital & Atomic-bomb Survivors Hospital, Hiroshima 730-8619, Japan

⁶Department of Psychiatry, Hiroshima University Hospital, Hiroshima 734-8551, Japan

⁷Department of Psycho-Oncology, National Cancer Center Hospital, Tokyo 104-0045, Japan

⁸Department of Health Science, Kitasato University School of Allied Health Sciences, Sagami-hara 252-0373, Japan

⁹Department of Psychological Counseling, Faculty of Humanities, Tokyo Kasei University, Tokyo 173-8602, Japan

¹⁰Department of Palliative Care Team, and Palliative and Supportive Care, St. Mary's Hospital, Kurume City 830-8543, Japan

¹¹Nursing Department, Jichi Medical University Saitama Medical Center, Saitama 330-8503, Japan

¹²Department of Psychiatry, Jichi Medical University Saitama Medical Center, Saitama 330-8503, Japan

¹³Department of Palliative Medicine, National Cancer Center Hospital, Tokyo 104-0045, Japan

¹⁴Department of Palliative Medicine, Kyoto University Hospital, Kyoto 606-8507, Japan

¹⁵Department of Palliative Therapy, Cancer Institute Hospital of Japanese Foundation for Cancer Research, Tokyo 135-8550, Japan

¹⁶Department of Nursing, School of Health Sciences, Tokyo University of Technology, Tokyo 144-8535, Japan

¹⁷Department of Epidemiology and Public Health, School of Medicine, Kanazawa Medical University, Ishikawa 920-0293, Japan

¹⁸Department of Nursing, Nagoya City University Graduate School of Nursing, Nagoya 467-8601, Japan

¹⁹Department of Medical Oncology, Hirosaki University School of Medicine, Hirosaki 036-8562, Japan

²⁰Department of Neuropsychiatry, Keio University School of Medicine, Tokyo 160-8582, Japan

²¹(Citizen representative: this author does not have an affiliation)

²²Department of Psychiatry / Palliative Care Center, Nagoya City University West Medical Center, Nagoya 462-0057, Japan

*Corresponding author. Division of Quality Assurance Programs, National Cancer Center Institute for Cancer Control, 5-1-1 Tsukiji, 104-0045, Chuo-ku, Tokyo, Japan. E-mail: dfujisaw@ncc.go.jp / dfujisawa@keio.jp

Abstract

Objectives: This article aims to describe the newly developed Japanese practice guidelines for psychological distress of adult individuals with cancer who have elevated levels of psychological distress.

Methods: We conducted systematic reviews and Delphi consensus rounds to determine the levels of certainty of evidence and strength of recommendation.

Results: In our proposed flow of care, all individuals with cancer should initially be provided with general support, comprising supportive communication, detection of psychological distress, attendance to their needs, and differentiating physical conditions that mimic psychological distress. If a patient still has significant psychological distress despite such support, more specific care for psychological distress should be considered. Collaborative care has strong evidence base and is strongly recommended. Evidence for psychotherapy for psychological distress and fear of cancer recurrence is moderate to strong, however, recommendations for these interventions were weakened because of the heterogeneity of interventions and lack of formal training system. Evidence of pharmacotherapy was weak. Thus, anxiolytics are weakly recommended only for short term and should be accompanied with psychosocial support. Antidepressants are weakly recommended when a patient is diagnosed with depression. Early specialized palliative care, care for caregivers and peer support are not recommended as a sole means to alleviate psychological distress, due to the scarce supporting evidence. Provision of these interventions is not hindered when they aim to improve the outcomes other than psychological distress, such as quality of life, symptom burden and self-efficacy.

Received 11 November 2025; accepted 8 December 2025

© The Author(s) 2025. Published by Oxford University Press.

This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact reprints@oup.com for reprints and translation rights for reprints. All other permissions can be obtained through our RightsLink service via the Permissions link on the article page on our site—for further information please contact journals.permissions@oup.com.

Discussion: New practice guidelines for psychological distress of adult individuals with cancer have been developed.

Keywords: anxiety; cancer; care; depression; support

Introduction

Psychological distress, which can be defined as “a multifactorial unpleasant experience of psychological, social, spiritual, and/or physical nature that may interfere with one’s ability to cope effectively with cancer, its physical symptoms, and its treatment” [1], is one of the commonest difficulties that individuals with cancer may experience, regardless of the type and stage of their illnesses. Psychological distress presents itself as a spectrum. At one end there are normal, temporal psychological reactions to the changes of an individual’s life which were brought by cancer and cancer treatments. At the other end there are more persisting and disabling psychological syndromes, some of which correspond to clinical diagnosis of mental disorders such as depression and anxiety disorders.

Several clinical guidelines for psychological distress of individuals with cancer have been published worldwide [1–4]. Guidelines should be updated with latest evidence and should be tailored to adapt to the circumstances where they are used, since the available resource for care varies between countries. The Japan Psycho-Oncology Society (JPOS) and the Japanese Association of Supportive Care in Cancer (JASCC) have been collaboratively developing a series of practice guidelines for psychological issues in patients with cancer [5–7]. The supposed users of the guidelines were all healthcare professionals working with individuals with cancer. In this article, we aim to present a summary of the recommendations of the recently published practice guidelines for psychological distress in individuals with cancer [8], referring to its development process and the background evidence.

Methods

The guidelines were developed in accordance with the 2017 and 2020 Medical Information Network Distribution Service system (Minds) [9]. We formed a multidisciplinary guideline development team, consisting of psychiatrists, palliative care physicians, nurses, an oncologist, a pharmacist, a patient advocate, and an ordinary citizen. The scope of the guidelines was reviewed by a panel of three reviewers, consisting of an oncologist, a nurse, and a patient advocate.

We formulated nine clinical questions (CQs) and conducted systematic reviews for each of them using five electronic databases (PubMed, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, APA Psycinfo and Ichushi-Web). The eligible literature was the following: (i) targeting adult individuals with cancer with significant psychological distress, which was defined as either having been diagnosed with a mental disorder or having scored above the threshold on a standardized evaluation scale for psychological distress, (ii) study designs being either systematic reviews, meta-analyses or randomized controlled trials (RCTs), (iii) addressing relevant care (e.g. antidepressant, psychotherapy, peer support), (iv) published prior to 31st December 2020 and (v) written in English or Japanese. Two members of the team independently reviewed the abstracts as the first-step screening, then, full-texts were reviewed

according to the strict eligibility criteria. Additional articles were identified by hand search.

The guideline development team drafted the recommendations based on the results of the systematic reviews. The certainty of evidence and the strength of the recommendations were graded using the grading system developed by the Minds, based on the concept of the Grading of Recommendations Assessment, Development and Evaluation system (Table 1). The Evidence to Decision framework, in consideration of the balance between benefit and harm, value and preference of targeted patients, cost, and clinical applicability were used to determine the recommendations. Two rounds of Delphi consensus meetings to validate the recommendations were conducted. The Delphi team consisted of representatives of 18 relevant societies, including palliative care physicians, pharmacists, oncologists, home care physicians, psychiatrists, nurses, and patient advocates. Each of the Delphi members evaluated the appropriateness for the strength of recommendations, certainty of evidence and recommendation summaries on a nine-point scale (9: most appropriate, 1: least appropriate) for each CQ. The median score of eight or over and the difference between the highest and lowest rating was five or less are considered reached agreement. The guidelines were finalized after the review by a panel of three reviewers, consisting of an oncologist, a nurse and a patient advocate.

Results

Outline of the guidelines

As described earlier, the levels of psychological distress can be diverse, and in majority cases, psychological distress subsides with minimal support and does not require specific treatments. To cover the whole spectrum of the levels of psychological distress, the guideline development team articulated the recommended flow of care as shown in Fig. 1. All individuals with cancer should initially be provided with general support, which comprises (i) supportive communication, (ii) detection of their psychological distress, (iii) identification of and attendance to their needs, and (iv) differentiating physical conditions that mimic psychological distress. If a patient still has significant psychological distress despite such general support, more specific care for psychological distress should be considered. Significant psychological distress was defined that an individual either has strong feelings of distress or impairment in social, occupational, or other important areas of functioning. We formulated nine CQs covering six areas of care: (i) Pharmacotherapy (CQ1: anxiolytics, CQ2: antidepressants), (ii) Psychotherapy (CQ3), (iii) Multidisciplinary care (CQ4: collaborative care, CQ5: Early specialized palliative care), (iv) Care for caregivers (CQ6), (v) Peer support (CQ7), and (vi) Psychosocial care to alleviate fear of cancer recurrence (FoCR) [CQ8: Psychotherapy, CQ9 (back ground question): other interventions].

Recommendation summary

The summary of recommendations is presented in Table 2. The levels of evidence for each intervention were generally

Table 1. Evidence and recommendation levels.

Strength of recommendations	
1. Strong	The referenced intervention is strongly recommended to be provided (or not to be provided). Its benefit certainly outweighs its harm or burden.
2. Weak	The referenced intervention is weakly recommended (“proposed”) to be provided (or not to be provided). Its benefit may outweigh its harm or burden in certain circumstances.
Certainty of evidence	
A. Strong	The evidence for the referenced intervention is supported by high-quality studies, such as RCTs with concordant results or one or more meta-analysis of RCTs.
B. Moderate	The evidence for the referenced intervention is insufficient, which is partly supported by moderate-quality studies, such as RCTs with inconsistent results, low-quality controlled trials, or high-quality observational trials with consistent results.
C. Weak	The evidence for the referenced intervention is insufficient, which is partly supported by some low-quality studies, such as observational trials with consistent results
D. Very weak	There is scarce evidence for the referenced intervention. For example, there are only observational trials with inconsistent results, case reports, or expert opinions.

RCT: randomized controlled trial

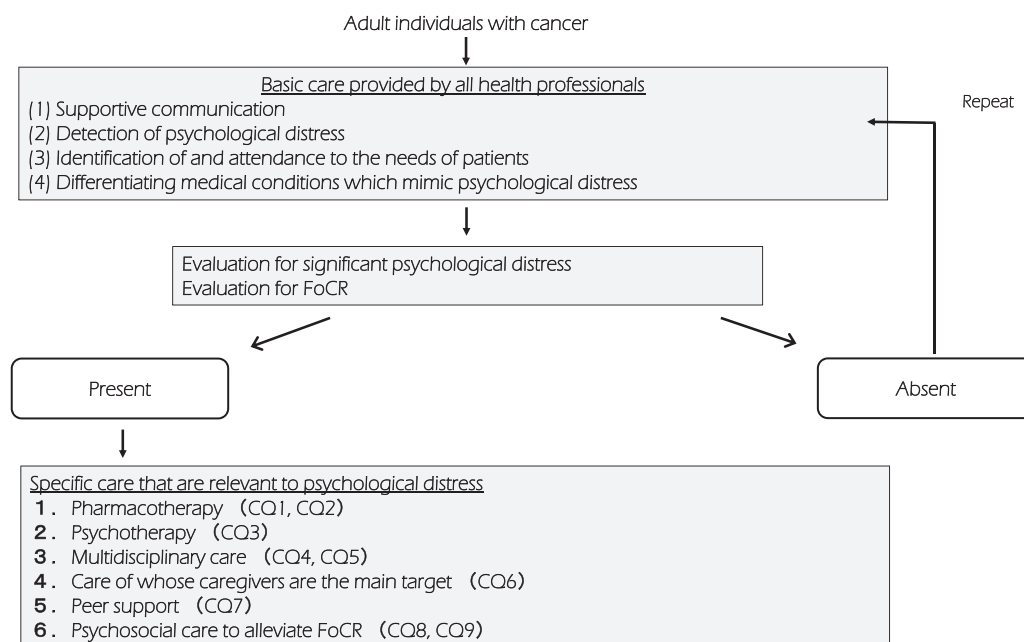


Figure 1. Recommended flow of care: CQ and FoCR.

weak except for psychotherapy (CQ3 and CQ8) and collaborative care (CQ4). Strong recommendation was granted for collaborative care only.

CQ1: Anxiolytics

“Recommendation: Anxiolytics are weakly recommended to alleviate psychological distress in adult individuals with cancer with elevated psychological distress. When using anxiolytics, psychological and/or psychosocial management should also be provided. Long-term use of anxiolytics should be avoided (Strength of recommendation: 2, Evidence level: D).”

Effectiveness of anxiolytics for anxiety and depression has been established outside cancer settings [10, 11]. There are a few categories of drugs, including benzodiazepines, serotonergic anxiolytics, and antihistamine hydroxyzine, all which of we included in our systematic review. The use of benzodiazepines, especially for long-term use, has been warned because of its adverse effects such as sedation, amnesia, and cognitive impairment, and risk of abuse or dependence [12–14].

We identified two systematic reviews and two RCTs on this CQ. All the studies were related to benzodiazepines. Salt *et al.* conducted a systematic review on pharmacotherapy for anxiety in adult patients receiving palliative care and found no study that met the inclusion criteria [15]. Ng *et al.* [16] conducted a systematic review on pharmacotherapy for depression in cancer patients and found only one RCT that used anxiolytics, which was conducted by Holland *et al.* [17]. In this RCT, alprazolam was compared with progressive muscle relaxation (PMR) in a sample of 174 cancer patients with anxiety or depression. The patients who scored above the cutoff on either COVI Anxiety Scale or Raskin Depression Scale were eligible. The alprazolam group showed significantly greater improvement in anxiety and depression compared to PMR group. In the alprazolam group, adverse effects of drowsiness were observed, which lead to interruption of treatment or dose reduction in some patients. Since PMR is a well-established intervention to improve depressive symptoms of patients with cancer [18], alprazolam was considered efficacious in alleviating elevated level of psychological distress in patients with cancer. Wald *et al.* conducted a double-blind,

Table 2. Summary of recommendations.

Interventions	Recommendation	Certainty of evidence
CQ1: Anxiolytics	2 (weak)	D (very weak)
CQ2: Antidepressants	2 (weak)	C (weak)
CQ3: Psychotherapy	2 (weak)	B (moderate)
CQ4: Collaborative care	1 (strong)	A (strong)
CQ5: Early specialized palliative care	2 (weak, against)	D (very weak)
CQ6: Psychosocial intervention for caregivers (with intention to alleviate psychological distress of a patient)	2 (weak, against)	D (very weak)
CQ7: Peer support	2 (weak, against)	D (very weak)
CQ8: Psychotherapy for fear of cancer recurrence	2 (weak)	A (strong)
CQ9: Other psychosocial care for fear of cancer recurrence	N/A	N/A
	(back ground question)	(back ground question)

N/A: not applicable

placebo-controlled RCT to evaluate the efficacy of alprazolam in a sample of 36 cancer patients who met the DSM-III criteria of general anxiety disorder, panic disorder, or adjustment disorder with anxiety. Both alprazolam and placebo significantly improved the level of anxiety and depression, but there was no significant difference between the groups. Transient drowsiness and fatigue were observed in the alprazolam group [19].

In summary, there was only very weak evidence to support the use of anxiolytics for patients with cancer, with possible harm due to their adverse effects. We took the evidence outside cancer settings into consideration. Finally, we weakly recommended the use of anxiolytics, with a warning for their possible adverse effects, especially for the long-term use.

CQ2: Antidepressants

“Recommendation: Antidepressants are weakly recommended to alleviate psychological distress in adult individuals with cancer with elevated psychological distress, if the patient is diagnosed with major depression (Strength of recommendation: 2, Evidence level: C).”

Antidepressants are one of the standard treatments for depression and anxiety disorders outside cancer settings [20, 21]. We identified two systematic reviews [22, 23] and six RCTs [24–29], which compared antidepressants and placebo. Costa *et al.* conducted an RCT of 73 women with breast or gynecological cancer who were diagnosed with major depression [24]. The patients were randomly assigned to mianserin or placebo for 4 weeks. Significant improvement was observed in mianserin group on the total score of the 17-item Hamilton Rating Scale for Depression (HAM-D), compared with placebo. Heeringen and Zivkov randomly assigned 55 depressed women with breast cancer (stage I or II) to either mianserin or placebo for 6 weeks [25]. The patients in the mianserin group experienced significantly greater decrease in the score of the 21-item HAM-D, with larger number of treatment responders (more than 50% improvement). Razavi *et al.* randomly assigned 91 female cancer patients with major depression or adjustment disorder with depressed mood to fluoxetine or placebo for 5 weeks [26]. There was no significant between-group difference in the total score of the Montgomery and Asberg Depression Scale (MADRS) and the Hospital Anxiety and Depression Scale (HADS). Musselman *et al.* randomly assigned 35 female ambulatory breast cancer patients with major depression or adjustment disorder with depressed mood to three groups (paroxetine, desipramine or

placebo) for 6 weeks [27]. There was no significant between-group difference either in the mean changes of the 21-item HAM-D score or in the proportion of treatment responders, who were defined as a total score of 7 or below on the 21-item HAM-D score. Navari *et al.* randomly assigned 180 mildly depressed women with newly diagnosed breast cancer (stage I or II) to fluoxetine or placebo for 6 months [28]. Depressive symptoms were assessed by the two-question screening. Larger proportion of patients experienced statistically significant increase in quality of life (QOL), which was measured by the Functional Assessment of Cancer Therapy-General in fluoxetine group. Also, the proportion of patients who experienced statistically significant decrease in depression (measured by the Zung Self-rating Depression Scale: SDS) was larger in the fluoxetine group. However, the definition of improvement was not documented, and precise data were not presented. Fisch *et al.* randomly assigned mildly depressed patients with advanced solid tumor with expected survival between 3 and 24 months to either fluoxetine ($n = 83$) or placebo ($n = 80$) for 12 weeks [29]. Although the total score of SDS was lower in fluoxetine group, clinically meaningful difference was not archived.

Ostuzzi *et al.* conducted a systematic review of studies on antidepressants for the treatment of depression in cancer patients [22]. This systematic review included the six above-mentioned RCTs, two additional RCTs comparing antidepressants with other antidepressants, and two unpublished studies. There was no statistically significant difference between antidepressants and placebo, with a standardized mean difference (SMD) of -0.45 [95% confidence interval (CI) -1.01 to 0.11]. Beevers *et al.* conducted a systematic review of pharmacological treatments of depression in people with a primary brain tumor, which retrieved no eligible studies [23].

In summary, supportive evidence for the use of antidepressants for psychological distress in cancer patients was limited to patients who are diagnosed with major depression. Therefore, we concluded that antidepressants deserve weak recommendations only for adult cancer patients who are diagnosed with depression.

CQ3: Psychotherapy

“Recommendations: Psychotherapy is weakly recommended to alleviate psychological distress of adult individuals with cancer with elevated psychological distress (Strength of recommendation: 2, Evidence level: B).”

Psychotherapy is an established treatment for depression and anxiety outside cancer settings [20, 21]. We identified

26 RCTs on this CQ. The most common type of cancer among the study participants was breast cancer (11 studies). The participants were at various stages of cancer, with two studies including terminal cancer patients. Cognitive Behavioral Therapy [30–37] and related psychotherapies were the most common type of psychotherapy (17 studies), including five mindfulness-based intervention studies (Mindfulness-based Cancer Recovery [38, 39] and Mindfulness-based Cognitive Therapy [40–42]), Acceptance and Commitment Therapy [43–45], and Behavioral Activation [43, 45]. Other studies included two Supportive Psychotherapy, one Supportive-Expressive Group Therapy, one Narrative Therapy, one Positive Psychotherapy, one Meaning-centered Psychotherapy, one Short-term Psychodynamic Psychotherapy, one Reminiscence Therapy, and one Cancer and Aging: Reflections for Elders (CARE program). Ten studies addressed group therapy, and eight studies addressed telephone or internet-based interventions.

Twenty-one studies evaluated depression as a treatment outcome [30–32, 34–36, 40, 43–56], which was measured with Structured Clinical Interview for DSM-IV, Beck Depression Inventory, Center for Epidemiologic Studies Depression Scale, HAM-D, HADS—Depression subscale (HADS-D), MADRS, SDS, and Patient Health Questionnaire-9 (PHQ-9). Among them, 16 studies yielded positive results [30–32, 34, 40, 43, 45–54]. Eleven studies evaluated anxiety [30–32, 35, 40, 43, 44, 46–49, 51–53, 55], which was measured with Clinical Global Impression, Generalized Anxiety Disorder Scale, Hamilton Anxiety Scale, HADS—anxiety subscale, and Zung Self-Rating Anxiety Scale. Among them, 11 studies yielded positive results [31, 35, 40, 43, 46–49, 52, 53, 55]. Nine studies evaluated general psychological distress [38–41, 45, 47, 48, 51, 53], which was measured with HADS total score, Distress Thermometer, and Profile of Mood States. Eight studies yielded positive outcomes [38, 40, 41, 45, 47, 48, 51, 53].

Lack of sufficient qualified therapists downgraded the strength of recommendation, despite the moderate certainty of evidence in psychotherapy. First, clinical psychologists, who are supposed to be main providers of psychotherapy, are understaffed in Japanese cancer settings; only two-thirds of the designated cancer centers and one-third of general hospitals are staffed with full-time psychologists [57]. Second, under the Japanese national health insurance system, psychotherapy is reimbursed only when it is conducted by psychiatrists, and not by psychologists. Third, training system for psychotherapy for patients with cancer has yet been established.

CQ4: Collaborative care

“Recommendations: Collaborative care is strongly recommended to alleviate psychological distress of adult individuals with cancer elevated psychological distress (Strength of recommendation: 1, Evidence level: A).”

Collaborative care interventions are multicomponent strategies characterized by active collaboration between specialist and primary care providers, which is assisted by a case manager, and typically includes measurement-based care. Their effectiveness has been widely known for depression, anxiety, and comorbid physical conditions [58–61]. Also promising results have been shown in oncology settings [62].

We identified seven RCTs [63–69], all of which were compiled in two systematic reviews [70, 71]. We presented

a summary of the referenced studies in Table 3. A typical collaborative care program was a manualized care provided by trained nurses, social workers, or clinical psychologists, and included educational sessions, problem-solving psychotherapy and/or behavioral activation, and pharmacotherapy (either medication-adherence support or prescription by primary care physicians or oncologists), under the supervision of psychiatrists. Interventions were provided typically on face-to-face basis, with a few studies using an automated symptom monitoring system through telephone or the internet. Collaborative care consistently showed greater improvement in depression and QOL compared to treatment as usual. The SMDs for the severity of depression comparing collaborative care and the control were -0.58 (95% CI: -0.91 to -0.25 , $P = .0007$), -0.53 (-0.85 to -0.20 , $P = .001$), and -0.49 (-0.81 to -0.16 , $P = .003$) at 3, 6, and 12 months, respectively [70].

Although collaborative care is not common in Japanese oncology practice, we considered that it is implementable with the currently available human resource in Japanese medical settings. For example, almost all the designated cancer centers in Japan are staffed with certified nurse specialists and/or clinical psychologists. They have the potential to serve as case managers, under supervision by psychiatrists (either full-time or part-time) in the collaborative care model. Therefore, in the current guidelines, we decided to strongly recommend collaborative care.

CQ5: Early specialized palliative care

“Recommendations: Early specialized palliative care (ESPC) is recommended for all the adult individuals with cancer with an aim to reduce their symptom burden and to increase their QOL, however, for cancer patients with elevated psychological distress, ESPC alone is not recommended as a sole means to alleviate their psychological distress due to lack of relevant evidence. Other interventions with stronger recommendations should be provided along with ESPC (Strength of recommendation: 2, Evidence level: D).”

Vast evidence supports the benefit of ESPC in improving the QOL of patients with cancer. A recent practice guideline on palliative care states that “Oncology clinicians should refer patients with advanced solid tumors and hematologic malignancies to specialized interdisciplinary palliative care teams that provide outpatient and inpatient care beginning early in the course of the disease, alongside active treatment of their cancer” [72]. In the current CQ, we defined ESPC as “providing comprehensive care (care for physical, psychological, social, and existential distress) through specialized palliative care services from an early stage to patients with incurable (advanced or recurrent) cancer”. We examined the effectiveness of ESPC to alleviate psychological distress in cancer patients with elevated psychological distress.

Our systematic literature search retrieved only one study by Woo *et al.* [73]. In this study, cancer patients with elevated pain or depression were eligible; however, only minority (27%) of the sample were enrolled in the study because of depression. Therefore, we excluded this study, resulting in no eligible study for the CQ.

We conducted a supplemental literature review to collect RCTs, which did not include the level of psychological distress as patients' eligibility. Twenty RCTs were found, 16 of which contained depression as an outcome. Only three studies of them showed statistically significant improvement compared

Table 3. Randomized controlled trials of collaborative care.

Author (publication year)	Patients	Intervention	Control	Outcomes	Major findings
Dwight-Johnson M, <i>et al.</i> (2005) [64]	Female, breast or cervical cancer within 3 months of diagnosis. MDD, dysthymic disorder, or persistent depressive symptoms over 1 month	Manualized care provided by social workers who were trained in the care of cancer and depression, with the supervision by psychiatrists. Educational sessions followed by PST (weekly for 8 weeks) or pharmacotherapy by oncologists (consultation for psychiatrist available). 8 months N = 28	TAU N = 27	Depression (PHQ), Emotional wellbeing (FACT) at 4 and 8 months	Greater 50% improvement in depression ($P = .03$) and better emotional well-being ($P = .03$) in intervention group. Higher mortality in control group ($P = .002$).
Strong V, <i>et al.</i> (2008) [67]	Mixed cancer patients with prognosis of at least 6 months. MDD and SCL-20 score ≥ 1.75	Care provided by nurses under the supervision by psychiatrists (psychoeducation and PST), pharmacotherapy by primary care physicians 3-months intervention with subsequent monthly follow-up N = 101	TAU N = 99	Depression (SCL-20), Anxiety (SCL10), QOL (EORTC-QLQ C30) at 3, 6, 12 months	Lower depression ($P = .002$), higher 50% improvement ($P = .008$) in intervention group at 3 months, persistent in 6 and 12 months.
Fann JR, <i>et al.</i> (2009) [68]	Mixed cancer, aged 60 or over. MDD of dysthymic disorder (DSM-IV)	IMPACT intervention: depression management by nurses or clinical psychologists under the supervision by psychiatrists (medical review, psychoeducation, behavioral activation, support for treatment decision-making)) and optional PST and pharmacotherapy 12 months at maximum N = 112	TAU N = 103	Depression (SCL-20), QOL (numeric scale) at 3, 6, 12, 18, 24 months	Better 50% improvement rate in depression ($P = .03$, $P = .03$, at 6 and 12 months, respectively), higher remission in depression at 12 months ($P = .03$), more depression-free days ($P < .001$) and better QOL ($P = .04$) in intervention group.
Ell K, <i>et al.</i> (2008) [65]	Hispanic female aged 18 or over. Diagnosis of cancer in over 90 days before. Presence of at least one core depressive symptoms for more than one day in 2 days	Care provided by social workers under the supervision by psychiatrists (weekly PST for 6–12 weeks) and/or pharmacotherapy by psychiatrists 12 month N = 242	TAU N = 230	Depression (PHQ-9), QOL (FACT, SF-12) at 6 and 12 months	Better 50% improvement rate ($P = .01$), and higher 5-point reduction rate ($P = .02$) on PHQ-9 at 12 months in intervention group. Better physical, functional and mental wellbeing at 6 months, better physical, social/familial, emotional and functional wellbeing at 12 months. Better improvement in depression throughout 12 months ($P = .001$) in intervention group
Kroenke K, <i>et al.</i> (2010) [69]	Mixed cancer Depressive mood or anhedonic, with PHQ-9 of 10 or over	Telephone calls by nurse care managers under supervision by psychiatrists at 1, 4 and 12 weeks, automated monitoring system on telephone or website and prescription-prompts to oncologists N = 154	TAU N = 155	Depression (HSCL-20) at 1, 3, 6 and 12 months	Better improvement in depression throughout 12 months ($P = .001$) in intervention group
Sharpe M, <i>et al.</i> (2014) [66]	Mixed cancer, aged 18 or over MDD for 4 weeks or over	Manualized care provided by nurses under the supervision by psychiatrists (symptom monitoring, PST and/or behavioral activation), pharmacotherapy by primary care physicians N = 253	TAU N = 247	Depression (SCL-20), QOL (EORTC-QLQ-C30) at 12, 24, 36 and 48 weeks	Better 50% improvement rate in depression at 24 week ($P < .0001$), better QOL throughout study period ($P < .05$), lower depression anxiety, pain and fatigue severity in intervention group (all $P < .05$).
Walker J, <i>et al.</i> (2014) [63]	Lung cancer with prognosis over 3 months, aged 18 or over, MDD for 4 weeks or over	Manualized care provided by nurses under the supervision by psychiatrists (symptom monitoring, PST and/or behavioral activation), pharmacotherapy by primary care physicians N = 68	TAU N = 74	Depression (SCL-20), QOL (EORTC-QLQ-C30)	Lower depression ($P = .0003$), higher QOL ($P = .018$) in intervention group

DSM: diagnostic and statistical manual by American Psychiatric Association, FACT: Functional Assessment of Cancer Therapy, HSCL: Hopkins symptom checklist, MDD: major depressive disorder, PHQ: Patient Health Questionnaire, PST: problem solving therapy, QOL: Quality of life, SF: Short form QOL instrument, TAU: treatment as usual

to control arms [74–76]. Twelve studies contained anxiety as an outcome, of which only one study showed statistically significant improvement [76]. Three studies contained psychological distress as an outcome, of which no study showed statistically significant improvement in the intervention group. In one study, the control group outperformed the interventional arm with trend-level significance [77].

We concluded that there is no sufficient evidence to support the ESPC to alleviate psychological distress of patients with elevated psychological distress, thus we determined not to recommend ESPC as a sole approach for this purpose. However, we emphasize that this recommendation does not preclude the provision of ESPC for other purposes, such as improving QOL, alleviating symptoms, and supporting decision-making in cancer treatment.

CQ6: Psychosocial interventions for the caregivers

“Recommendations: Psychosocial interventions for caregivers alone (either an intervention involving both patients and caregivers or an intervention involving caregivers only) are not recommended to alleviate psychological distress of adult individuals with cancer with elevated psychological distress. Other interventions with stronger recommendations should be provided along with psychosocial interventions for caregivers. Provision of psychosocial interventions for caregivers is not precluded when they are intended to improve outcomes in caregivers, such as to alleviate their psychological distress, to increase their QOL, and to improve family relationship (Strength of recommendation: 2, Evidence level: D).”

In the current CQ, we examined whether psychosocial interventions for the caregivers of cancer patients are effective in alleviating the level of psychological distress of patients themselves. This question was articulated since interventions for family caregivers have been known to alleviate the level of patients' psychological symptoms in general psychiatric settings [78].

We found one RCT by Manne *et al.* [79]. In this three-arm study, Intimacy-enhancing Therapy (an intervention to raise mutual understanding and emotional intimacy between a couple), General-Health-and-Wellness intervention (an intervention to promote healthy lifestyle), and usual care were compared in 237 patients with localized prostate cancer who scored 16 or higher on the Impact of Events Scale (IES) and their partners who scored 17 or higher on the IES. The measured outcomes were general psychological adjustment (Mental Health Inventory-38: MHI-38) and depression (PHQ-9). After the intervention, the total scores of MHI-38 and PHQ-9 improved in all three groups, but there were no descriptions on between-group differences. We found no RCT on interventions for caregivers that involved caregivers only pertaining to this CQ.

We concluded that there is no supporting evidence for psychosocial interventions for the caregivers of cancer patients to alleviate psychological distress of patients themselves, thus we determined not to recommend the intervention as a sole approach for this purpose. However, provision of psychosocial interventions for caregivers is not precluded when they are intended to improve outcomes in caregivers, such as to alleviate their psychological distress, to increase their QOL, and to improve family relationship.

CQ7: Peer support

“Peer support alone is not recommended to alleviate psychological distress of adult individuals with cancer with elevated psychological distress. Other interventions with stronger recommendations should be provided along with peer support. Provision of peer support is not precluded when it is intended to improve other outcomes such as self-efficacy and adaptation to cancer (Strength of recommendation: 2, Evidence level: D).”

Peer support groups are voluntary associations of individuals with the same disease or condition arranged at various local or regional levels of organization. These groups meet to share their experience and concerns, and to support each other in coping with illness. Information and support provided by peers (cancer survivors) based on their own experience could be helpful for patients, especially those who are at an earlier stage of treatment or recovery [80, 81].

In the current systematic review, we defined peer support as an intervention in which (i) cancer survivors (“peers”) are the main actors, (ii) health professionals do not meet patients directly, and (iii) mutual interaction of cancer patients is the main intervention. The method of interaction can be diverse (e.g. face-to-face, telephone, e-mail, or video conference). We identified a single RCT by Lee *et al.* [82]. In this RCT, newly diagnosed stage I–III breast cancer patients with the total score of HADS of eight or over were randomized to peer support ($n = 64$) or to usual care ($n = 65$). A trained “peer-support partner” provided weekly emotional support (face-to-face or by telephone) to patients for 6 weeks. The program was designed to improve self-efficacy, and it did improve self-efficacy compared with the control group. However, no significant between-group difference was observed in depression or anxiety [83, 84].

We conducted a supplemental literature review to collect RCTs that did not include the level of psychological distress as patients' eligibility. We found twelve RCTs. Among these RCTs, two trials conducted subgroup analyses for samples with elevated psychological distress, but the results of these subgroup analyses were inconsistent [85, 86]. In the remaining 10 studies, 10 studies evaluated depression, of which only two studies showed significant improvement [85, 86]. In one study, the control group showed greater improvement than the intervention group [87]. The remaining seven studies yielded no between-group difference. Three studies evaluated anxiety [88–90], of which only one study demonstrated significant reduction in anxiety [88]. Three studies evaluated general psychological distress [84, 87, 91], of which one study demonstrated significant between-group difference, where the intervention group experienced worsening of symptoms [91].

In summary, we found no solid evidence to support the benefits of peer support interventions for alleviating psychological distress in cancer patients, especially for those with elevated psychological distress. However, it is noted that the aims of peer support are not limited to improving psychological distress. It can be provided to improve participants' self-efficacy, health-related behaviors (e.g. physical activity, dietary habits, medication, and treatment adherence), social support, coping, and QOL [92, 93]. Our recommendation would not preclude provision of peer support for such purposes.

CQ8: Psychotherapy for fear of cancer recurrence

“Recommendation: Psychotherapy for the fear of cancer recurrence is weakly recommend for adult individuals with cancer with the fear of cancer recurrence (Strength of recommendation: 2, Evidence level: A).”

FoCR is excessive worry on the progression or recurrence of one's cancer, to an extent that it impedes one's daily functioning. Many rating scales to measure the level of FoCR have been developed, however, there has been no established threshold to define clinically significant FoCR. Therefore, we did not include a threshold as an eligibility for our systematic review.

A preliminary search identified a systematic review conducted by Tauber *et al.* [94]. We adopted the same search strategy as Tauber's and collected the RCTs that were reported after their work (published between July 2018 and December 2020). We integrated newly obtained literature with the literature in Tauber's review to conduct a new systematic review.

A total of 35 studies, including 14 studies which is additional to Tauber's review [40, 41, 44, 95–104], were identified. A meta-analysis of controlled studies demonstrated that the effect size for psychotherapies for FoCR was moderate (SMD -0.53 [95% CI $-0.78, -0.28$]). However, heterogeneity was as high as 88%, which corresponded to the moderate risk. Most studies involved patients with breast cancer. Most-commonly used interventions were Cognitive Behavioral Therapy [47, 95–97, 99, 105–109], mindfulness-based interventions [40, 41, 100, 101, 110–116], and Acceptance and Commitment Therapy [44, 102, 117, 118]. A notable intervention that specifically targeted FoCR was the Conquer Fear, a five-session program based on metacognition models such as the Common-Sense Model and the Self-Regulatory Executive Function Model [117, 118]. Its effectiveness persisted for more than 6 months post-intervention.

Two studies had been conducted in Japan. Park *et al.* conducted an RCT, which compared an 8-week Mindfulness-based Cognitive Therapy intervention and the wait-list control in 74 patients with breast cancer. Statistically significant reduction in FoCR was observed in the intervention group, and its effectiveness persisted for 4 weeks after the intervention [40]. Akechi *et al.* compared problem solving therapy which comprised four face-to-face and telephone sessions tailored to the needs of breast cancer patients ($N = 31$) with the wait-list control ($N = 28$). The study did not yield significant between-group difference [95].

Considering the high heterogeneity of the studies, and the lack of therapists who were expertise in each psychotherapy, we concluded that psychotherapy should be weakly recommended for FoCR. This high heterogeneity might be due to variations in underlying models, techniques, and intervention durations, necessitating further investigation into the differential effects of various intervention methods.

CQ9: Non-psychological interventions for fear of cancer recurrence

We searched interventions other than psychological therapy that targeted FoCR. We used the same search terms as other CQs (such as “pharmacotherapy”, “collaborative care”, “early palliative care”, and “peer support”) substituting the outcomes with FoCR. We articulated this issue as a background question, since the type of interventions were supposed to be diverse.

The following three studies were found. Crane-Okada *et al.* conducted an RCT on mindfulness-based movement [119]. This study involved older breast cancer patients who engaged in a mindfulness-based movement program with weekly 2-hour sessions over 12 weeks. The program significantly reduced FoCR compared to the control group, with its effects lasting up to 18 weeks post-intervention. Damude *et al.* conducted an RCT to reduce the frequency of medical follow-up [120]. This study was a non-inferiority trial in melanoma patients where traditional quarterly follow-ups were compared with fewer follow-up visits (1–3 times per year). No significant between-group difference was found, indicating that reduced follow-up does not worsen FoCR. Another study by Sheppard *et al.* tested reduction of frequency of medical follow-ups [121]. This RCT involved breast cancer patients, comparing no regular follow-up visits with monthly visits. No significant difference in FoCR was observed, suggesting that reduced follow-up frequency does not exacerbate FoCR.

Discussion

In the current article, we presented an overview of a newly-developed practice guidelines for psychological distress of individuals with cancer. Every individual should first be provided with “general” supportive care by primary health professionals, which includes supportive communication, attention to their needs, differentiation of medical conditions that mimic psychological symptoms, and monitoring for serious psychological distress that requires further specialized care. For those with elevated psychological distress despite such care, evidence-based interventions that are more specific to psychological distress should be provided. Collaborative care was the only intervention that was granted with strong recommendation due to its solid supporting evidence. Evidence for psychotherapies for psychological distress and for FoCR was also solid; however, due to the high heterogeneity of referenced studies and lack of qualified therapists, recommendations for psychotherapy were weakened. Evidence for pharmacotherapy (anxiolytics and antidepressants) was weak for psychological distress of patients with cancer, despite its established evidence outside cancer settings. Thus, its indication should be considered elaborately referring to patient conditions. We barely found supporting evidence for ESPC, psychological interventions targeting caregivers, and peer support in alleviating psychological distress of cancer patients with elevated psychological distress. Therefore, these interventions should not be provided as a sole means to alleviate psychological distress, despite that we do not preclude these interventions to be provided as to improve other relevant outcomes.

Our next steps include implementing the recommended flow of patient care and recommended interventions. Implementing care delivery based on collaborative care models and establishing a training system for evidence-based psychotherapies for individuals with cancer are urgently needed.

Some of the areas that the current guideline is yet to cover include the following. First, we didn't collect evidence for the interventions targeting individuals whose psychological distress level is below thresholds. Second, choice of appropriate interventions that suit each of the individuals depending on his/her physical condition, cancer treatment status and characteristics of psychological distress is needed. These issues are potential candidates for future CQs.

We believe that our newly developed guidelines will contribute to the dissemination of evidence-based care and management of psychological distress of adult individuals with cancer in Japan.

Acknowledgements

The authors deeply appreciate the late Mr. Yohei Nishiguchi, a past member of our team, for his contribution to articulating the scope of the guidelines. The authors express gratitude to the members of the governing committee (Drs. Tatsu Akechi, Masatoshi Inagaki, Yosuke Uchitomi and Kazuhiro Yoshiuchi) and other relevant committees of the guidelines.

Author contributions

Conceptualization: all authors. Drafting recommendations: all authors. Systematic review (ES, SA, MK, AK, KI, YI, HO, YY, TB, YO, AA, YU, YM, KA, MO, KH, KM, ET). Drafting manuscript (DE, ES, SA, MK, AK, KI, YI, HO, YY, TB, YO, AA, YU, YM, KA, MO, KH, KM, ET). All authors reviewed and approved the manuscript.

Conflict of interest statement

None.

Funding

The guideline development was partly supported by the Grant-in-aid by the Ministry of Health Labor and Welfare Japan (Grant number: 202208011C).

Data availability

Not applicable.

References

1. National Comprehensive Cancer Network. *Distress Management*: NCCN. 2025. <https://www.nccn.org/> (25 December 2025, date last accessed).
2. Andersen BL, Lacchetti C, Ashing K. *et al.* Management of Anxiety and Depression in adult survivors of cancer: ASCO guideline update. *J Clin Oncol* 2023;41:3426–53. <https://doi.org/10.1200/JCO.23.00293>.
3. Grassi L, Caruso R, Riba MB. *et al.* Anxiety and depression in adult cancer patients: ESMO clinical practice guideline. *ESMO Open* 2023;8:101155. <https://doi.org/10.1016/j.esmoop.2023.101155>.
4. Howell D, Keshavarz H, Esplen M. *et al.* A pan Canadian practice guideline: Screening, assessment and Care of Psychosocial Distress, depression, and anxiety in adults with cancer. In: *Toronto: Canadian Partnership Against Cancer and the Canadian Association of Psychosocial Oncology*. 2015. <https://www.capo.ca/guidelines> (25 December 2025, date last accessed).
5. Matsuda Y, Tanimukai H, Inoue S. *et al.* JPOS/JASCC clinical guidelines for delirium in adult cancer patients: a summary of recommendation statements. *Jpn J Clin Oncol* 2020;50:586–93. <https://doi.org/10.1093/jjco/hyaa003>.
6. Matsuda Y, Tanimukai H, Inoue S. *et al.* A revision of JPOS/JASCC clinical guidelines for delirium in adult cancer patients: a summary of recommendation statements. *Jpn J Clin Oncol* 2023;53:808–22. <https://doi.org/10.1093/jjco/hyad042>.
7. Cancer JP-OSaJAoSci. *Clinical Guidelines for Communication in Cancer Practice*. Tokyo: Kanehara publishing, 2023.
8. Japan Psycho-Oncology Society, Japanese Association of Supportive Care in Cancer. *Clinical Guidelines for Psychological Distress of Patients with Cancer*. Tokyo: Kanehara publishing, 2024.
9. Minds Manual Developing Committee ed. *Minds Manual for Guideline Development 2020 ver. 3.0*. Tokyo: Japan Council for Quality Health Care, 2021.
10. Benasi G, Guidi J, Offidani E. *et al.* Benzodiazepines as a monotherapy in depressive disorders: a systematic review. *Psychother Psychosom* 2018;87:65–74. <https://doi.org/10.1159/000486696>.
11. van Marwijk H, Allick G, Wegman F. *et al.* Alprazolam for depression. *Cochrane Database Syst Rev* 2012;2012:CD007139. <https://doi.org/10.1002/14651858.CD007139.pub2>.
12. Slee A, Nazareth I, Bondaronek P. *et al.* Pharmacological treatments for generalised anxiety disorder: a systematic review and network meta-analysis. *Lancet* 2019;393:768–77. [https://doi.org/10.1016/S0140-6736\(18\)31793-8](https://doi.org/10.1016/S0140-6736(18)31793-8).
13. Williams T, Hattingh CJ, Kariuki CM. *et al.* Pharmacotherapy for social anxiety disorder (SAnD). *Cochrane Database Syst Rev* 2017;10:CD001206. <https://doi.org/10.1002/14651858.CD001206.pub3>.
14. Chawla N, Anothaisintawee T, Charoenrungrueangchai K. *et al.* Drug treatment for panic disorder with or without agoraphobia: systematic review and network meta-analysis of randomised controlled trials. *BMJ* 2022;376:e066084. <https://doi.org/10.1136/bmj-2021-066084>.
15. Salt S, Mulvaney CA, Preston NJ. Drug therapy for symptoms associated with anxiety in adult palliative care patients. *Cochrane Database Syst Rev* 2017;5:CD004596. <https://doi.org/10.1002/14651858.CD004596.pub3>.
16. Ng CG, Boks MP, Zainal NZ, de Wit NJ. The prevalence and pharmacotherapy of depression in cancer patients. *J Affect Disord* 2011;131:1–7. <https://doi.org/10.1016/j.jad.2010.07.034>.
17. Holland JC, Morrow GR, Schmale A. *et al.* A randomized clinical trial of alprazolam versus progressive muscle relaxation in cancer patients with anxiety and depressive symptoms. *J Clin Oncol* 1991;9:1004–11. <https://doi.org/10.1200/JCO.1991.9.6.1004>.
18. Jorm AF, Morgan AJ, Hetrick SE, Cochrane Common Mental Disorders Group. Relaxation for depression. *Cochrane Database Syst Rev* 2008;CD007142. <https://doi.org/10.1002/14651858.CD007142.pub2>.
19. Wald TG, Kathol RG, Noyes R. *et al.* Rapid relief of anxiety in cancer patients with both alprazolam and placebo. *Psychosomatics* 1993;34:324–32. [https://doi.org/10.1016/S0033-3182\(93\)71866-6](https://doi.org/10.1016/S0033-3182(93)71866-6).
20. Qaseem A, Owens DK, Etzeandia-Ikobaltzeta I. *et al.* Nonpharmacologic and pharmacologic treatments of adults in the acute phase of major depressive disorder: a living clinical guideline from the American College of Physicians (version 1, update alert 2). *Ann Intern Med* 2024;177:e2400593. <https://doi.org/10.7326/A24NNALS-24-00593>.
21. Lam RW, Kennedy SH, Adams C. *et al.* Canadian network for mood and anxiety treatments (CANMAT) 2023 update on clinical guidelines for Management of Major Depressive Disorder in adults: Réseau canadien pour les traitements de l'humeur et de l'anxiété (CANMAT) 2023 : Mise à jour des lignes directrices cliniques pour la prise en charge du trouble dépressif majeur chez les adultes. *Can J Psychiatr* 2024;69:641–87. <https://doi.org/10.1177/07067437241245384>.
22. Ostuzzi G, Matcham F, Dauchy S. *et al.* Antidepressants for the treatment of depression in people with cancer. *Cochrane Database Syst Rev* 2018;4. <https://doi.org/10.1002/14651858.CD011006.pub3>.
23. Beevers Z, Hussain S, Boele FW, Rooney AG. Pharmacological treatment of depression in people with a primary brain tumour. *Cochrane Database Syst Rev* 2020;7:CD006932. <https://doi.org/10.1002/14651858.CD006932.pub4>.
24. Costa D, Mogos I, Toma T. Efficacy and safety of mianserin in the treatment of depression of women with cancer. *Acta*

- Psychiatr Scand Suppl* 1985;320:85–92. <https://doi.org/10.1111/j.1600-0447.1985.tb08081.x>.
25. van Heeringen K, Zivkov M. Pharmacological treatment of depression in cancer patients. A placebo-controlled study of mianserin. *Br J Psychiatry* 1996;169:440–3. <https://doi.org/10.1192/bjp.169.4.440>.
 26. Razavi D, Allilaire JF, Smith M. *et al.* The effect of fluoxetine on anxiety and depression symptoms in cancer patients. *Acta Psychiatr Scand* 1996;94:205–10. <https://doi.org/10.1111/j.1600-0447.1996.tb09850.x>.
 27. Musselman DL, Somerset WI, Guo Y. *et al.* A double-blind, multicenter, parallel-group study of paroxetine, desipramine, or placebo in breast cancer patients (stages I, II, III, and IV) with major depression. *J Clin Psychiatry* 2006;67:288–96. <https://doi.org/10.4088/JCP.v67n0217>.
 28. Navari RM, Brenner MC, Wilson MN. Treatment of depressive symptoms in patients with early stage breast cancer undergoing adjuvant therapy. *Breast Cancer Res Treat* 2008;112:197–201. <https://doi.org/10.1007/s10549-007-9841-z>.
 29. Fisch MJ, Loehrer PJ, Kristeller J. *et al.* Fluoxetine versus placebo in advanced cancer outpatients: a double-blinded trial of the Hoosier oncology group. *J Clin Oncol* 2003;21:1937–43. <https://doi.org/10.1200/JCO.2003.08.025>.
 30. Qiu J, Chen W, Gao X. *et al.* A randomized controlled trial of group cognitive behavioral therapy for Chinese breast cancer patients with major depression. *J Psychosom Obstet Gynaecol* 2013;34:60–7. <https://doi.org/10.3109/0167482X.2013.766791>.
 31. Ren W, Qiu H, Yang Y. *et al.* Randomized controlled trial of cognitive behavioural therapy for depressive and anxiety symptoms in Chinese women with breast cancer. *Psychiatry Res* 2019;271:52–9. <https://doi.org/10.1016/j.psychres.2018.11.026>.
 32. Savard J, Simard S, Giguère I. *et al.* Randomized clinical trial on cognitive therapy for depression in women with metastatic breast cancer: psychological and immunological effects. *Palliat Support Care* 2006;4:219–37. <https://doi.org/10.1017/S1478951506060305>.
 33. van de Wal MA, Gielissen MF, Servaes P. *et al.* Study protocol of the SWORD-study: a randomised controlled trial comparing combined online and face-to-face cognitive behaviour therapy versus treatment as usual in managing fear of cancer recurrence. *BMC Psychol* 2015;3:12. <https://doi.org/10.1186/s40359-015-0068-1>.
 34. Ashing K, Rosales M. A telephonic-based trial to reduce depressive symptoms among Latina breast cancer survivors. *Psychooncology* 2014;23:507–15. <https://doi.org/10.1002/pon.3441>.
 35. Greer JA, Traeger L, Bemis H. *et al.* A pilot randomized controlled trial of brief cognitive-behavioral therapy for anxiety in patients with terminal cancer. *Oncologist* 2012;17:1337–45. <https://doi.org/10.1634/theoncologist.2012-0041>.
 36. Serfaty M, King M, Nazareth I. *et al.* Manualised cognitive-behavioural therapy in treating depression in advanced cancer: the CanTalk RCT. *Health Technol Assess* 2019;23:1–106. <https://doi.org/10.3310/hta23190>.
 37. Qiu H, Ren W, Yang Y. *et al.* Effects of cognitive behavioral therapy for depression on improving insomnia and quality of life in Chinese women with breast cancer: results of a randomized, controlled, multicenter trial. *Neuropsychiatr Dis Treat* 2018;Volume 14:2665–73. <https://doi.org/10.2147/NDT.S171297>.
 38. Zernicke KA, Campbell TS, Specia M. *et al.* A randomized wait-list controlled trial of feasibility and efficacy of an online mindfulness-based cancer recovery program: the eTherapy for cancer applying mindfulness trial. *Psychosom Med* 2014;76:257–67. <https://doi.org/10.1097/PSY.0000000000000053>.
 39. Carlson LE, Doll R, Stephen J. *et al.* Randomized controlled trial of mindfulness-based cancer recovery versus supportive expressive group therapy for distressed survivors of breast cancer. *J Clin Oncol* 2013;31:3119–26. <https://doi.org/10.1200/JCO.2012.47.5210>.
 40. Park S, Sato Y, Takita Y. *et al.* Mindfulness-based cognitive therapy for psychological distress, fear of cancer recurrence, fatigue, spiritual well-being, and quality of life in patients with breast cancer—a randomized controlled trial. *J Pain Symptom Manag* 2020;60:381–9. <https://doi.org/10.1016/j.jpainsymman.2020.02.017>.
 41. Compen F, Bisseling E, Schellekens M. *et al.* Face-to-face and internet-based mindfulness-based cognitive therapy compared with treatment as usual in reducing psychological distress in patients with cancer: a Multicenter randomized controlled trial. *J Clin Oncol* 2018;36:2413–21. <https://doi.org/10.1200/JCO.2017.76.5669>.
 42. Compen F, Adang E, Bisseling E, van der Lee M, Speckens A. Cost-utility of individual internet-based and face-to-face mindfulness-based cognitive therapy compared with treatment as usual in reducing psychological distress in cancer patients. *Psychooncology* 2020;29:294–303. <https://doi.org/10.1002/pon.5246>.
 43. González-Fernández S, Fernández-Rodríguez C, Paz-Caballero MD, Pérez-Álvarez M. Treating anxiety and depression of cancer survivors: Behavioral activation versus acceptance and commitment therapy. *Psicothema* 2018;30:14–20. <https://doi.org/10.7334/psicothema2017.396>.
 44. Johns SA, Stutz PV, Talib TL. *et al.* Acceptance and commitment therapy for breast cancer survivors with fear of cancer recurrence: a 3-arm pilot randomized controlled trial. *Cancer* 2020;126:211–8. <https://doi.org/10.1002/cncr.32518>.
 45. Fernández-Rodríguez C, González-Fernández S, Coto-Lesmes R, Pedrosa I. Behavioral activation and acceptance and commitment therapy in the treatment of anxiety and depression in cancer survivors: a randomized clinical trial. *Behav Modif* 2021;45:822–59. <https://doi.org/10.1177/0145445520916441>.
 46. Dong X, Sun G, Zhan J. *et al.* Telephone-based reminiscence therapy for colorectal cancer patients undergoing postoperative chemotherapy complicated with depression: a three-arm randomised controlled trial. *Support Care Cancer* 2019;27:2761–9. <https://doi.org/10.1007/s00520-018-4566-6>.
 47. van de Wal M, Thewes B, Gielissen M. *et al.* Efficacy of blended cognitive behavior therapy for high fear of recurrence in breast, prostate, and colorectal cancer survivors: the SWORD study, a randomized controlled trial. *J Clin Oncol* 2017;35:2173–83. <https://doi.org/10.1200/JCO.2016.70.5301>.
 48. Kim YH, Choi KS, Han K, Kim HW. A psychological intervention programme for patients with breast cancer under chemotherapy and at a high risk of depression: a randomised clinical trial. *J Clin Nurs* 2018;27:572–81. <https://doi.org/10.1111/jocn.13910>.
 49. Goerling U, Foerg A, Sander S. *et al.* The impact of short-term psycho-oncological interventions on the psychological outcome of cancer patients of a surgical-oncology department - a randomised controlled study. *Eur J Cancer* 2011;47:2009–14. <https://doi.org/10.1016/j.ejca.2011.04.031>.
 50. Beutel ME, Weißflog G, Leuteritz K. *et al.* Efficacy of short-term psychodynamic psychotherapy (STPP) with depressed breast cancer patients: results of a randomized controlled multicenter trial. *Ann Oncol* 2014;25:378–84. <https://doi.org/10.1093/annonc/mdt526>.
 51. Nelson CJ, Saracino RM, Roth AJ. *et al.* Cancer and aging: reflections for elders (CARE): a pilot randomized controlled trial of a psychotherapy intervention for older adults with cancer. *Psychooncology* 2019;28:39–47. <https://doi.org/10.1002/pon.4907>.
 52. Charalambous A, Giannakopoulou M, Bozas E, Paikousis L. A randomized controlled trial for the effectiveness of progressive muscle relaxation and guided imagery as anxiety reducing interventions in breast and prostate cancer patients undergoing chemotherapy. *Evid Based Complement Alternat Med* 2015;2015:270876. <https://doi.org/10.1155/2015/270876>.
 53. Krebber AM, Jansen F, Witte BI. *et al.* Stepped care targeting psychological distress in head and neck cancer and lung cancer

- patients: a randomized, controlled trial. *Ann Oncol* 2016;27:1754–60. <https://doi.org/10.1093/annonc/mdw230>.
54. Dowlatabadi MM, Ahmadi SM, Sorbi MH. *et al.* The effectiveness of group positive psychotherapy on depression and happiness in breast cancer patients: a randomized controlled trial. *Electron Physician* 2016;8:2175–80. <https://doi.org/10.19082/2175>.
 55. Breitbart W, Pessin H, Rosenfeld B. *et al.* Individual meaning-centered psychotherapy for the treatment of psychological and existential distress: a randomized controlled trial in patients with advanced cancer. *Cancer* 2018;124:3231–9. <https://doi.org/10.1002/cncr.31539>.
 56. Rodríguez Vega B, Palao A, Torres G. *et al.* Combined therapy versus usual care for the treatment of depression in oncologic patients: a randomized controlled trial. *Psychooncology* 2011;20:943–52. <https://doi.org/10.1002/pon.1800>.
 57. National Center for Neurology and Psychiatry Japan. Survey on training and improving the qualifications of certified psychologists through practical training. *Grant-in-aid Ministry of Health Labor and Welfare report*. 2020. <https://www.mhlw.go.jp/content/12200000/000654302.pdf> (26 December 2025, date last accessed)
 58. Katon WJ, Lin EH, Von Korff M. *et al.* Collaborative care for patients with depression and chronic illnesses. *N Engl J Med* 2010;363:2611–20. <https://doi.org/10.1056/NEJMoa1003955>.
 59. Richardson LP, Ludman E, McCauley E. *et al.* Collaborative care for adolescents with depression in primary care: a randomized clinical trial. *JAMA* 2014;312:809–16. <https://doi.org/10.1001/jama.2014.9259>.
 60. Von Korff M, Katon WJ, Lin EH. *et al.* Functional outcomes of multi-condition collaborative care and successful ageing: results of randomised trial. *BMJ* 2011;343:d6612. <https://doi.org/10.1136/bmj.d6612>.
 61. Craske MG, Roy-Byrne P, Stein MB. *et al.* Treating panic disorder in primary care: a collaborative care intervention. *Gen Hosp Psychiatry* 2002;24:148–55. [https://doi.org/10.1016/S0163-8343\(02\)00174-3](https://doi.org/10.1016/S0163-8343(02)00174-3).
 62. Fann JR, Ell K, Sharpe M. Integrating psychosocial care into cancer services. *J Clin Oncol* 2012;30:1178–86. <https://doi.org/10.1200/JCO.2011.39.7398>.
 63. Walker J, Hansen CH, Martin P. *et al.* Integrated collaborative care for major depression comorbid with a poor prognosis cancer (SMaRT Oncology-3): a multicentre randomised controlled trial in patients with lung cancer. *Lancet Oncol* 2014;15:1168–76. [https://doi.org/10.1016/S1470-2045\(14\)70343-2](https://doi.org/10.1016/S1470-2045(14)70343-2).
 64. Dwight-Johnson M, Ell K, Lee PJ. Can collaborative care address the needs of low-income Latinas with comorbid depression and cancer? Results from a randomized pilot study. *Psychosomatics* 2005;46:224–32. <https://doi.org/10.1176/appi.psy.46.3.224>.
 65. Ell K, Xie B, Quon B. *et al.* Randomized controlled trial of collaborative care management of depression among low-income patients with cancer. *J Clin Oncol* 2008;26:4488–96. <https://doi.org/10.1200/JCO.2008.16.6371>.
 66. Sharpe M, Walker J, Holm Hansen C. *et al.* Integrated collaborative care for comorbid major depression in patients with cancer (SMaRT Oncology-2): a multicentre randomised controlled effectiveness trial. *Lancet* 2014;384:1099–108. [https://doi.org/10.1016/S0140-6736\(14\)61231-9](https://doi.org/10.1016/S0140-6736(14)61231-9).
 67. Strong V, Waters R, Hibberd C. *et al.* Management of depression for people with cancer (SMaRT oncology 1): a randomised trial. *Lancet* 2008;372:40–8. [https://doi.org/10.1016/S0140-6736\(08\)60991-5](https://doi.org/10.1016/S0140-6736(08)60991-5).
 68. Fann JR, Fan MY, Unützer J. Improving primary care for older adults with cancer and depression. *J Gen Intern Med* 2009;24:417–24. <https://doi.org/10.1007/s11606-009-0999-4>.
 69. Kroenke K, Theobald D, Wu J. *et al.* Effect of telecare management on pain and depression in patients with cancer: a randomized trial. *JAMA* 2010;304:163–71. <https://doi.org/10.1001/jama.2010.944>.
 70. Li M, Kennedy EB, Byrne N. *et al.* Systematic review and meta-analysis of collaborative care interventions for depression in patients with cancer. *Psychooncology* 2017;26:573–87. <https://doi.org/10.1002/pon.4286>.
 71. Shaw J, Sethi S, Vaccaro L. *et al.* Is care really shared? A systematic review of collaborative care (shared care) interventions for adult cancer patients with depression. *BMC Health Serv Res* 2019;19:120. <https://doi.org/10.1186/s12913-019-3946-z>.
 72. Sanders JJ, Temin S, Ghoshal A. *et al.* Palliative Care for Patients with Cancer: ASCO guideline update. *J Clin Oncol* 2024;42:2336–57. <https://doi.org/10.1200/JCO.24.00542>.
 73. Woo SM, Song MK, Lee M. *et al.* Effect of early management on pain and depression in patients with Pancreatobiliary cancer: a randomized clinical trial. *Cancers (Basel)* 2019;11:79. <https://doi.org/10.3390/cancers11010079>.
 74. Bakitas MA, Dionne-Odom JN, Ejem DB. *et al.* Effect of an early palliative care telehealth intervention vs usual care on patients with heart failure: the ENABLE CHF-PC randomized clinical trial. *JAMA Intern Med* 2020;180:1203–13. <https://doi.org/10.1001/jamainternmed.2020.2861>.
 75. Temel JS, Greer JA, Muzikansky A. *et al.* Early palliative care for patients with metastatic non-small-cell lung cancer. *N Engl J Med* 2010;363:733–42. <https://doi.org/10.1056/NEJMoa1000678>.
 76. Zhuang H, Ma Y, Wang L, Zhang H. Effect of early palliative care on quality of life in patients with non-small-cell lung cancer. *Curr Oncol* 2018;25:e54–8. <https://doi.org/10.3747/co.25.3639>.
 77. Tattersall MHN, Martin A, Devine R. *et al.* Early contact with palliative care services: a randomized trial in patients with newly detected incurable metastatic cancer. *J Palliat Care Med* 2014;4:1.
 78. Miklowitz DJ, Weintraub MJ, Denenny DM. *et al.* Parental expressed emotion, family conflict, and symptom severity in adolescent offspring of parents with mood disorders. *J Affect Disord* 2025;389:119620. <https://doi.org/10.1016/j.jad.2025.119620>.
 79. Manne SL, Kashy DA, Zaiden T. *et al.* Couple-focused interventions for men with localized prostate cancer and their spouses: a randomized clinical trial. *Br J Health Psychol* 2019;24:396–418. <https://doi.org/10.1111/bjhp.12359>.
 80. Kiemen A, Czornik M, Weis J. How effective is peer-to-peer support in cancer patients and survivors? A systematic review. *J Cancer Res Clin Oncol* 2023;149:9461–85. <https://doi.org/10.1007/s00432-023-04753-8>.
 81. Park HY, Kim MJ, Kim JY. *et al.* Could peer support programs Be a good resource for managing the unmet needs of cancer patients? *J Cancer Educ* 2019;34:950–7. <https://doi.org/10.1007/s13187-018-1399-4>.
 82. Lee R, Lee KS, Oh EG, Kim SH. A randomized trial of dyadic peer support intervention for newly diagnosed breast cancer patients in Korea. *Cancer Nurs* 2013;36:E15–22. <https://doi.org/10.1097/NCC.0b013e3182642d7c>.
 83. Gotay CC, Moinpour CM, Unger JM. *et al.* Impact of a peer-delivered telephone intervention for women experiencing a breast cancer recurrence. *J Clin Oncol* 2007;25:2093–9. <https://doi.org/10.1200/JCO.2006.07.4674>.
 84. Schover LR, Jenkins R, Sui D. *et al.* Randomized trial of peer counseling on reproductive health in African American breast cancer survivors. *J Clin Oncol* 2006;24:1620–6. <https://doi.org/10.1200/JCO.2005.04.7159>.
 85. Weber BA, Roberts BL, Resnick M. *et al.* The effect of dyadic intervention on self-efficacy, social support, and depression for men with prostate cancer. *Psychooncology* 2004;13:47–60. <https://doi.org/10.1002/pon.718>.
 86. Weber BA, Roberts BL, Yarandi H. *et al.* The impact of dyadic social support on self-efficacy and depression after radical prostatectomy. *J Aging Health* 2007;19:630–45. <https://doi.org/10.1177/0898264307300979>.
 87. Høybye MT, Dalton SO, Deltour I. *et al.* Effect of internet peer-support groups on psychosocial adjustment to cancer: a randomised study. *Br J Cancer* 2010;102:1348–54. <https://doi.org/10.1038/sj.bjc.6605646>.

88. Yun YH, Kim YA, Lee MK. *et al.* A randomized controlled trial of physical activity, dietary habit, and distress management with the leadership and coaching for health (LEACH) program for disease-free cancer survivors. *BMC Cancer* 2017;17:298. <https://doi.org/10.1186/s12885-017-3290-9>.
89. Nápoles AM, Santoyo-Olsson J, Stewart AL. *et al.* Nuevo Amanecer-II: results of a randomized controlled trial of a community-based participatory, peer-delivered stress management intervention for rural Latina breast cancer survivors. *Psychooncology* 2020;29:1802–14. <https://doi.org/10.1002/pon.5481>.
90. Nápoles AM, Ortiz C, Santoyo-Olsson J. *et al.* Nuevo Amanecer: results of a randomized controlled trial of a community-based, peer-delivered stress management intervention to improve quality of life in Latinas with breast cancer. *Am J Public Health* 2015;105:e55–63. <https://doi.org/10.2105/AJPH.2015.302598>.
91. Salzer MS, Palmer SC, Kaplan K. *et al.* A randomized, controlled study of internet peer-to-peer interactions among women newly diagnosed with breast cancer. *Psychooncology* 2010;19:441–6. <https://doi.org/10.1002/pon.1586>.
92. Zhang S, Li J, Hu X. Peer support interventions on quality of life, depression, anxiety, and self-efficacy among patients with cancer: a systematic review and meta-analysis. *Patient Educ Couns* 2022;105:3213–24. <https://doi.org/10.1016/j.pec.2022.07.008>.
93. Lee MK, Suh SR. Effects of peer-led interventions for patients with cancer: a meta-analysis. *Oncol Nurs Forum* 2018;45:217–36. <https://doi.org/10.1188/18.ONF.217-236>.
94. Tauber NM, O'Toole MS, Dinkel A. *et al.* Effect of psychological intervention on fear of cancer recurrence: a systematic review and meta-analysis. *J Clin Oncol* 2019;37:2899–915. <https://doi.org/10.1200/JCO.19.00572>.
95. Akechi T, Momino K, Katsuki F. *et al.* Brief collaborative care intervention to reduce perceived unmet needs in highly distressed breast cancer patients: randomized controlled trial. *Jpn J Clin Oncol* 2021;51:244–51. <https://doi.org/10.1093/jjco/hyaa166>.
96. Dirkse D, Hadjistavropoulos HD, Alberts NA. *et al.* Making internet-delivered cognitive behaviour therapy scalable for cancer survivors: a randomized non-inferiority trial of self-guided and technician-guided therapy. *J Cancer Surviv* 2020;14:211–25. <https://doi.org/10.1007/s11764-019-00810-9>.
97. Murphy MJ, Newby JM, Butow P. *et al.* Randomised controlled trial of internet-delivered cognitive behaviour therapy for clinical depression and/or anxiety in cancer survivors (iCanADAPT early). *Psychooncology* 2020;29:76–85. <https://doi.org/10.1002/pon.5267>.
98. Burm R, Thewes B, Rodwell L. *et al.* Long-term efficacy and cost-effectiveness of blended cognitive behavior therapy for high fear of recurrence in breast, prostate and colorectal cancer survivors: follow-up of the SWORD randomized controlled trial. *BMC Cancer* 2019;19:462. <https://doi.org/10.1186/s12885-019-5615-3>.
99. van den Berg SW, Gielissen MF, Custers JA. *et al.* BREATH: web-based self-Management for Psychological Adjustment after primary breast Cancer—results of a Multicenter randomized controlled trial. *J Clin Oncol* 2015;33:2763–71. <https://doi.org/10.1200/JCO.2013.54.9386>.
100. Qaragezlou NA, Boogar IR, Asadi J, Vojdani R. The effectiveness of mindfulness-based stress reduction on fear of cancer recurrence in colorectal and breast cancer patients: a randomized controlled trial. *Middle East Journal of Cancer* 2020;11:216–24.
101. Russell L, Ugalde A, Orellana L. *et al.* A pilot randomised controlled trial of an online mindfulness-based program for people diagnosed with melanoma. *Support Care Cancer* 2019;27:2735–46. <https://doi.org/10.1007/s00520-018-4574-6>.
102. Reskati MH, Hosseini SH, Alizadeh-Navaei R. *et al.* Effectiveness of acceptance and commitment therapy management on self-differentiation and fear of disease progression in patients with breast cancer. *J Babol Univ Med Sci* 2020;22:110–8.
103. Fang SY, Wang YL, Lu WH. *et al.* Long-term effectiveness of an E-based survivorship care plan for breast cancer survivors: a quasi-experimental study. *Patient Educ Couns* 2020;103:549–55. <https://doi.org/10.1016/j.pec.2019.09.012>.
104. Dieng M, Morton RL, Costa DSJ. *et al.* Benefits of a brief psychological intervention targeting fear of cancer recurrence in people at high risk of developing another melanoma: 12-month follow-up results of a randomized controlled trial. *Br J Dermatol* 2020;182:860–8. <https://doi.org/10.1111/bjd.17990>.
105. van Helmond SJ, van der Lee ML, van Woezik RAM. *et al.* No effect of CBT-based online self-help training to reduce fear of cancer recurrence: first results of the CAREST multicenter randomized controlled trial. *Psychooncology* 2020;29:86–97. <https://doi.org/10.1002/pon.5233>.
106. Tomei C, Lebel S, Maheu C. *et al.* Examining the preliminary efficacy of an intervention for fear of cancer recurrence in female cancer survivors: a randomized controlled clinical trial pilot study. *Support Care Cancer* 2018;26:2751–62. <https://doi.org/10.1007/s00520-018-4097-1>.
107. Lichtenthal WG, Corner GW, Slivjak ET. *et al.* A pilot randomized controlled trial of cognitive bias modification to reduce fear of breast cancer recurrence. *Cancer* 2017;123:1424–33. <https://doi.org/10.1002/cncr.30478>.
108. Merckaert I, Lewis F, Delevallez F. *et al.* Improving anxiety regulation in patients with breast cancer at the beginning of the survivorship period: a randomized clinical trial comparing the benefits of single-component and multiple-component group interventions. *Psychooncology* 2017;26:1147–54. <https://doi.org/10.1002/pon.4294>.
109. Humphris GM, Rogers SN. AFTER and beyond: Cancer recurrence fears and a test of an intervention in oral and oropharyngeal patients. *Social Science and Dentistry* 2012;2:29–38.
110. Gonzalez-Hernandez E, Romero R, Campos D. *et al.* Cognitively-based compassion training (CBCT). *Integr Cancer Ther* 2018;17:684–96. <https://doi.org/10.1177/1534735418772095>.
111. Victorson D, Hankin V, Burns J. *et al.* Feasibility, acceptability and preliminary psychological benefits of mindfulness meditation training in a sample of men diagnosed with prostate cancer on active surveillance: results from a randomized controlled pilot trial. *Psychooncology* 2017;26:1155–63. <https://doi.org/10.1002/pon.4135>.
112. Lengacher CA, Reich RR, Paterson CL. *et al.* Examination of broad symptom improvement resulting from mindfulness-based stress reduction in breast cancer survivors: a randomized controlled trial. *J Clin Oncol* 2016;34:2827–34. <https://doi.org/10.1200/JCO.2015.65.7874>.
113. Lengacher CA, Johnson-Mallard V, Post-White J. *et al.* Randomized controlled trial of mindfulness-based stress reduction (MBSR) for survivors of breast cancer. *Psychooncology* 2009;18:1261–72. <https://doi.org/10.1002/pon.1529>.
114. Lengacher CA, Shelton MM, Reich RR. *et al.* Mindfulness based stress reduction (MBSR/BC) in breast cancer: evaluating fear of recurrence (FOR) as a mediator of psychological and physical symptoms in a randomized control trial (RCT). *J Behav Med* 2014;37:185–95. <https://doi.org/10.1007/s10865-012-9473-6>.
115. Bower JE, Crosswell AD, Stanton AL. *et al.* Mindfulness meditation for younger breast cancer survivors: a randomized controlled trial. *Cancer* 2015;121:1231–40. <https://doi.org/10.1002/cncr.29194>.
116. Dodds SE, Pace TW, Bell ML. *et al.* Feasibility of cognitively-based compassion training (CBCT) for breast cancer survivors: a randomized, wait list controlled pilot study. *Support Care Cancer* 2015;23:3599–608. <https://doi.org/10.1007/s00520-015-2888-1>.
117. Butow PN, Turner J, Gilchrist J. *et al.* Randomized trial of ConquerFear: a novel, theoretically based psychosocial intervention for fear of cancer recurrence. *J Clin Oncol* 2017;35:4066–77. <https://doi.org/10.1200/JCO.2017.73.1257>.
118. Butow PN, Bell ML, Smith AB. *et al.* Conquer fear: protocol of a randomised controlled trial of a psychological intervention

- to reduce fear of cancer recurrence. *BMC Cancer* 2013;13:201. <https://doi.org/10.1186/1471-2407-13-201>.
119. Crane-Okada R, Kiger H, Sugerman F. *et al.* Mindful movement program for older breast cancer survivors: a pilot study. *Cancer Nurs* 2012;35:E1–13. <https://doi.org/10.1097/NCC.0b013e3182280f73>.
 120. Damude S, Hoekstra-Weebers JE, Francken AB. *et al.* The MELFO-study: prospective, randomized, clinical trial for the evaluation of a stage-adjusted reduced follow-up schedule in cutaneous melanoma patients-results after 1 year. *Ann Surg Oncol* 2016;23:2762–71. <https://doi.org/10.1245/s10434-016-5263-7>.
 121. Sheppard C, Higgins B, Wise M. *et al.* Breast cancer follow up: a randomised controlled trial comparing point of need access versus routine 6-monthly clinical review. *Eur J Oncol Nurs* 2009;13: 2–8. <https://doi.org/10.1016/j.ejon.2008.11.005>.