



Review article

The impact of emotional freedom techniques on anxiety, depression, and anticipatory grief in people with cancer: A meta-analysis and systematic review

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ABSTRACT

Objective: Emotional Freedom Techniques (EFT) is a self-healing method that combines Eastern meridian acupuncture and Western psychology. This meta-analysis evaluates the efficacy of EFT in reducing anxiety, depression, and anticipatory grief symptoms in people with cancer.

Methods: A comprehensive search was conducted across nine databases, including Cochrane Library, Embase, PubMed, Web of Science, Google Scholar, CBM, WeiPu, CNKI, and WanFang, up to May 2024. We included randomized controlled trials (RCTs) focused on EFT's effects on psychological symptoms and well-being in people with cancer. Eligible RCTs were screened, quality-assessed, and analyzed using RevMan 5.3 software.

Results: From 1026 articles, ten RCTs met the inclusion criteria, involving 774 patients (388 in the EFT group and 386 in the control group). EFT reduced symptoms of depression (MD = -7.41, 95 % CI [-9.32, -5.51], $P < .001$) and anxiety (MD = -7.92, 95 % CI [-11.01, -4.83], $P < .001$). For anticipatory grief, EFT improved symptoms related to sadness, anger, death attitude, somatic symptoms, religious comfort, and perceived social support, but did not affect disease adjustment, self-awareness, or psychological distress. EFT also improved sleep quality (MD = -1.96, 95 % CI [-2.80, -1.13], $P < .001$).

Conclusion: EFT significantly alleviates anxiety, depression, and certain aspects of anticipatory grief, as well as sleep issues in people with cancer, though it shows limited efficacy in psychological distress, disease adjustment, and self-awareness. Further research should standardize outcomes to verify EFT's comprehensive benefits.

1. Introduction

Cancer is a leading cause of death globally [1]. A cancer diagnosis often results in lasting psychosocial effects, with depression, anxiety, and emotional distress commonly observed throughout the care pathway [2]. These factors can impede treatment, recovery, quality of life, and survival [3]. Prevalence rates of depression in newly diagnosed cancer patients range from 12.9 % to 16.5 %, and anxiety disorders from 19.0 % to 22 % [4]. During hospice care, the prevalence of anxiety and depression (10 % and 25 %, respectively) remains similar to that in non-palliative settings [5,6]. If left untreated, these issues can become chronic distress [7,8]. These distresses are further heightened by anticipatory grief (AG) as patients face an advanced or terminal cancer diagnosis [9–11]. Studies have shown that psychological distress often

has a more profound impact on daily functioning than physical barriers [12], leading some patients to discontinue chemotherapy due to psychological challenges [13]. Furthermore, the experience of cancer pain is significantly linked to forms of stress, such as depression [14]. Patients' emotional and psychological needs often exceed those during treatment [15,16].

In recent years, Emotional Freedom Techniques (EFT) have gained increasing attention as an effective self-help tool for addressing psychological symptoms in people with cancer [17]. This complementary and alternative medicine (CAM) therapy [18] has been utilized to manage various emotional, health, and performance challenges, including anxiety, depression [19], and stress [20–22]. EFT, similar to acupressure, involves tapping on specific acupoints on the face, upper chest, and hands—areas identified for their vascular

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density—enhancing therapeutic effects [23]. This clinical approach combines elements of traditional psychological techniques with the physical stimulation of acupoints, regulating the body's stress response and modulating the nervous system, particularly the hypothalamic-pituitary-adrenal (HPA) axis [24,25]. EFT's mechanism involves reactivating distressing memories or triggers, altering emotional responses through the limbic pathways, and releasing intense emotional experiences [26–28]. With as few as 4–10 sessions, EFT can yield lasting changes, though more complex cases may require a longer-term approach [29]. Over 100 clinical trials have validated EFT's effectiveness in improving psychological and physiological symptoms [16,30–43]. Despite these promising findings, some studies suggest it remains unclear whether the effects of EFT are attributable to acupoint stimulation itself or shared elements with other therapeutic techniques [44].

EFT, as a self-help tool, is easy to learn and apply and has been shown to produce significant effects in a relatively short period. This makes EFT a valuable intervention, particularly in resource-limited healthcare settings. While EFT has been shown to be effective in non-cancer populations through numerous studies, its application to people with cancer remains underresearched. Most current studies in this field are preliminary trials with small sample sizes and lack systematic meta-analyses to comprehensively evaluate their effects. Thus, further exploration of EFT's safety and effectiveness in people with cancer is needed to establish a stronger scientific basis for its use and provide a new intervention option in clinical practice, ultimately improving the psychological health and quality of life. The research question guiding this review is: In adults with cancer (P), how effective is EFT (I) compared to placebo or other treatment modalities (C) in alleviating anxiety, depression, and anticipatory grief (O) within both short-term and long-term follow-up periods (T), across various treatment settings (S)?

2. Materials and methods

2.1. Search strategy

This meta-analysis and systematic review were conducted and reported by the latest PRISMA 2020 statement [45]. The databases searched included nine: Cochrane Library, Embase, PubMed, Web of Science, Google Scholar, CBM, WeiPu, CNKI, and WanFang, covering the period from their inception until May 2024. The search terms used were “Emotional Freedom Techniques”, “cancer”, “anxiety”, “depression” and “anticipatory grief” employing a combination of subject terms and free-text terms with no language restrictions. The search terms for each database are provided as supplementary material 2.

2.2. Study selection

Studies with relevant abstracts were identified and screened based on predefined eligibility criteria, which were as follows:

Participants: Adults with cancer, regardless of age, sex, or disease severity.

Intervention: EFT therapy aimed at alleviating negative emotions related to cancer, including anxiety, depression, and anticipatory grief.

Comparison: A control group receiving either a placebo or another treatment.

Outcomes: The primary outcomes assessed were anxiety, depression, and anticipatory grief.

Time: Both short-term and long-term follow-up outcomes were considered.

Setting: Treatment settings varied, including outpatient community clinics and inpatient psychiatric facilities.

Exclusion criteria included non-randomized controlled trials, duplicate publications, studies lacking sufficient data, reviews, case reports, conference abstracts, animal or cadaver studies, and articles not

published as clinical trials. The Kappa value of 0.85 indicated a high level of consistency.

2.3. Data extraction and quality assessment

Data were extracted from the included studies using a predesigned data extraction form. The extracted data characteristics included author, year of publication, sample size, age of subjects, details of the two groups, and outcome measures. The extracted data were cross-checked by both researchers. Data were organized in an experimental format and duplicated in Excel spreadsheets. All data extraction was performed independently by the two researchers. In cases of any discrepancies, a third researcher made the final decision.

The quality of the studies was assessed by two researchers using the seven items recommended by the Cochrane Risk of Bias Assessment Tool [46]. The assessment involved judging each domain as “yes”, “no”, or “unclear” representing low, high, or unclear risk of bias, respectively. AMSTAR 2 was used to assess the methodological quality of systematic reviews/meta-analyses. AMSTAR 2 includes 16 items, of which items 2, 4, 7, 9, 11, 13, and 15 are key items; the evaluation results of each item are divided into yes (Y), partly yes (PY), and no (N). When the evaluation result is no, it is considered non-compliant; 0 or 1 non-key item is not compliant and is rated as high credibility; more than 1 non-key item is not compliant and is rated as medium credibility; 1 key item is not compliant with or without non-key items being not compliant and is rated as low credibility; more than one key item is not compliant with or without non-key items being not compliant and is rated as very low credibility.

2.4. Statistical analyses

All statistical analyses were conducted using Review Manager 5.3 software. Continuous variables were expressed as mean \pm standard deviation (SD) and evaluated using mean difference (MD). The standardized mean differences (SMDs) were calculated from baseline to immediately post-intervention to assess the effect size between groups. Effect sizes were grouped by outcome measurement to ensure consistency in the analysis. Studies that employed different outcome measures were excluded from the meta-analysis to avoid potential heterogeneity; however, they were still included in the overall review. Categorical data were presented as percentages and analyzed using relative risk (RR) or odds ratios. The chi-square test (χ^2) and I^2 test were used to assess heterogeneity in the clinical trial data and to determine the appropriate analysis model (fixed-effects or random-effects model). Heterogeneity was considered acceptable when the χ^2 test p -value was <0.05 and the I^2 value was $<50\%$. When heterogeneity was not significant, the fixed-effects model was applied. If heterogeneity was present, indicating that the effect size was not fixed and followed a certain distribution (e.g., normal distribution), the random-effects model was used. Among the 11 results of this study, nine adopted the random effects model, while two used the fixed effects model.

3. Results

3.1. Study selection, evidence quality, and patient characteristics

All included studies were RCTs with consistent baselines (Fig. 1). The ten RCT studies encompassed a total of 774 participants, with 388 in the intervention group (EFT) and 386 in the control group. The two researchers achieved high agreement in data extraction (See Tables 1–3).

3.2. Meta-analysis results

3.2.1. Depression

Four studies focusing on the improvement of depressive symptoms were included, comprising a total of 362 patients, with 181 patients in

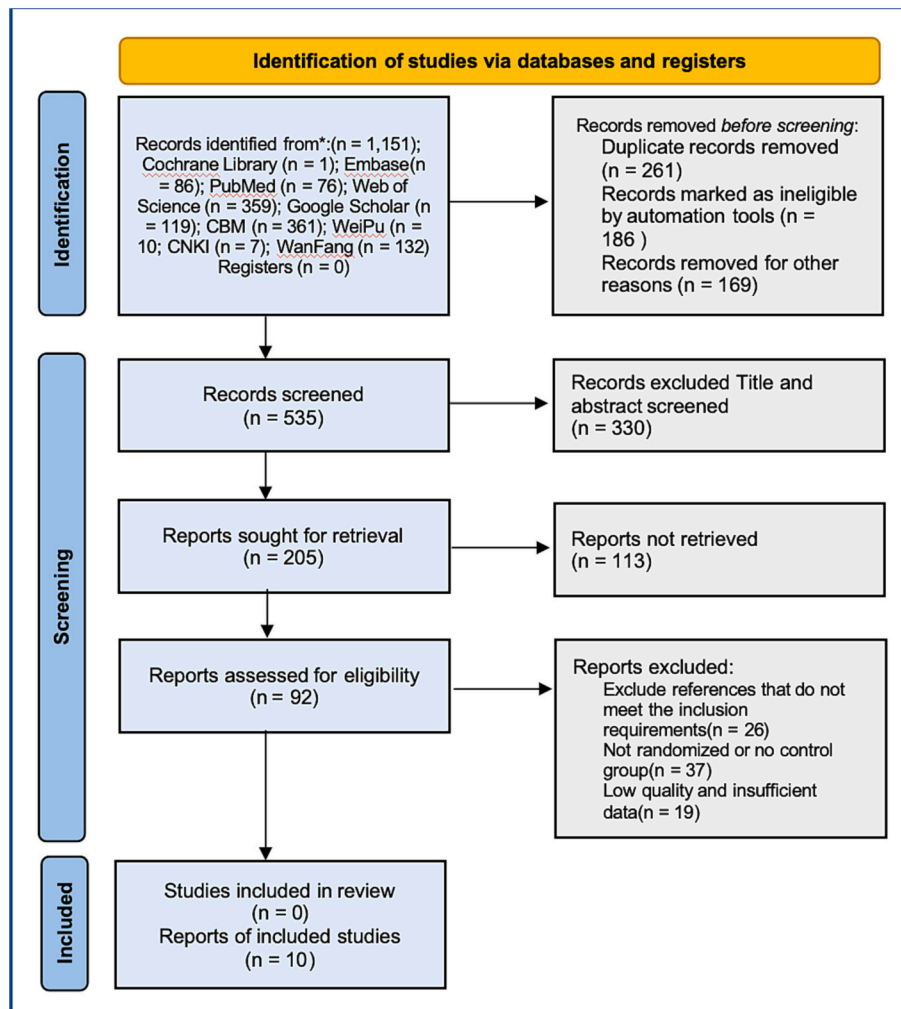


Fig. 1. PRISMA flowchart.

Table 1
Search strategy used in the PubMed database.

Number	Search Items
#1	Emotional Freedom Techniques [Title/Abstract] OR urological neoplasms [Title/Abstract] OR Meridian Energy Therapy [Title/Abstract] OR Psychological Acupressure [Title/Abstract] OR Meridian Tapping Treatment [Title/Abstract] OR Emotional Liberation Techniques [Title/Abstract]
#2	Cancer [Mesh] OR Tumor [Mesh] OR Malignant Tumor [Mesh] OR Oncologic Patients [Title/Abstract]
#3	#1 AND #2
#4	Anxiety [Title/Abstract] OR Generalized Anxiety Disorder [Title/Abstract] OR Social Anxiety Disorder [Title/Abstract] OR Panic Disorder [Title/Abstract] OR Specific Phobia [Title/Abstract]
#5	#3 AND #4
#6	Depression [Mesh] OR Major Depressive Disorder [Title/Abstract] OR Bipolar Disorder [Title/Abstract] OR Persistent Depressive Disorder [Title/Abstract] OR Seasonal Affective Disorder [Title/Abstract]
#7	#5 AND #6
#8	Anticipatory Grief [Mesh] OR Anticipatory Mourning [Title/Abstract] OR Anticipatory Sorrow [Title/Abstract] OR Anticipatory Sadness [Title/Abstract]
#9	#7 AND #8
#10	Randomized Controlled Trials as topic [Mesh] OR Clinical Trials, randomized [Title/Abstract] OR Controlled Clinical Trials, randomized [Title/Abstract] OR Randomized Controlled Trial [Publication Type] OR Intention to Treat Analysis [Mesh] OR Controlled Clinical Trials as Topic [Mesh]
#11	#9 AND #10

both the experimental and control groups. The heterogeneity test ($\text{Chi}^2 = 7.28, P = .06, I^2 = 59\%$) indicated moderate heterogeneity. The results demonstrated that EFT can reduced depressive symptoms in people with cancer ($\text{MD} = -7.41, 95\% \text{ CI} [-9.32, -5.51], P < .001$) (Fig. 2). Additionally, Guo (2020) [47] explored depressive symptoms but was excluded from the meta-analysis due to using the Patient Health Questionnaire-9 (PHQ-9), while the included studies used the Self-Rating Depression Scale (SDS). Although excluded, this study was considered in the overall review.

3.2.2. Anxiety

A total of three studies reported improvements in anxiety, involving 302 patients, with 151 in both the experimental and control groups. The study by Guo1 (2020) [47] was excluded from the meta-analysis due to potential heterogeneity from the differing scales but was still considered in the overall review. The heterogeneity test results ($\text{Chi}^2 = 7.51, P = .02, I^2 = 73\%$) indicated significant heterogeneity. The results demonstrated a significant improvement in anxiety symptoms among people with cancer treated with EFT compared to the control group ($\text{MD} = -7.92, 95\% \text{ CI} [-11.01, -4.83], P < .001$) (Fig. 3).

3.2.3. Anticipatory grief

A total of 118 patients reported anticipatory grief in two studies, with 60 in the EFT group and 58 in the control group. The following are the results of the analysis: Significant between-group differences were noted for sadness and anger levels ($\text{MD} = -8.82, 95\% \text{ CI} [-11.61,$

Table 2
Basic characteristics of included studies.

Author/ Year	Cancer type	Study Type	EFT Group		Age	Control Group		Age	Outcomes
			Sample	Treatment Method		Sample	Treatment Method		
Anggreini (2021) [54]	Breast cancer (II and III)	RCT (Quasi experiment)	17	Participants received three EFT treatments. The first treatment was conducted by the researcher and lasted 10–20 min, and the EFT standard operating procedure (SOP) was provided for the participant to refer to. The second treatment was completed independently by the participant at home, and the researcher supervised via remote communication. The third treatment and assessment took place when the participant visited the clinic.	50.25 ± 8.08	17	Routine treatment before	50.25 ± 8.08	⑦
Ningsih (2015) [55]	Breast cancer (II and III)	RCT (Quasi experiment)	15	3 days of EFT treatment	26–55	15	Routine treatment	26–55	①
Kalroozi (2022) [48]	Breast cancer	RCT(S)	34	6 EFT training sessions, once a week, 30–45 min each session; do EFT at least 3 times a day within 1 month	44.73 ± 11.57	31	Routine treatment	45.84 ± 11.16	⑥
		RCT(N)	33		42.42 ± 9.76	35		43.80 ± 10.38	⑥③
Fan (2018) [50]	Oral Cancer	RCT	56	Routine treatment + health guidance + EFT (3 times a day, 10–30 min each time, 4 times a week)	55.9 ± 12.1	56	Routine treatment + health guidance	57.3–13.4	①②③
Xie (2020) [49]	Breast cancer	RCT	60	Routine + EFT before surgery (3 times a day, 10–15 min each time, for 2 weeks)	45.80 ± 7.60	60	Routine treatment	47.50 ± 8.30	①②③
Liao (2019) [53]	Cervical cancer (Ib-IIIa)	RCT	35	Routine + EFT (3 times a day, 15 min each time, for 4 weeks)	44.21 ± 11.36	35	Routine treatment	45.46 ± 12.87	①②③④⑤⑥
Guo1 (2020) [47]	Advanced cancer in young and middle-aged people	RCT	46	Routine + education guidance + EFT (once a day, 15 min each time, for 7 consecutive days)	18–60	47	Routine treatment + health guidance	18–60	④
A (2020) [52]	Malignant tumors (liver cancer, stomach cancer, lung cancer + others)	RCT	32	EFT (2–8 days after admission, 40 min each time)	65.3 ± 7.2	32	Routine (medication guidance + health education + dietary care + posture care)	66.1 ± 6.9	①⑤
Xiao (2021) [56]	Cancer	RCT	30	EFT (4 weeks, once a day, 8–10 min each time)	18–60	28	Routine (diet + medication guidance + health education)	18–60	③
Guo2 (2022) [51]	Breast cancer	RCT	30	Routine + EFT (3 times a day, 10–15 min each time, for 2 weeks)	18–60	30	Routine treatment	18–60	③④

Note: S=Soldier ; N=Normal person ; ① = Anxiety ; ② = Depression ; ③ = Anticipatory sadness ; ④ = Psychological pain ; ⑤ = Pain ; ⑥ = Sleep quality ; ⑦ = Self-image; ⑧ = Happiness; ⑨ = Self-efficacy; ⑩ = Disease acceptance; ⑪ = Self-perceived burden; ⑫ = Fatigue;

–6.03], $P < .001$), attitudes toward death (MD = –2.71, 95 % CI [–3.12, –2.31], $P < .001$), physical symptoms (MD = –2.68, 95 % CI [–3.41, –1.94], $P < .001$), religious comfort (MD = –1.44, 95 % CI [–2.19, –0.70], $P = .001$), and perceived social support (MD = –2.38, 95 % CI [–2.73, –2.03], $P < .001$), with the EFT group reporting benefits. However, EFT had no effect on illness adjustment or self-awareness (Fig. 4–10).

3.2.4. Psychological distress

Only two studies assessed the impact of EFT on psychological distress, involving a total of 153 participants, with 76 in the EFT group and 77 in the control group. The heterogeneity test results ($\text{Chi}^2 = 155.02$, $P < .001$, $I^2 = 99\%$) indicated significant heterogeneity between the study groups. The findings revealed no statistically significant difference in psychological distress between people with cancer who received EFT treatment and controls (MD = 1.09, 95 % CI [–4.30, 6.48], $P = .69$) (Fig. 11).

3.2.5. Sleep quality

Two studies reported on sleep quality, including a total of 205

patients, with 102 in the EFT group and 103 in the control group. One study further subdivided the patient into military and non-military groups to investigate the effects of EFT on sleep quality among these distinct populations undergoing cancer treatment. Heterogeneity analysis indicated significant heterogeneity among the studies ($\text{Chi}^2 = 6.03$, $P = .05$, $I^2 = 67\%$). The results demonstrated a statistically significant improvement in sleep quality among people with cancer receiving EFT treatment (MD = –1.96, 95 % CI [–2.80, –1.13], $P < .001$) (Fig. 12).

3.2.6. Other outcome measures

Based on the review of the eight distinct outcome measures reported across various studies, the group differences ranged from small to large in magnitude. Some of these differences were statistically significant, while others were not, reflecting the variability across the different measures.

3.2.7. Risk of bias

The results indicated that two studies [48,49] used a double-blind randomization method, seven studies [47–53] provided detailed descriptions of the randomization procedure, three studies did not report

Table 3
AMSTAR 2 quality assessment results of included literature.

Author	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12	Item 13	Item 14	Item 15	Item 16	Rating overall confidence
Anggreini (2021) [54]	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Moderate
Ningsih (2015) [55]	YES	NO	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Low
Kalroozi (2022) [48]	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	High
Fan (2018) [56]	YES	NO	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Low
Fan (2018) [50]	YES	NO	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Low
Xie (2020) [49]	YES	NO	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Low
Liao (2019) [53]	YES	NO	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Low
Guo1 (2020) [47]	YES	NO	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Low
A (2020) [52]	YES	YES	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Moderate
Xiao (2021) [56]	YES	YES	Partial Yes	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	Moderate

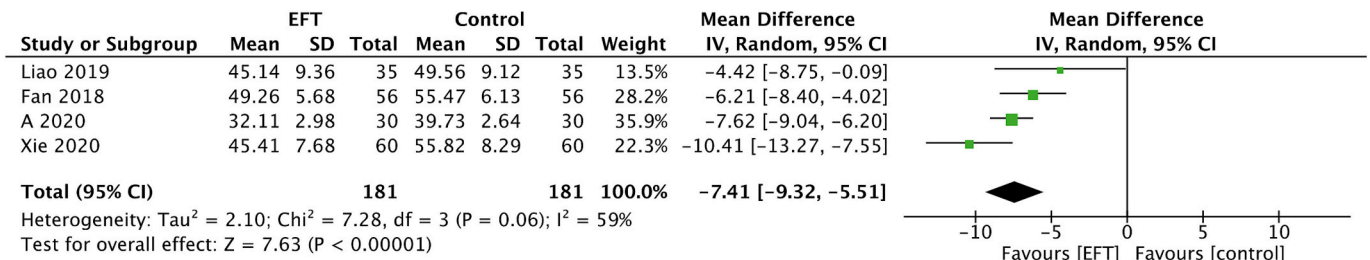


Fig. 2. Forest plot for meta-analyses for the differences in depression scores between groups.

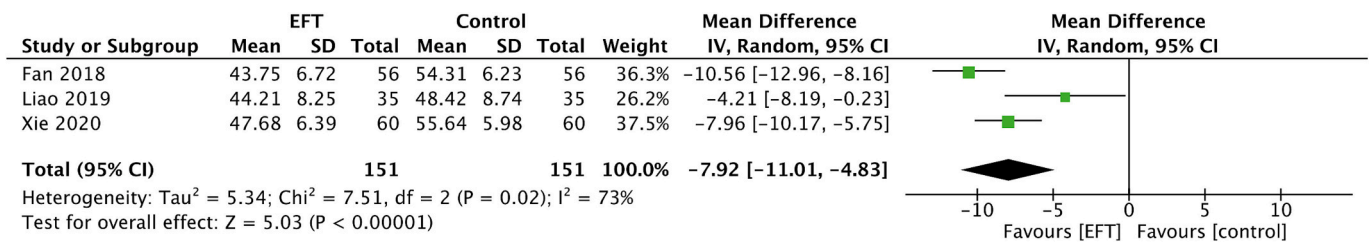


Fig. 3. Forest plot for meta-analyses for the differences in anxiety scores between groups.

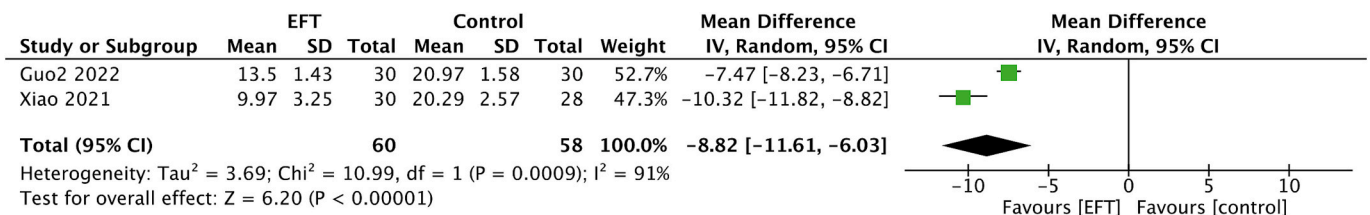


Fig. 4. Forest plot for meta-analyses for the differences in expected sadness scores – Sadness and anger (A).

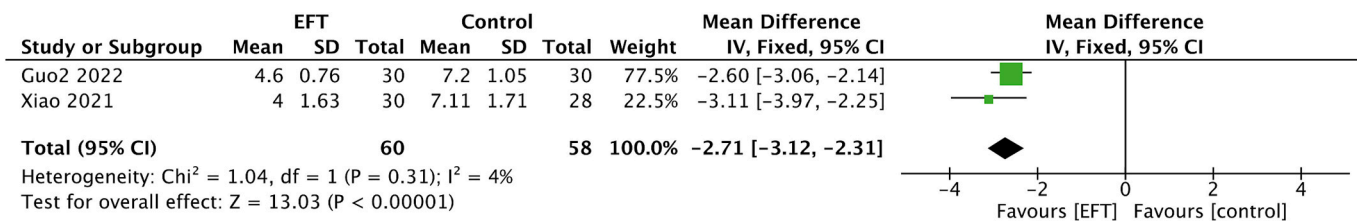


Fig. 5. Forest plot for meta-analyses for the differences in expected sadness scores – Attitude towards death (B).

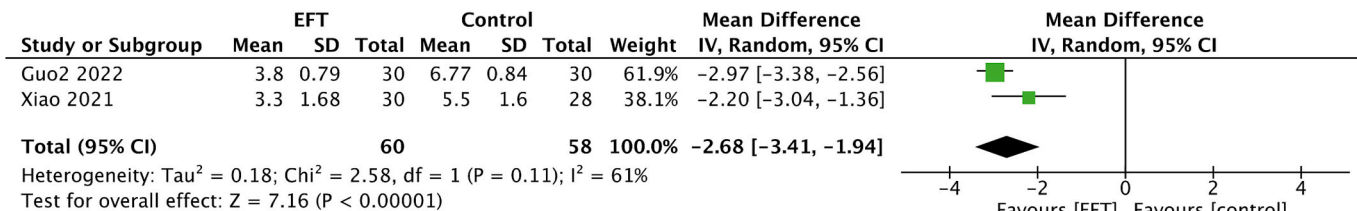


Fig. 6. Forest plot for meta-analyses for the differences in expected sadness scores – Physical symptoms (C).

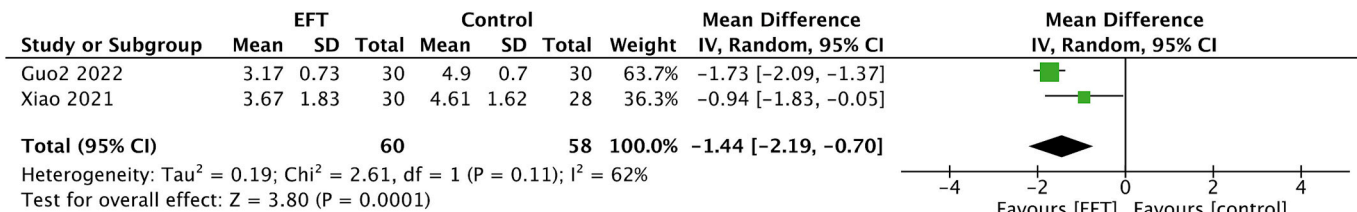


Fig. 7. Forest plot for meta-analyses for the differences in expected sadness scores – Religious comfort (D).

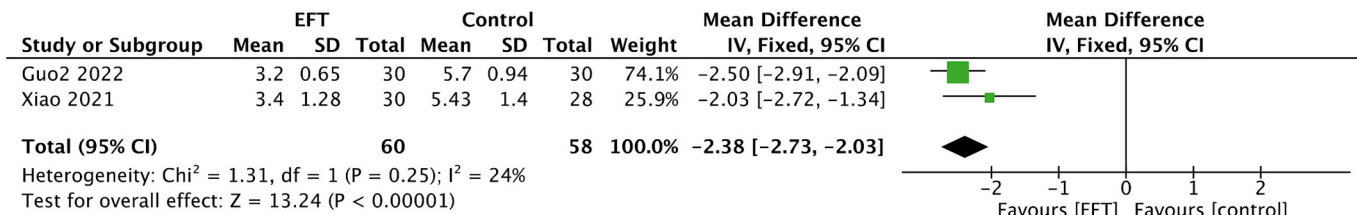


Fig. 8. Forest plot for meta-analyses for the differences in expected sadness scores – Perceived social support (E).

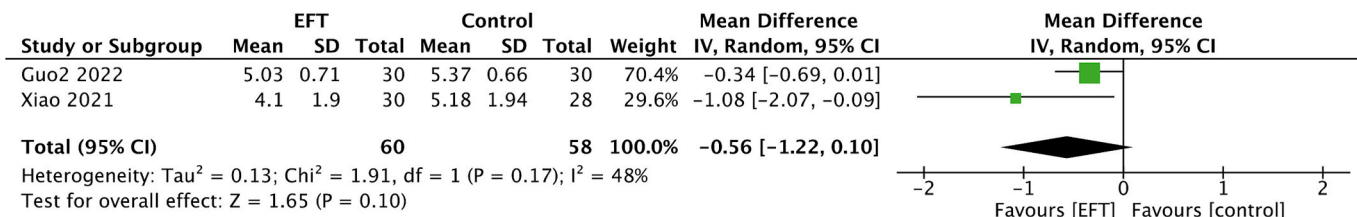


Fig. 9. Forest plot for meta-analyses for the differences in expected sadness scores – Disease adjustment (F).

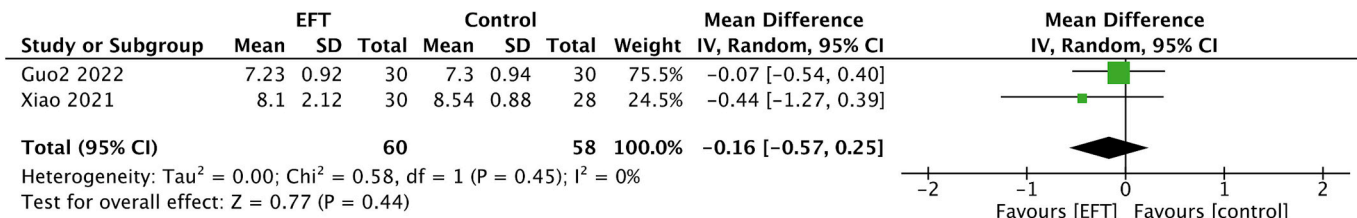


Fig. 10. Forest plot for meta-analyses for the differences in expected sadness scores – Self-awareness (G).

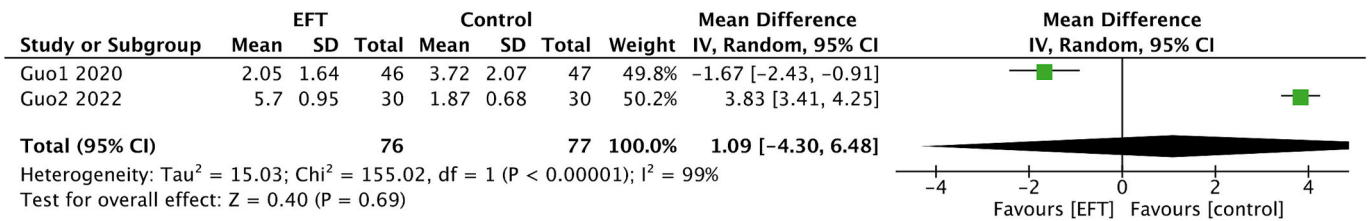


Fig. 11. Forest plot for meta-analyses for the differences in psychological distress scores between groups.

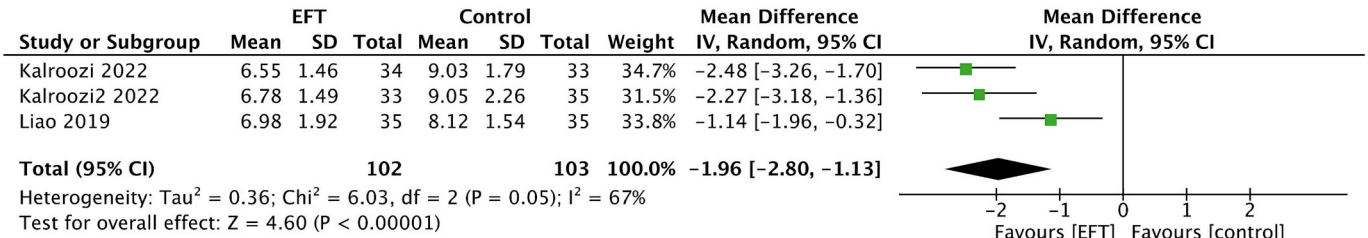


Fig. 12. Forest plot for meta-analyses for the differences in sleep quality scores between groups.

whether allocation concealment was implemented [54–56], and four studies did not clearly report the number of participants lost to follow-up, the number of withdrawals, or whether intention-to-treat analysis was conducted [47,51–53] (Fig. 13).

4. Discussion

This review synthesizes the existing literature on EFT and evaluates its effects on psychological distress, quality of life, and physiological indicators in people with cancer. Our results showed that EFT significantly reduced depressive symptoms in cancer patients, aligning with previous studies that highlight its efficacy in treating depression [57]. Regarding anxiety reduction, although some heterogeneity was observed across studies, the random effects model still indicated a significant reduction in anxiety symptoms. In terms of anticipatory grief, EFT was found to improve several dimensions, including grief-related anger, attitudes toward death, physical symptoms, religious comfort, and perceived social support. However, no significant effects were observed on illness adaptation and self-awareness. This could be attributed to the nature of EFT, which primarily focuses on emotional and cognitive adjustments rather than deeper changes in self-concept or illness adaptation. Additionally, our analysis revealed a positive impact of EFT on sleep quality, suggesting that it improves not only emotional and psychological health but also the overall quality of life for cancer patients. Overall, while EFT demonstrates positive effects on emotional and psychological outcomes, its effectiveness may vary across different dimensions.

These findings align with previous research demonstrating the efficacy of EFT in reducing psychological distress [57] and improving

quality of life in people with cancer [58]. And has a good effect on heart rate, immunity, and blood pressure [23]. Furthermore, our results contribute to the growing body of evidence supporting the use of EFT beyond cancer care, as it has also been shown to benefit other populations, including those with post-traumatic stress disorder (PTSD) [59], phobias [60], and anxiety disorders [29]. For example, a study on veterans found that EFT significantly reduced PTSD symptoms and improved overall well-being [24]. Relieve stress and burnout for healthcare workers and students during the COVID-19 pandemic [61]. In light of these findings, it is clear that EFT holds promise as an effective intervention for a wide range of psychological issues.

Despite the promising findings, there are several limitations in this review. First, the number of included studies was relatively small, and the quality of some studies was low. Furthermore, the diversity of assessment tools used across studies introduced heterogeneity, which may have influenced the results. Additionally, all of the included studies relied on self-report scales, which are vulnerable to biases such as recall bias, social desirability bias, and selective reporting. We recognize the potential impact of these biases on the results of our review. To enhance the reliability and validity of future studies, we recommend incorporating more objective measurement methods or combining self-report scales with other data sources.

5. Conclusion

Our results suggest that EFT may help to alleviate symptoms of depression, anxiety, and anticipatory grief and improve sleep quality in cancer patients. However, further controlled research is needed to determine its effects on other psychological indices such as

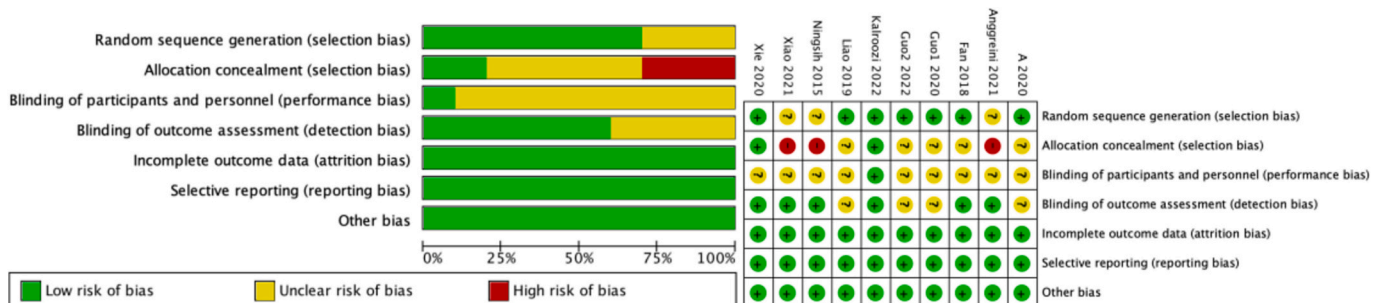


Fig. 13. Risk of bias assessment.

psychological distress, illness adaptation, and self-awareness. Therefore, based on these findings, we recommend that the clinical application of EFT be tailored to the individual needs of patients, with treatment duration and methods adjusted accordingly to optimize outcomes. Future research should focus on standardizing EFT protocols and conducting large-scale, multicenter randomized controlled trials to further validate its effectiveness and feasibility.

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CRediT authorship contribution statement

Dandan Zheng: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Xianghao Lin:** Writing – review & editing, Methodology, Funding acquisition. **Xiaofen Gao:** Supervision, Resources. **Lifei Wang:** Validation, Software. **Mingyuan Zhu:** Writing – review & editing, Writing – original draft.

Declaration of competing interest

None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jpsychores.2025.112088>.

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