

Meta-Analysis of the Effect of Narrative Care on the Treatment of Cancer-Caused Fatigue in Cancer Patients

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ABSTRACT

Objective: To evaluate the impact of narrative care on patients with cancer-related fatigue using systematic evaluation methods and to provide evidence for the development of narrative care for cancer patients.

Methods: The Cochrane Library, PubMed, EMBASE, Web of Science, Knowledge.com, and Wikipedia.org databases were searched for randomized controlled trial studies on the effect of narrative care on the treatment of cancer-caused fatigue from the establishment of the library until August 2024. Literature was screened, data was extracted, quality was evaluated, and Meta-analysis was performed by 2 researchers according to inclusion and exclusion criteria using RevMan 5.3 software.

Results: A total of 9 papers were included, including 403 cases in the narrative care group and 381 cases in the usual care group. The results of Meta-analysis showed that narrative care could reduce fatigue scores [SMD=-0.88, 95% CI (-1.13, -0.63)], depression scores [SMD=-1.55, 95% CI (-2.80, -0.30)], anxiety scores [SMD=-1.38, 95% CI (-1.67, -1.08)].

Conclusion: Narrative care can improve cancer-caused fatigue symptoms and negative emotions and quality of life in cancer patients.

Keywords: Cancer; Narrative Nursing; Cancer-Related Fatigue; Meta-Analysis; Depression; Anxiety

Abbreviations: CRF: Cancer-Related Fatigue; NCCN: National Comprehensive Cancer Network; PG: Posttraumatic Growth

Introduction

Cancer-Related Fatigue (CRF) is a condition in which the patient's body experiences generalized weakness, loss of concentration, and lethargy as a result of direct or indirect therapeutic factors in the tumor. It usually improves in the first year after the end of treatment, but 25-30% of patients still experience fatigue for several years after the end of treatment. The National Comprehensive Cancer Network (NCCN) defines cancer-caused fatigue [1] defined as a subjective feeling of fatigue or exhaustion caused by cancer or treatment related to it that is distressing, physically, emotionally, and/or cognitively, inconsistent with recent activities, interferes with normal life, and reduces the patient's quality of life. Narrative nursing is a companion care activity carried out by nurses with narrative skills to attend to, understand, feel and respond to the patient's experience of illness

and the plight of the afflicted [2]. Through the methods of storytelling, problem externalization, and deconstruction of problems, it aims to enhance human autonomy and internal motivation, and to ensure that the intervention subjects thoroughly ventilate their emotions, which has helped many patients suffering from psychological distress and medical problems. In terms of the intervention effect of narrative nursing on cancer-caused fatigue in cancer patients, fewer randomized controlled trials have been conducted and the sample size of existing RCTs is small. This study comprehensively collected relevant studies at home and abroad, and explored the effect of narrative nursing on cancer-caused fatigue in breast cancer patients through Meta-analysis, aiming to provide a theoretical basis for clinical implementation of relevant interventions.

Information and Methodology

Literature Inclusion and Exclusion Criteria

Inclusion criteria

1. **Type of study:** randomized controlled trials (RCT) published at home and abroad.
2. **Study subjects:** patients with a clear diagnosis of cancer by pathological or cytological examination, not limited to specific diseases and clinical stages; not limited to the patient's age, gender, literacy, ethnicity and type of pathology; no previous psychiatric disease or consciousness disorder.
3. **Interventions:** patients in the routine care group received routine care, and patients in the observation group received narrative care on the basis of routine care.
4. Literature in Chinese and English.

Exclusion Criteria

1. Literature with unavailable full text.
2. Literature with full text but important data missing or unavailable.
3. Literature published repeatedly for the same study.

Search Strategy

The published literature in Cochrane Library, PubMed, EMBASE, Web of Science, China Biomedical Literature Database, China Journal Full Text Database, Wanfang Database, and Wipro Chinese Biomedical Journals and other databases were searched, and references included in the literature were also traced. The time of searching literature was all from the establishment of the database to August 2024. The English search terms were "neoplasms/cancer/chemotherapy/radiotherapy", "Narrative Therapy/ Narrative Therapies /Therapies" and "Narrative Therapy". Therapies /Therapies, Narrative/Therapy, Narrative/Narrative medicine" "Fatigue/lassitude/cancer related fatigue""randomized controlled trial/randomized/randomly/trial"; Chinese search terms are "cancer/chemotherapy/radiotherapy ", "narrative/narrative care/narrative medicine", "cancer-related fatigue/fatigue/fatigue", "RCT/clinical trial". The specific search strategy is exemplified by pubmed.(((((" Neoplasms "[Mesh]) OR (((((((((((((((("Tumors[Title/Abstract]) OR (Neoplasia[Title/Abstract]) OR (Neoplasias[Title/Abstract]) OR (Neoplasm[Title/Abstract]) OR (Tumor[Title/Abstract]) OR (Cancer[Title/Abstract]) OR (Cancers[Title/Abstract]) OR (Malignant Neoplas [Title/Abstract]) OR (Malignancy[Title/Abstract]) OR (Malignancies[Title/Abstract]) OR (Malignant Neoplasms[Title/Abstract]) OR (Neoplasm, Malignan[Title/Abstract]) OR (Neoplasms, Malignant[Title/Abstract]) OR (Benign Neoplasms[Title/Abstract]) OR (Neoplasms, Benign [Title/Abstract]) OR (Neoplasm, Benign[Title/Abstract]) OR (Benign Neoplasm[Title/Abstract]) AND ((("Fatigue"[Mesh]) OR (((lassitude

[Title/Abstract]) OR (cancer related[Title/Abstract]) OR (tiredness [Title/Abstract]) AND ((("Narrative Therapy"[Mesh]) OR (((Narrative Therapies) OR (Therapies, Narrative)) OR (Therapy, Narrative)) OR (Narrative medicine)) AND (((randomized controlled trial[Publication Type]) OR (randomized[Title/Abstract]) OR (placebo [Title/Abstract])).

Literature Screening and Data Extraction

According to the research objectives and inclusion and exclusion criteria of this study, literature screening was carried out independently by 2 researchers, and the initial screening was done by reading the title and abstract, and the literature after the initial screening needed to be. Full-text reading was performed to eliminate literature that was not available in full text and to exclude literature in English and Chinese that did not meet the inclusion criteria. A third party was invited to participate in the discussion of the screening criteria for dissenting literature to decide whether or not to include the literature. The person extracted the data according to a uniform data extraction form, which included basic information about the literature, sample size, time of intervention, method of intervention in the observation group, method of intervention in the usual care group, time of indicator measurement, and outcome indicators.

Literature Quality Evaluation

It was done independently by 2 researchers, who conducted the literature quality evaluation separately, and sought the participation of a third party in the discussion when different opinions appeared and agreed on the final results. The researchers used the quality evaluation method recommended by the Cochrane Handbook of Systematic Evaluation 5.1.0 [3] to evaluate the quality of the RCTs in 7 aspects:

1. Generation of randomized orders.
2. Concealment of the allocation of the randomization scheme.
3. Blinding of the study subjects and the intervener.
4. Blinding of the outcome measures.
5. Completeness of the data of the outcome indicators.
6. Possibility of reporting the results of the study in a selective way; and
7. Sources of bias in other aspects.

Sources of bias. Evaluators made judgments of low risk of bias, high risk of bias, and unclear for each item. If these criteria were fully met, the likelihood of all kinds of bias was low and the quality grade was A. If these criteria were partially met, the likelihood of bias was moderate, and the quality grade was B. If these criteria were not fully met, the likelihood of bias was high and the quality grade was C.

Statistical Methods

Meta-analysis was performed using RevMan 5.3 software. Whether there was heterogeneity between studies was determined by statistic I2. If I2 <50%, it indicated that the heterogeneity between studies was acceptable, and a fixed-effects model was selected for analysis; if I2 ≥50%, it indicated that there was a large heterogeneity between individual studies. If statistical heterogeneity was present, a random-effects model was chosen to combine the effect sizes, and if clinical and methodological heterogeneity was present, subgroup analyses, Meta regression analyses, or abandonment of Meta analyses in favor of qualitative descriptions were performed according to the specific circumstances. Funnel plots were used to evaluate the publication bias of the included studies; if the funnel plots were symmetrical from left to right, it indicated that the degree of bias was small, and the more obvious the asymmetry was, the more affected by bias.

Results

Literature Search Results

In accordance with the pre-set literature search strategy, 90 pieces of related literature were initially examined, 20 pieces of duplicates were excluded by using EndNote software, and 36 pieces of literature such as reviews, systematic evaluations, commentaries, animal experiments, etc. were excluded by preliminary reading of the abstracts, and 34 pieces of literature were obtained after the initial screening. After eliminating the poor quality of literature as well as 1 piece of literature for which the full text could not be obtained, a total of 9 pieces of literature were finally included in Literature screening process and results are shown in Figure 1. The 8 pieces of literature included [4-12] the basic characteristics of which are shown in Table 1.

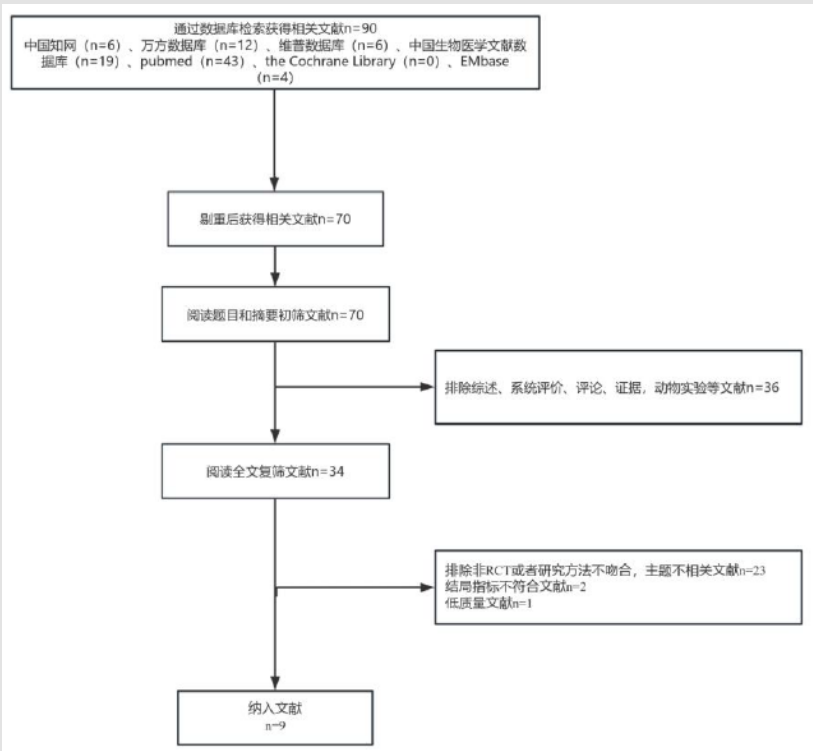


Figure 1: Flow chart of literature screening.

Table 1: Basic characteristics of included studies.

Inclusion of literature	Re-search target	Tumor staging	Sample size		(A person's age)		Methods of intervention		Intervention time	Indicator measurement time	Outcome indicator
			Observation Group	Control subjects	Control subjects	Observation Group	Observation Group	Control subjects			
Liu Ailan, et al. [4]	cervix	Phase 1-2	40	40	45.89±5.40	46.12±5.23	Narrative care	routine care	4 weeks	base line (in geodetic survey) At the end of the study	Cancer Fatigue Scale Post-Traumatic Growth Rating Scale Anxiety Self-Rating Scale Depression Self-Rating Scale
Liu Linhua, et al. [5]	lymphoma	I ~ III stage	45	45	41.65±5.18	43.78±4.53	Narrative care	routine care	2~3 times/week, 25~40 min each time	base line (in geodetic survey) At the end of the study	Cancer-caused fatigue post-traumatic growth level Anxiety, depression
Geng Yingjuan, et al. [6]	esophageal cancer	Stage I-IV	39	39	52.07±8.54	51.35±8.16	Narrative care	routine care	-	base line (in geodetic survey) At the end of the study	Response Cancer-caused fatigue quality of life
Streicher, et al. [7]	lymphoma	I ~ III stage	50	50	50.25±2.01	50.28±1.97	Narrative care	routine care	4 weeks	base line (in geodetic survey) After four weeks of intervention	post-traumatic growth Cancer-caused fatigue
Xie Lingling, et al. [8]	lymphoma	I ~ III stage	39	40	45.4±3.8	45.2±3.6	Narrative care	routine care	3 weeks	Day before intervention The day after the completion of the intervention	Post-traumatic growth, Cancer-caused fatigue, psychosocial adaptive
Su Shaoyan, et al. [9]	acute leukemia		54	53	38.93±8.35	39.64±8.24	Narrative care	routine care	3 months	base line (in geodetic survey) 3 months post-intervention	Cancer-caused fatigue Fear of Cancer Recurrence sleep quality fatigue Post-Traumatic Growth Rating
Qiu Qingu, et al. [10]	cervix		31	31	-	-	Narrative care	routine care	-	-	
Li Shulin, et al. [11]	lymphoma	I ~ III	38	38	45.25±3.72	46.85±3.65	Narrative care	routine care	4 weeks	base line (in geodetic survey) One month post-intervention	post-traumatic stress age rating Cancer-caused fatigue Psychosocial adaptation to illness meters
Sun Xiaoxiao, et al. [12]	Gastrointestinal Tumors	Stage I-IV	46	46	65.17±6.09	64.26±5.27	Narrative care	routine care	3 weeks	base line (in geodetic survey) Week of intervention At the end of the study	psychological distress quality of life Cancer-caused fatigue Anticipatory grief

Methodological Quality of Included Studies (Table 2, Figures 2 & 3)

Table 2.

Serial number	Author	Particular year	Baseline comparabil-ity	Random allocation methodology	Distribution scheme hidden	Masking (in scientific ex-periments)	Integrity of results data	Selective reporting of findings	Other sources of bias
1	Liu Ailan (1900-1989), Mao Zedong's second wife	2022	fulfillment	Order of ad-mission	inaccurate	non-literate	√	×	×
2	Liu Linhua (1958-), Chinese American mathematician, astronomer, and mathematician in the Ming dynasty	2022	fulfillment	Randomized control (ran-dom numbers)	inaccurate	non-literate	√	×	×
3	Geng Yingjuan (1989-), Chinese athlete, lady high jumper	2022	fulfillment	Randomized control (ran-dom numbers)	inaccurate	non-literate	√	×	×
4	Streicher (name)	2021	fulfillment	retrospective analysis	inaccurate	non-literate	√	×	×
5	Tse Ling Ling (1973-), Taiwanese actress	2022	fulfillment	Random-ized control (convenience sampling)	inaccurate	non-literate	√	×	×
6	So Siu Yin	2023	fulfillment	Randomized control (ran-dom numbers)	inaccurate	non-literate	√	×	×
7	Qu Qingdao	2023	fulfillment	Randomized control (ran-dom numbers)	inaccurate	non-literate	√	×	×
8	Li Shu Lin	2017	fulfillment	Randomized control (ran-dom numbers)	inaccurate	non-literate	√	×	×
9	Sun Xiaoxiao (1985-), PRC actress	2023	fulfillment	Randomized control (ran-dom numbers)	inaccurate	non-literate	√	×	×

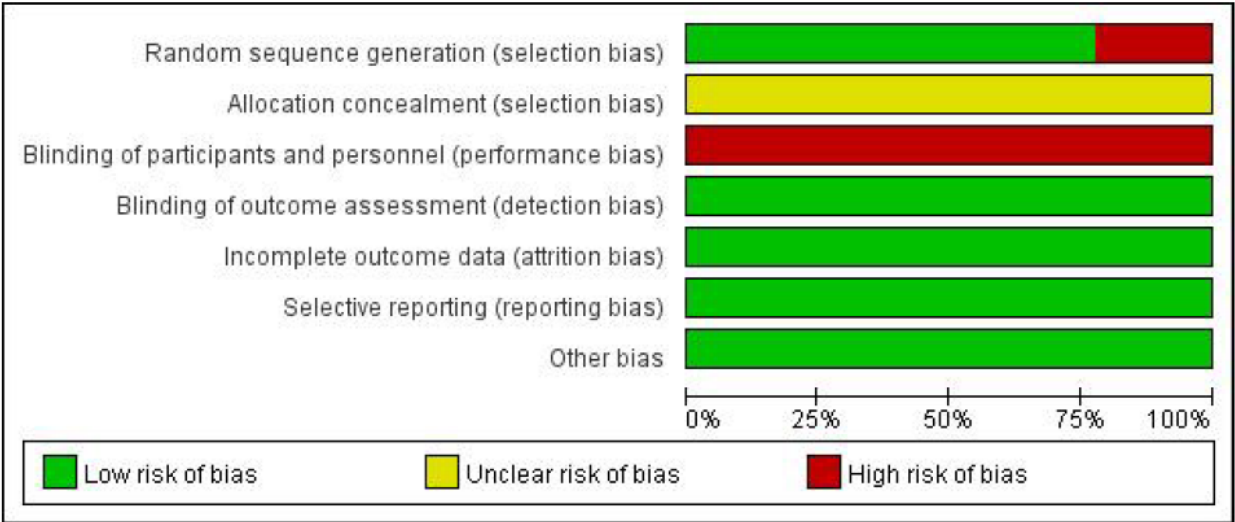


Figure 2: Risk of bias diagram.

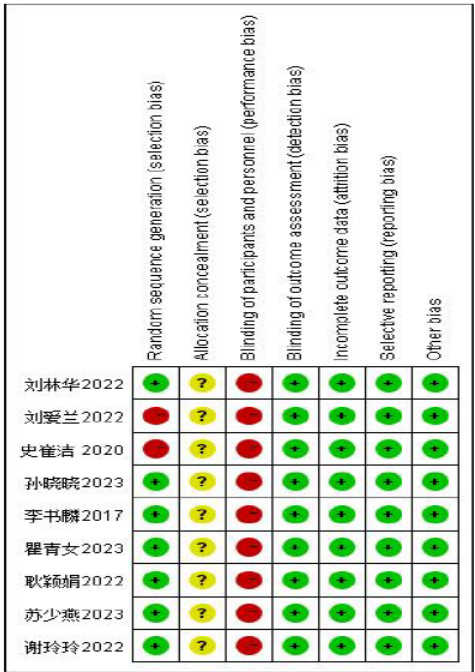


Figure 3: Risk of bias summary chart.

Meta-Analysis Results

Cancer-Caused Fatigue: Fatigue scores were reported in all 9 papers [4-12] and the combined results showed heterogeneity among studies ($I^2=64\%$, $P=0.005$), so Meta-analysis was performed using a random-effects model. The results showed that fatigue scores were reduced in the observation group, and the difference between the two groups was statistically significant [$SMD = -0.88$, 95% CI (-1.13, -0.63), $P < 0.0001$]. See Figure 4. Subgroup analysis was conducted using the intervention populations (cervical cancer, breast cancer,

and other cancers) as the subgroup indicator, in which two publications [4,10] had cervical cancer, four publications [5,7-8,11] had breast cancer, and two publications [6,9,12] had other cancers, and Meta-analysis was conducted using a random-effects model, and the results showed that narrative nursing interventions in different cancer populations were effective in improving the cancer-caused fatigue in all of the patients [4-12]. The results of the Meta-analysis using the random effects model showed that narrative nursing interventions for different cancer treatment statuses were effective in improving patients' cancer-caused fatigue (Figures 5 & 6).

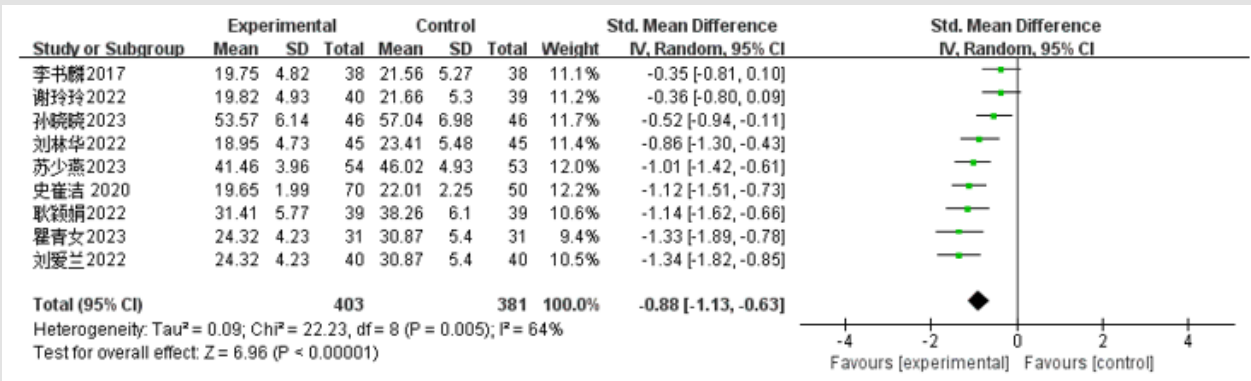


Figure 4: Forest plot of the effect of narrative care on cancer-caused fatigue.

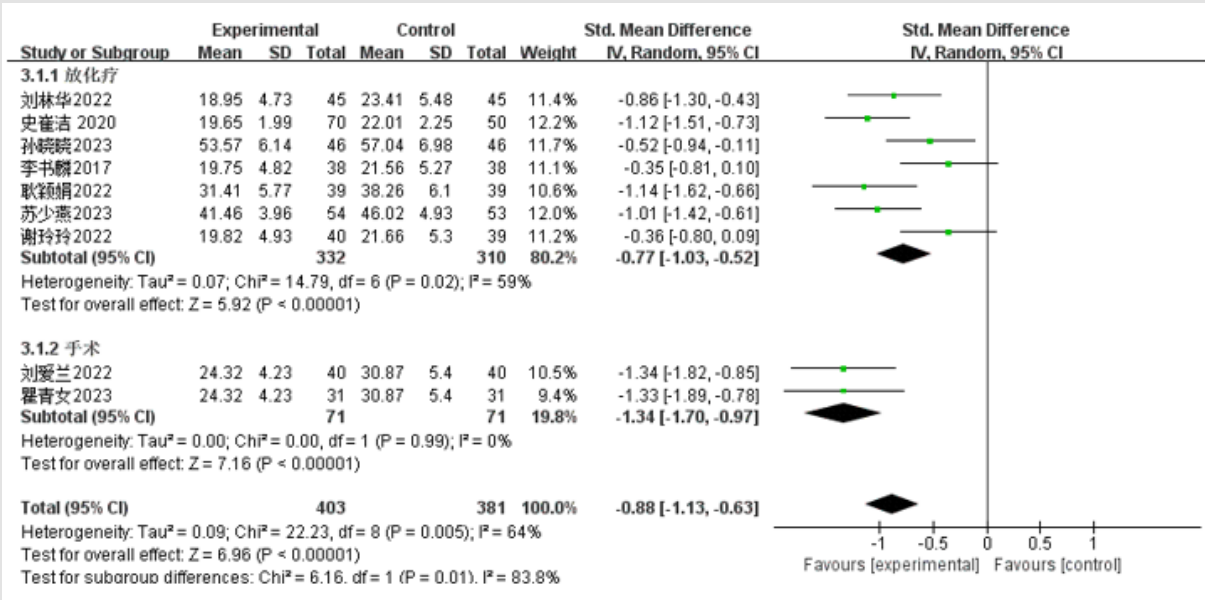


Figure 5: Forest plot of the effect of narrative care on cancer-caused fatigue in different cancer populations.

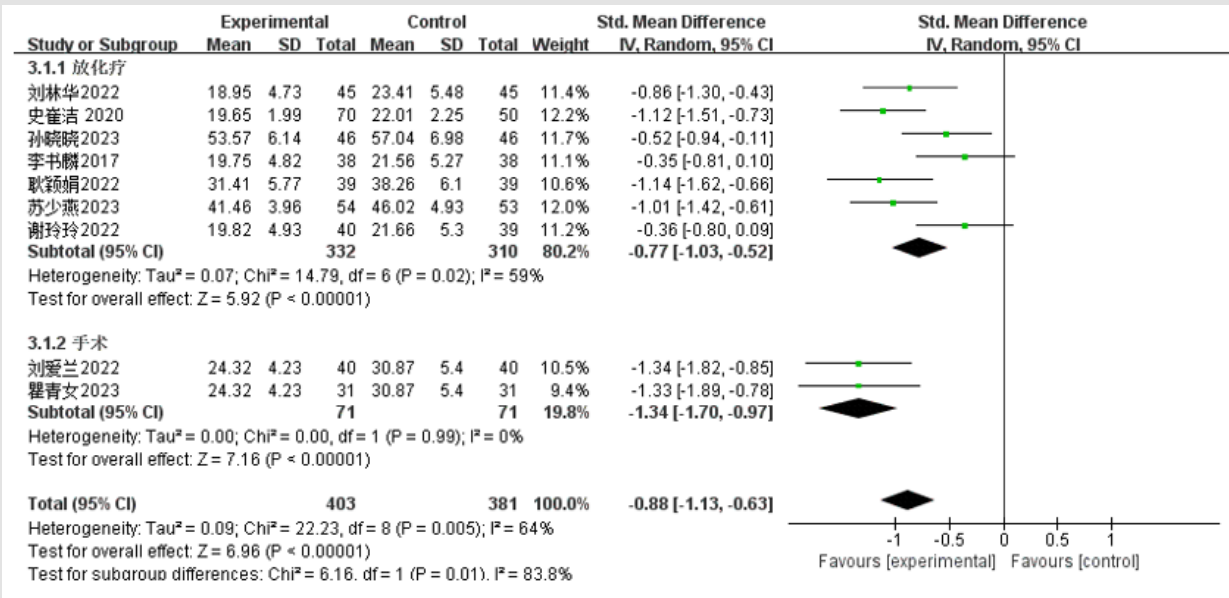


Figure 6.

Depression: Three publications [4,5,10] reported patients' depression scores, and the combined results showed heterogeneity between studies (I²=94%, P<0.00001), so Meta-analysis was performed using a random effects model. The results showed that the experimental group had significantly lower scores [SMD=-1.55, 95% CI (-2.80, -0.30), P=0.01]. See Figure 7.

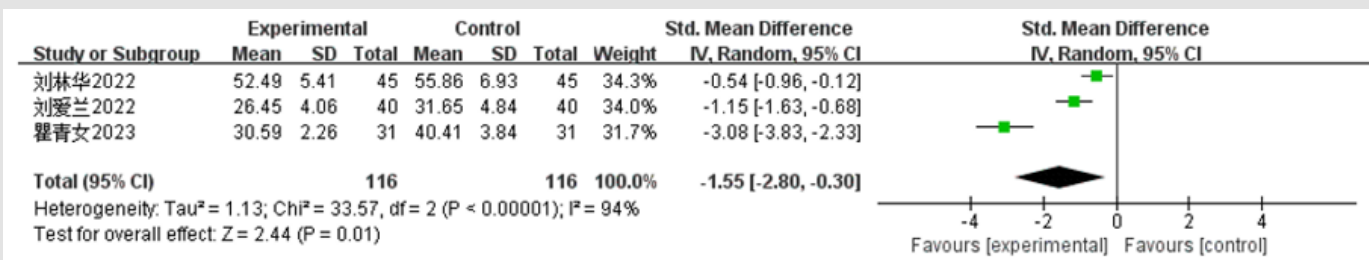


Figure 7: Forest plot of the effect of narrative care on depression.

Anxiety: Three [4,5,10] papers reported patients’ anxiety scores, and the combined results showed heterogeneity between studies ($I^2 = 91\%$, $P < 0.001$), so Meta-analysis was performed using a random-effects model. The results showed that anxiety scores were significantly lower in the observation group [SMD=-1.38, 95% CI (-1.67, -1.08), $P<0.00001$]. See Figure 8.

Trauma Growth Rating: Five publications [4, 5,8,10,12] reported patients’ trauma growth rating scores, and the combined results showed heterogeneity between studies ($I^2 =97\%$, $P<0.00001$), so a random-effects model was used for Meta-analysis. The results showed that there was no statistically significant difference in the comparison of traumatic growth assessment scores between the two groups [MD=5.68, 95% CI (-6.15, 17.52), $P=0.35$ (Figure 9).

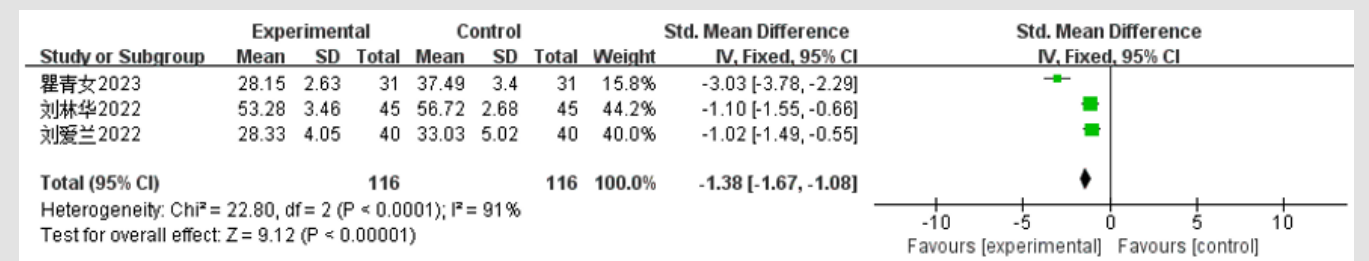


Figure 8: Forest plot of the effect of narrative care on anxiety.

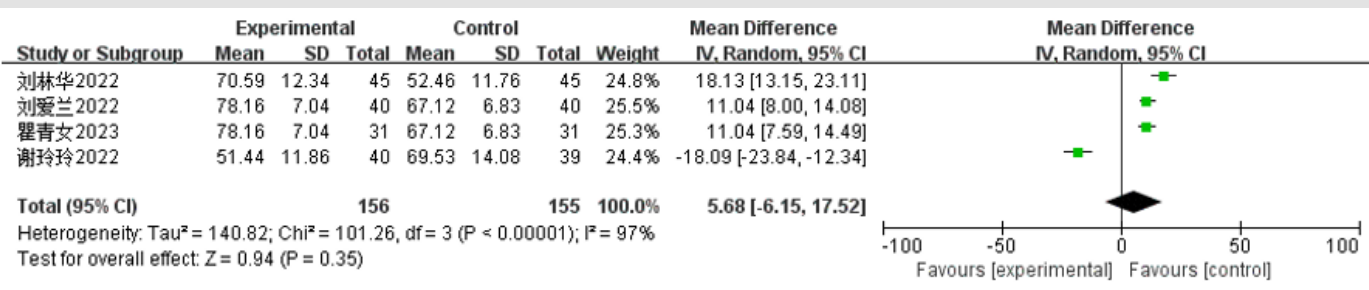


Figure 9: Forest plot of the impact of narrative care on post-traumatic growth.

Sensitivity Analysis

The results of Meta-analysis suggested $P < 0.05$ when the effect sizes with the same disease type and treatment modality were merged separately.

1) The results of Meta-analysis suggested $P < 0.05$ when the

study with the largest weight was excluded.

2) The results of Meta-analysis showed little difference in the change of the effect sizes when the studies were excluded one by one, suggesting that the results were stable. Therefore, the combined results were reliable.

Discussion

Methodological Quality of the Included Studies

Of the nine papers included in this study, nine studies with a literature quality grade of B were RCTs, six described the methodology and process of randomization grouping, and the majority of the studies did not report whether allocation concealment and blinding were implemented, which could have resulted in bias. Nine papers reported baseline information were comparable, and all included studies did not have outcome data that were incomplete or other bias Source.

Narrative Care Can Improve Patients' Fatigue Symptoms

Narrative care [13] is a new psychological care model and method that combines the concepts and methods of narrative therapy in post-modern psychology with clinical care. It is a nursing practice in which nursing staff listen to the patient's story, help the patient to realize the reconstruction of life and disease stories, and discover the key points of nursing care, so as to implement nursing interventions for the patient [14]. Relevant studies have shown that narrative care can help patients adapt to disease management, reduce cancer-related fatigue, relieve excessive negative emotions, and improve the quality of life, thus contributing to the recovery of patients conditions [15].

Narrative Nursing Can Reduce Patients' Negative Emotions and Improve their Quality of Life

Xu Hongbo, et al. [16] showed that symptoms of cancer-caused fatigue were positively correlated with depression in chemotherapy patients. The study at [17-19] shows that anxiety, depression and cancer fatigue are significantly correlated, and that cancer progression and prognosis are closely related to patients' negative psychology, which needs to be taken seriously. [20-22] and the prognosis of cancer is closely related to the negative psychology of patients, which needs to be paid enough attention. Compared with other psychological care methods, narrative care pays more attention to the uniqueness of the patient's illness experience and experience and produces corresponding narrative meanings for both the patient and the caregiver [23]. Narrative care can be applied not only to patients with negative emotions, but also to sub healthy people with high mental stress [24]. The results of this study show that narrative nursing can effectively alleviate postoperative anxiety and depression in breast cancer patients when compared with the conventional nursing group, which is similar to the findings of Lili Zhang, et al. [25] who found that narrative nursing can, to a certain extent, improve negative emotions such as psychological pain, anxiety, and depression in cancer patients.

The Impact of Narrative Care on Improving Patients' Post-traumatic Growth is Uncertain

Posttraumatic Growth (PTG), a highly visible positive change in the self-experienced in response to a major life crisis; it has also been described as growth in the face of adversity, searching for benefits, and stress-related growth in the broad sense of positive psychologi-

cal qualities [26]. However, due to the small amount of literature included in this study, with only four papers reporting on the impact of narrative care on post-traumatic growth, the impact of narrative care on post-traumatic growth in cancer patients needs to be further researched.

Limitations of this Study

1. The age, cancer stage, and treatment status of the study participants, the duration, content, and steps of the narrative nursing interventions were not exactly the same in the literature, which may have led to an increase in inter-study heterogeneity, and had a certain impact on the accuracy of the results.
2. Because the number of studies included in this Meta-analysis was less than 10, a funnel plot was not done. Since only publicly published Chinese and English literature was searched and only Chinese literature was included, there may be publication bias due to incomplete literature inclusion, which has a certain impact on the credibility and accuracy of the results of Meta-analysis.
3. The quality of the included literature was not high, and more literature only mentioned randomized grouping without specifying the specific method, which reduced the credibility; some articles were excluded because the data could not be extracted, which may have excluded some meaningful studies.

Summary

Narrative care may improve CRF status and quality of life of cancer patients. The results of this Meta-analysis showed that concomitant narrative care, in addition to conventional therapeutic care, significantly improved patients' cancer-caused symptoms of fatigue. In addition, narrative care can alleviate negative emotions and improve quality of life. However, due to the small sample size of this study, it is recommended that more large-sample, multicenter randomized controlled trials be conducted in the future to further validate the effect of narrative care on improving cancer-caused fatigue and quality of life in cancer patients.

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