Geriatric Nursing 61 (2025) 240–249

Contents lists available at ScienceDirect

Geriatric Nursing

journal homepage: www.gnjournal.com

# Summary of evidence on Traditional Chinese Medicine nursing interventions in hospice care for patients with advanced cancer

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ARTICLE INFO

*Article history:*
Received 5 June 2024
Received in revised form 1 November 2024
Accepted 4 November 2024
Available online xxx

*Keywords:*
Advanced cancer
Hospice care
Traditional Chinese medicine nursing interventions
Evidence summary
Evidence-based care

ABSTRACT

*Background:* Patients with advanced cancer experience physical and psychological pain that affects their quality of life. This review aimed to systematically search, evaluate, and summarize the best evidence on Traditional Chinese Medicine (TCM) nursing interventions in hospice care for patients with advanced cancer and to provide an evidence-based foundation for clinical care. The time limit for the search was from 2010 to September 2024.

*Methods:* A top-down search of relevant literature was conducted according to the "6S" evidence model, including clinical decisions, guidelines, best practices, evidence summaries, systematic reviews, expert consensus, and randomized controlled trials (RCTs). The literature was evaluated, and evidence was extracted independently by two researchers. The evidence was appraised using the Appraisal of Guidelines Research and Evaluation (AGREE) tool and integrated with an evidence-based team consisting of six members.

*Results:* Thirty-three publications were included, including four guidelines, two expert consensus, two clinical decisions, two evidence summaries, twenty-one systematic reviews, and two RCTs. Thirty-six indicators of best evidence were summarized from eight areas: TCM therapy, acupuncture therapy, moxibustion therapy, acupressure therapy, music therapy, traditional Chinese exercise therapy, auricular therapy, and aromatherapy.

*Conclusion:* This review summarizes the best evidence for TCM nursing interventions in hospice care for patients with advanced cancer, which can be used by clinical healthcare professionals to develop appropriate TCM nursing interventions in combination with the actual situation and with full consideration of the needs and wishes of the patients and their families to improve the patients' quality of life in advanced stages.



## Introduction

According to the International Agency for Research on Cancer (IARC), in 2022, there were 20 million new cancer cases and 9.4 million cancer deaths worldwide, with China accounting for 24.1 % of new cancer cases and 26.5 % of deaths globally, making it the leading country in terms of new cancer cases and deaths.[1] It is projected that the global burden of cancer in 2050 will increase by 77 % compared to that in 2022.[1] Cancer is currently the leading cause of death and a major obstacle to increasing life expectancy in all populations in all countries.[1,2] Most patients with cancer are diagnosed at intermediate or advanced stages and lose the best chance of treatment.[2] Patients with advanced cancer suffer from physical and psychological pain and face the threat of impaired sense of dignity, impaired functional status, and death, which seriously affects their quality of life and even leads to serious consequences of suicide.[3,4] For terminal cancer patients, healthcare workers focus on improving their quality of life by improving their various discomforts.[4,5] Hospice provides a full range of services to help end-stage patients manage their pain and discomfort to improve their quality of life.[4,5]

Traditional Chinese Medicine (TCM) nursing interventions are a kind of clinical nursing based on the guidance of TCM theory, and its nursing method can effectively control the symptoms of patients

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https://doi.org/10.1016/j.gerinurse.2024.11.007
0197-4572/$ – see front matter 

with advanced cancer through the combination of dialectical nursing, which means selecting different interventions according to the different symptoms.[6] The primary task of hospice care is to control the symptoms of patients. The advantages of Chinese medicine include simplicity, convenience, effectiveness, and affordability.[7] As a result the patient's adherence to it is high.[6,7] The World Health Organization (WHO) released the 11th edition of the International Classification of Diseases (ICD-11) in 2019, adding a chapter on TCM, which, for the first time, was included in the international mainstream medical statistics system.[8] Besides, many studies have investigated the clinical application of TCM nursing interventions in hospice care, such as acupuncture (promoting natural healing and pain relief by inserting fine needles into specific points on the body), moxibustion (using heat from burning herbal preparations containing mugwort to stimulate acupoints and promote better circulation of qi and blood), and qigong (a practice involving coordinated movement, breathing techniques, and mental focus to enhance energy flow and promote health).[9–11] These interventions can effectively improve quality of life, relieve symptoms, cognitive function, and fatigue, and play a positive role in psychological problems such as anxiety and depression, which have been reported in many countries such as England, the United States, Australia, China, and Malaysia.[9–11] In England, TCM nursing interventions have been incorporated into various hospice care models.[12] In the United States, the East-West Medicine Research Center of the University of California, Los Angeles, evaluated patients through TCM diagnosis and treatment, combined with TCM nursing measures, and designed personalized palliative care programs for patients with advanced cancer.[13] In conclusion, applying TCM nursing interventions in palliative care has shown a good international trend.

However, current clinical studies on hospice care for patients with advanced cancer are inadequate due to key design features, such as insufficient randomization of methodology, insufficient blinding and heterogeneity, and confounding variables.[10–12] These factors can introduce outcome bias.[10–12] In addition, the evidence for TCM nursing interventions in hospice care is more dispersed and unsystematic, making it difficult for clinical healthcare professionals to apply these findings.[14] Evidence summary is a summary of evidence (mainly guidelines, systematic reviews, and high-quality original studies) linked to healthcare interventions and activities around a specific topic or group,[15,16] which can help practitioners effectively understand the required evidence due to its thematic focus, reliable sources, comprehensive retrieval, refined content, and ease of understanding and dissemination.[17] It can be used to effectively solve the above-mentioned problems of incomplete and unsystematic evidence on applying TCM nursing interventions in hospice care. Therefore, this study systematically searches, evaluates, and summarizes the best quality evidence for TCM to provide an evidence-based foundation for healthcare professionals to implement TCM nursing interventions for hospice care in patients with advanced cancer.

## Method

### *Question identification*

Evidence-based questions were selected based on the PIPOST model.[18] The initial questions were as follows: P (Population): patients with advanced cancer. I (Intervention): TCM nursing interventions, including moxibustion, acupuncture, massage, cupping, gua sha, external application of Chinese medicine, fumigation, acupressure, aromatherapy, music, tai chi, exercise, baduanjin, qigong, acupoint injection, TCM rubbing, TCM sealing package, auricular acupoint therapy, etc. P (Professional): TCM doctors, nurses, and technicians in hospice care units. O (Outcome): the incidence and degree of symptoms, improvement of physical and mental state, and quality of life of patients with cancer. S (setting): hospice care units, hospice care centers, institutions, etc. T (Type of evidence): guidelines, expert consensus, clinical decision, evidence summary, best practice, systematic review, and randomized controlled trial.

### *Search strategy*

The top-down search was based on the "6S" model of evidence proposed by Haynes et al.[19] They pointed out that for clinical evidences, the search can be conducted from the top of the pyramid to the bottom, starting from systems in the "6S" model, followed by summaries, synopses of syntheses, syntheses, synopses of studies, and finally studies.[20] The search databases included BMJ Best Practice, UpToDate, MedPulse, Guidelines International Network (GIN), the Joanna Briggs Institute (JBI), Registered Nurses' Association of Ontario (RNAO), National Institute for Health and Care Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), the New Zealand Guidelines Group (NZGG), National Guideline Clearinghouse (NGC), National Comprehensive Cancer Network (NCCN), European Society for Medical Oncology (ESMO), American Society of Clinical Oncology (ASCO), Italian Association of Medical Oncology (AIOM), National Hospice and Palliative Care Alliance (NCHPC), National Administration of Traditional Chinese Medicine Medline (NATCM), Embase, SinoMed, CINAHL, PubMed, Web of Science, Cochrane Library, CNKI, Wanfang Database, VIP, and SinoMed. The search terms were created based on a combination of medical subject terms and free words. The literature search formula consisted of four parts. The first was cancer "cancer/ tumor/ oncology/ neoplasms". The second was hospice care "hospices/ hospice care/ palliative care/ terminal care/ disease management". The third was intervention, management or specific measures "moxibustion/ acupuncture/ massage/ cupping/ gua sha/ external application of Chinese medicine/ fumigation/ acupoint massage/ aromatherapy/ music/ tai chi/ qigong/ sports/ baduanjin/ exercise/ acupoint injection/ Chinese medicine rubbing/ auricular point therapy". The fourth was the restriction on the type of literature to be searched "guidelines/ systematic review/ evidence summary/ standards/ consensus/ meta-analysis/ clinical decision". The time limit for searching was from 2010 to September 2024.

### *Inclusion and exclusion criteria*

Inclusion criteria were as follows: (1) The study population included patients with advanced cancer. (2) The study involved TCM nursing interventions, including moxibustion, acupuncture, massage, cupping, gua sha, external application of Chinese medicine, fumigation, acupressure, aromatherapy, music, tai chi, exercise, baduanjin, qigong, acupoint injection, TCM rubbing, TCM sealing package, auricular acupoint therapy, etc. (3) The type of literature was guidelines, expert consensus, clinical decision, evidence summary, best practice, systematic evaluation, and randomized controlled trial. (4) The language of publication was Chinese or English.

The exclusion criteria included the following: (1) duplicate published literature; (2) unavailable full text; (3) brief version or guideline interpretation type of literature, meeting abstracts, and report plans.

### *Literature quality assessment*

Since the clinical decision-making resources from BMJ Best Practice and UpToDate belong to the top level of the "6S" pyramid of evidence, their evidence quality is high, and they are directly adopted to meet clinical evidence standards.

*Guidelines*

Clinical guidelines were adopted from the Appraisal of Guidelines for Research and Evaluation (AGREE II).[21] Higher scores on this evaluation criterion represent higher-quality guidelines, and there are three levels of quality. Grade A: number of areas with a score > 60 % = 6; Grade B: number of areas with a score ≥30 % and ≤60 % ≥3; Grade C: number of areas with a score <30 % ≥3. Guidelines with a quality rating of C were also excluded.

*Expert consensus*

Expert consensus was evaluated using the Australian JBI Center for Evidence-Based Health Care's Authenticity Evaluation Tool for Consensus Articles, which consists of six evaluation items, with the options of "yes, no, unclear" or "not applicable" for each item.[22]

*Systematic reviews*

Systematic reviews were conducted using the 2016 version of the Australian JBI Center for Evidence-Based Health Care's Systematic Evaluation Tool, which consists of 11 items, with the options to evaluate each item as "yes, no, unclear" or "not applicable".[23]

*Summary of evidence*

The summary of evidence was evaluated using the Critical Appraisal for Summaries of Evidence (CASE).[24]

*Randomized controlled trials (RCTs)*

RCTs were quality-assessed using the Australian JBI Center for Evidence-Based Health Care's Authenticity Assessment Tool for Randomized Controlled Trials, which consists of 13 items, with the options for evaluating the items as "yes, no, unclear" or "not applicable".[25]

*Recommended practice*

Recommended practice evaluations required retrospective evaluation of the original studies that adopted the evidence. The quality of these retrospective studies was assessed using the corresponding evaluation criteria of the Australian JBI Center for Evidence-Based Health Care (2016).

*Literature quality evaluation process*

The included literature was independently evaluated by two standardized evidence-based trained nursing practitioners, and in case of disagreement, the two researchers negotiated. If they could not agree, the decision was made after a joint discussion by the research team (consisting of four standardized evidence-based trained graduate nursing students and two evidence-based professors).

*Extraction, integration, and evaluation of evidence*

Two nursing workers with research background in evidence-based nursing independently read the included literature individually and extracted the best evidence related to TCM nursing interventions in hospice care for patients with advanced cancer, including the author, publication date, topic, type, and source of the literature. The research team worked together to translate and discuss the evidence in English and categorized and summarized the evidence according to its topic. When the content was complementary, the evidence was merged; when there was a conflict of evidence, it was selected according to the principle of the most recently published literature from high-quality literature and evidence-based medicine. Evidence was graded according to the JBI evidence pre-grading system.[26] According to the type of study design, the evidence was graded from 1 to 5. The more rigorous the study design, the higher the level of evidence; level 1 was the highest, and level 5 was the lowest. The FAME (Feasibility, Appropriateness, Meaningfulness, and Effectiveness) attributes of the evidence were assessed to determine the level of recommendation, i.e., level A recommendation (strong recommendation) and level B recommendation (weak recommendation).[27]

## Results

*Basic characteristics of included literature*

After the initial search, 1,791 articles were obtained, and after de-weighting, reading abstracts, and reading the full text, thirty-three articles were finally included, and the screening process is displayed in Fig. 1. Among these, there are four guidelines,[28,29,30,31] two expert consensus,[32,33] two clinical decisions,[34,35] two evidence summaries,[36,37] twenty-one systematic reviews, [38–58] and two RCTs.[59,60] The basic characteristics of the included studies are presented in Table 1. The screening process is illustrated in Fig. 1.

*Quality evaluation results of the included literature*

*Quality evaluation results of clinical decision-making*

This study retrieved two clinical decisions from UpToDate that were directly included.[34,35]

*Quality evaluation results of the guidelines*

Four guidelines were included in this study, including one from PubMed,[28] one from the ASCO,[29] one from the ESMO,[30] and the last one from NATCM.[31] After evaluation using the AGREE tool, the quality of the two guidelines was A,[29,31] and the quality of the two guidelines was B.[28,30] The results of the quality evaluation are detailed in Table 1 in the Supplementary Materials.

*Quality evaluation results of the expert consensus*

Two expert consensus were included in this study,[32,33] originating from CNKI and PubMed. They were evaluated using the JBI expert consensus evaluation criteria, and the quality of the evidence was deemed high; therefore, they were included. The quality evaluation results are presented in Table 2 of the Supplementary Materials.

*Quality evaluation results of systematic reviews*

In total, twenty-one systematic reviews were included in this study, of which fourteen were retrieved from PubMed,[38,39,41,43–45,47–58] five from CNKI,[46,53,55–57] and two from the Cochrane Library.[40,42] This literature was included because of its more complete study design and higher quality. The results of the quality assessment are presented in Table 3 of the Supplementary Materials.

*Quality evaluation results of summary of evidence*

Two evidence summaries were included in this study, one from CNKI [37] and the other from JBI,[36] which were evaluated for quality using the CASE and were included because of their more complete study design and higher quality. The results of the quality evaluation are detailed in Table 4 in the Supplementary Materials.

*Quality evaluation results of RCTs*

Two RCTs were included in this study, both from CNKI,[59,60] and the authenticity evaluation tool for RCTs from the JBI Center for Evidence-Based Health Care in Australia was used for quality evaluation. Excepting for item 5 (whether or not blinding was applied to the intervener) and item 6 (whether or not blinding was applied to the outcome), the remaining items were rated as "yes". The above literature was included because of its more complete study design and higher quality. The results of the quality assessment are detailed in Table 5 of the Supplementary Materials

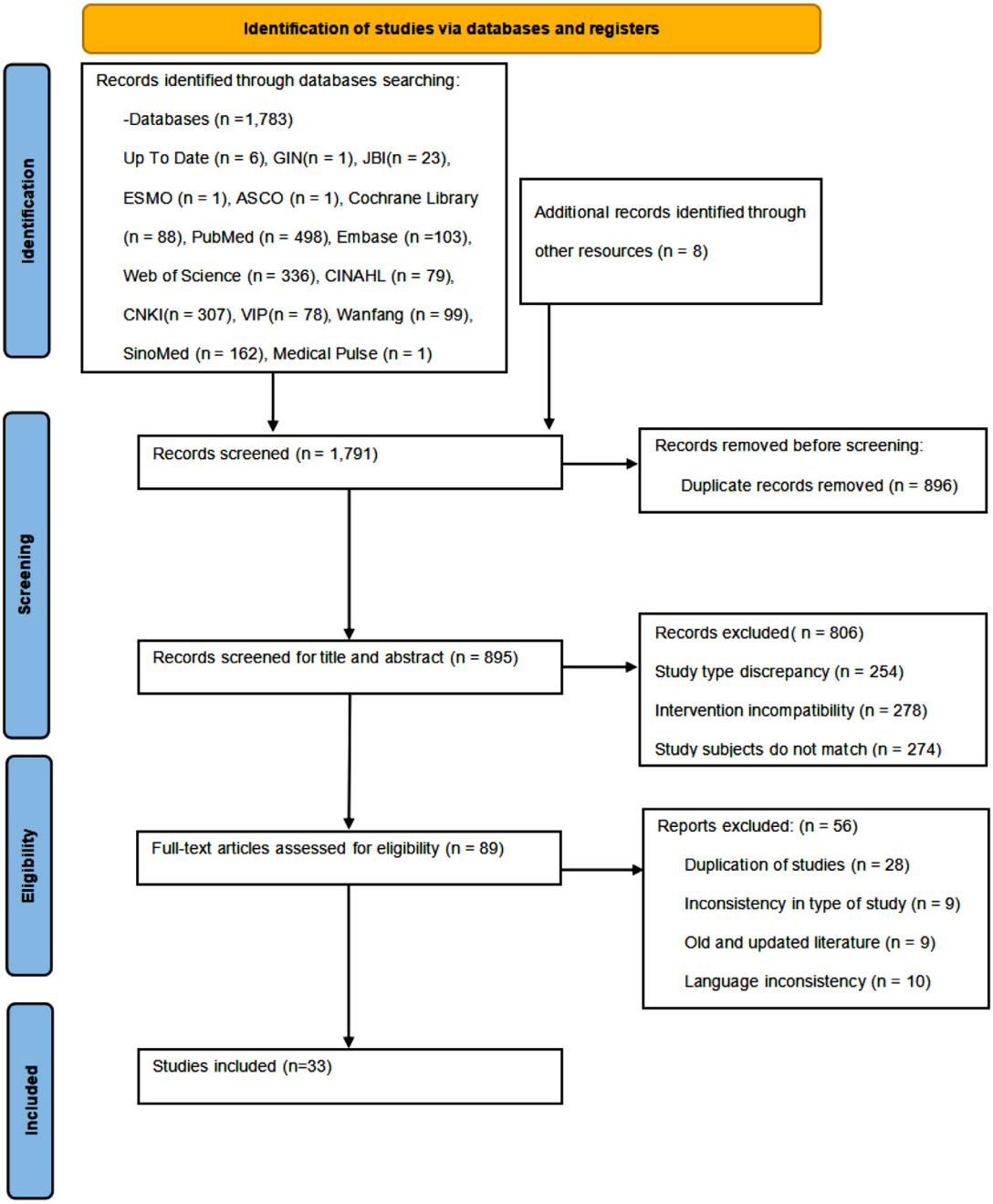


**Fig 1.** Flow diagram of literature search.

*Summary and description of evidence*

The literature review, evidence extraction, categorization, and synthesis of the TCM nursing intervention system in hospice care for patients with advanced cancer resulted in thirty-six indicators of evidence in eight areas: TCM therapy, acupuncture therapy, moxibustion therapy, acupressure therapy, music therapy, traditional exercise therapy, auriculotherapy, and aromatherapy (Table 2).

## Discussion

*Methodological quality assessment*

In this review, a comprehensive and rigorous literature search, quality assessment, and evidence grading were conducted on TCM nursing interventions in hospice care for patients with advanced cancer. Thirty-three articles were finally included in the review, including four guidelines, two expert consensus, two clinical decisions, two evidence summaries, twenty-one systematic reviews, and two RCTs. Among the four guidelines, two were of grade A, and the remaining two were of grade B. The four guidelines were all based on systematic reviews and formulated and published by experts, making them authoritative and instructive for clinical practice. Two expert consensus were evaluated according to the expert consensus criteria developed by the Australian JBI Center for Evidence-Based Healthcare (including six items). With the exception of item 6, which was evaluated as "unclear", the remaining five items were evaluated as "yes", indicating high-quality and authoritative evidence. Two clinical decisions were sourced from UpToDate and were of high quality. Two evidence summaries were evaluated using the CASE (including ten

**Table 1**
General information of the included literature

| Included literature | Year | Literature Source | Type of Literature | Literature Topic |
|---|---|---|---|---|
| Lam et al.[28] | 2019 | PubMed | guideline | Hong Kong Chinese Medicine Clinical Practice Guideline for Cancer Palliative Care: Pain, Constipation, and Insomnia. |
| Shavel et al.[29] | 2023 | ASCO | guideline | Integrative Oncology Care of Symptoms of Anxiety and Depression in Adults With Cancer: Society for Integrative Oncology-ASCO Guideline |
| Crawford et al.[30] | 2021 | ESMO | guideline | Care of the adult cancer patient at the end of life: ESMO clinical practice guidelines |
| NATCM[31] | 2015 | NATAM | guideline | Manual of TCM skills for nursing staff |
| Lin et al.[32] | 2016 | CNKI | expert consensus | Expert Consensus on the Use of Proprietary Chinese Medicines in Palliative Care for Tumors (2013) |
| De Valois[33] | 2024 | PubMed | expert consensus | Acupuncture in cancer care: recommendations for safe practice |
| Edzard et al.[34] | 2023 | UpToDate | clinical decision | Complementary and alternative therapies for cancer |
| Alessandra et al.[35] | 2022 | UpToDate | clinical decision | Rehabilitation and integrative treatment of cancer pain |
| Magtoto et al.[36] | 2022 | JBI | Summary of evidence | Palliative care: music therapy |
| Lu et al.[37] | 2023 | CNKI | Summary of evidence | Best evidence summary for palliative management of psychological distress in patients with advanced cancer |
| Zeng et al.[38] | 2019 | PubMed | Systematic reviews | Qigong or Tai Chi in Cancer Care: an Updated Systematic Review and Meta-analysis. |
| Wayne et al.[39] | 2018 | PubMed | Systematic reviews | Novakowski J, et al. Tai Chi and Qigong for cancer-related symptoms and quality of life: a systematic review and meta-analysis |
| Bradt et al.[40] | 2010 | Cochrane Library | Systematic reviews | Music therapy for end-of-life care. |
| Gao et al.[41] | 2019 | PubMed | Systematic reviews | The Effectiveness of Music Therapy for Terminally Ill Patients: A Meta-Analysis and Systematic Review |
| Pérez et al.[42] | 2021 | Cochrane Library | Systematic reviews | Music Therapy Interventions in Palliative Care: A Systematic Review. J Palliat Care. |
| Zeng et al.[43] | 2018 | PubMed | Systematic reviews | Complementary and Alternative Medicine in Hospice and Palliative Care: A Systematic Review |
| Faria et al.[44] | 2024 | PubMed | Systematic reviews | Efficacy of acupuncture on cancer pain: A systematic review and meta-analysis |
| Guo et al.[45] | 2024 | PubMed | Systematic reviews | Acupuncture-related therapy for cancer-related insomnia: An overview of systematic reviews and meta-analysis |
| Shuya et al.[46] | 2022 | CNKI | Systematic reviews | Effect of moxibustion on quality of life in tumor patients: network Meta-analysis |
| Wang et al.[47] | 2023 | PubMed | Systematic reviews | Efficacy and safety of moxibustion on cancer-related fatigue: a systematic review and meta-analysis of randomized controlled trials |
| Li et al.[48] | 2023 | PubMed | Systematic reviews | Moxibustion as an Adjuvant Therapy for Cancer Pain: A Systematic Review and Meta-Analysis |
| Corasaniti et al.[49] | 2023 | PubMed | Systematic reviews | Efficacy of Essential Oils in Relieving Cancer Pain: A Systematic Review and Meta-Analysis |
| Liu et al.[50] | 2022 | PubMed | Systematic reviews | Aromatherapy with inhalation can effectively improve the anxiety and depression of cancer patients: A meta-analysis |
| Kang et al.[51] | 2024 | PubMed | Systematic reviews | Effects of Aromatherapy on Quality Of Life and Pain In Patients With Cancer: A Meta-Analysis |
| Liu et al.[52] | 2024 | PubMed | Systematic reviews | Effects of Aromatherapy on Physical and Psychological Symptoms in Cancer Patients: A Systematic Review and Meta-analysis |
| Xujie et al.[53] | 2023 | CNKI | Systematic reviews | Meta-analysis of auricular acupuncture therapy in the treatment of chemotherapy related adverse reactions in cancer |
| Alhusamiah et al.[54] | 2024 | PubMed | Systematic reviews | The Effectiveness of P6 and Auricular Acupressure as a Complimentary Therapy in Chemotherapy-Induced Nausea and Vomiting Among Patients With Cancer: Systematic Review |
| Ruting[55] | 2023 | CNKI | Systematic reviews | Clinical efficacy and quality of life with auricular acupressure in prevention and treatment of cancer-related constipation:Meta-analysis |
| Xiue et al.[56] | 2022 | CNKI | Systematic reviews | Meta-analysis on acupoint acupressure to improve the sleep effect of patients with tumor and insomnia |
| Liu et al.[57] | 2022 | CNKI | Systematic reviews | Meta-analysis of efficacy and safety of auricular point pressing in treating cancer-induced fatigue |
| Han et al.[58] | 2020 | PubMed | Systematic reviews | Effectiveness of auricular point therapy for cancer-related fatigue: A systematic review and meta-analysis |
| Huajian et al.[59] | 2020 | CNKI | Randomized controlled trial | Application of five-element music gong-modes combined with acupoint massage in hospice care of patients with advanced gastric cancer |
| Yulan et al.[60] | 2018 | CNKI | Randomized controlled trial | Application of five-element music gong-modes combined with acupoint massage in hospice care of patients with advanced gastric cancer |

Note: European Society for Medical Oncology (ESMO), American Society of Clinical Oncology (ASCO), National Administration of Traditional Chinese Medicine Medline (NATCM)

items). Except for item 4, which was evaluated as "no", the remaining nine items were evaluated as "yes", indicating that the two evidence summaries were of high quality. Twenty-one systematic reviews were included. The Australian JBI Center for Evidence-Based Health Care's Systematic Evaluation Tool (2016) was used for evaluation. The evaluation results showed that all systematic reviews were of high quality. The quality of two RCTs was evaluated using the Australian JBI Center for Evidence-Based Health Care Randomized Controlled Trial Authenticity Evaluation Tool (including thirteen items). With the exception of items 5 and 6, which were evaluated as "no", the remaining eleven items were evaluated as "yes", with high-quality evidence. In summary, the included clinical decisions, guidelines, consensus, evidence summaries, systematic evaluations, and RCTs are of high quality and can provide the best evidence.

**Table 2**
Summary of evidence on Traditional Chinese Medicine nursing interventions in hospice care for patients with advanced cancer.

| Evidence items | Content of evidence | Level of evidence | Recommended level |
|---|---|---|---|
| TCM therapy | 1. TCM ((e.g., huazhanin, astragaluus) and selected vegetables and herbal mixtures, etc., can prolong the survival of patients, reduce the toxicity caused by conventional anticancer treatments, improve the body's immunity, and improve the quality of life of patients.[34,35] | 2b | B |
| | 2. Different TCM tonics can be selected according to different types of cancer pain, constipation, and insomnia.[28] | 5b | B |
| | 3. Proprietary Chinese medicines can be categorized into four major categories, namely, supportive of justice, tumor suppression, improvement of symptoms, and protection of organ function, and can be used according to the patient's own condition and symptoms and the main functions and toxic side effects of the drugs to choose different proprietary Chinese medicines for treatment.[32] | 5b | A |
| | 4. It is recommended to follow the method of taking medication used by ancient Chinese medicine practitioners in the Ming Dynasty, and patients with advanced cancer insomnia should take the medication one hour after lunch and one hour after dinner.[28] | 5b | B |
| | 5. TCM must be used under the guidance of a healthcare practitioner to avoid contraindications in compounding.[24,28,30,31] Meanwhile, to avoid reducing the efficacy of medicine, alcohol should not be consumed in general, and spicy, fatty, and other foods and beverages that should be avoided should be prohibited, as mentioned by healthcare professionals.[28,32,34,35] | 5b | B |
| Moxibustion therapy | 6. It is recommended to use individual fire dragon moxibustion, thunder fire moxibustion, fuyang fire moxibustion, wheat grain moxibustion, mild moxibustion, or other therapies (hot iron, stabbing, acupressure, etc.) on top of individual moxibustion to improve quality of life and physical and mental functions.[46] | 2b | A |
| | 7. Professional therapists are required to operate,[32,34] and when performing moxibustion, patients should not be emotionally agitated and should not be too full or too hungry, with attention given to distance and time. Moxibustion needs to be within the patient's tolerance level so that local skin flushing and burning sensation is acceptable, and attention is paid to adverse symptoms such as burns or halo moxibustion during the operation.[46,47,48] | 2b | A |
| | 8. This method is not recommended for people with large blood vessels, skin infections, a history of bleeding or a tendency to bleed, a history of asthma, or allergic diseases to moxa materials.[31] | 5b | B |
| Acupuncture therapy | 9. Acupuncture is a safe and effective non-pharmacological treatment for patients with symptoms such as nausea and vomiting, diarrhea and dry mouth, insomnia, pain, and cancer-related fatigue caused by chemotherapy,[24,30,31,33,40,41] and can be used as an adjunctive treatment for patients after first-line treatments. However, it needs to be considered in accordance with the patient's wishes and carried out under the operation of professional therapists.[34-35,44-45] | 2a | B |
| | 10. Acupuncture should be within the patient's tolerance level, and attention should be paid to the speed, depth, intensity, time, and technique of needle insertion, as well as the operation of related adverse symptoms such as site bleeding, skin irritation, discomfort, transient rash, electric shock, tingling sensation, etc., and if there is any abnormality, it should be handled and reported promptly.[34,35,44,45] | 2b | A |
| | 11. It is contraindicated in areas of skin infection or scarring, those with a history of bleeding or bleeding tendency, and those with needle-sickness.[33,34,35] | 5b | B |
| | 12. Prophylactic acupuncture treatment or 1∼5 times/week acupuncture treatment is recommended to effectively reduce the symptoms of dry mouth, pain, nausea, and vomiting to improve the quality of life of patients.[34,35,44,45] | 3b | B |
| | 13. Acupuncture point selection: Selection of acupoints related to different symptoms and TCM syndromes of patients with advanced cancer.[28]<br>(1) Insomnia: general acupoints - (Shenmen, Sanyinjiao, Baihui); special acupoints for TCM phenotypes - Heart and Spleen Deficiency (Heart Acupuncture Points, Sycotic Acupuncture Points, Spleen Acupuncture Points).[28]<br>(2) Pain: general acupoints - (Neiguan, Gongsun, Ximen, Zhongkou, Zhigou); special points for TCM typing - qi stagnation (Neiguan, Gongsun, Qimen, Zhongkou, Zhigou); phlegm-dampness obstruction (Fengsanli, Fenglong, Yinlingquan; blood obstruction); qi stagnation with blood stasis (Neiguan, Blood Hai, Diaphragm Acupuncture Point, Liangqiu Acupuncture Point); phlegm and stasis combined (Fenglong, Blood Hai, Fengsanli, Sanyinjiao, Guannei Acupuncture Point); qi and blood deficiency (Qi Hai, Zhongyin Jiao, Guannei); double deficiency type (Qihai, Zhongcai, Ashansanli, Blood Sea, Spleen Acupuncture Point, Lung Yu, Sanyinjiao Point).[28]<br>(3) Constipation: general acupoints - (Ashigaru Sanli, Upper Giant Hollow Point, Large Intestine Acupuncture Point); special points for TCM typing - qi and yin deficiency (Taixi, Yinlingquan, Sanyinjiao, Blood Sea, Tongli, Spleen Acupuncture Point, Body Pillar Acupuncture Point); qi transportation and stagnation type (Zhongkou, Xingmai); yang deficiency typing (Shenque, Qihai Acupuncture Points).[28] | 5b | A |
| | 14. Non-invasive acupuncture therapy (pestle and mortar therapy) is recommended to regulate the symptoms of anxiety, depression, and insomnia in patients.[60]<br>(1) Apparatus: "Taiji brand" mortar and pestle needle (Patent No. 89213016.4), copper needle tools, respectively, the seven Yao Mixed Pestle, the five-star Santai Pestle, the Vajra Pestle, and the Quixing Pen.[60]<br>(2) Acupoints: Acupoints can be selected according to different symptoms as per "Mortar and Pestle Acupuncture" (insomnia patients: Shendao Bajin, Baihui Bajin, Hechelu (Daxi vertebrae to Vital Gate section, Sanyinjiao, Shenmen).[60]<br>(3) Usage: alcohol sterilization can be used before use; the patient is instructed to take a sitting position or prone position, according to the patient's symptoms of the acupoints, according to the point knocking technique for 3∼5 min, running technique for 5 min, open and close the technique for 1 cycle; 1 time a day, each time for 30 min, for about 20 days.[60] | 2c | A |

(*continued*)

**Table 2** (*Continued*)

| Evidence items | Content of evidence | Level of evidence | Recommended level |
|---|---|---|---|
| Acupressure therapy | 15. Acupressure is derived from the Yellow Emperor's Classic of Internal Medicine, which can be effectively targeted to alleviate patients' symptoms of anxiety, depression, psychological pain, pain, and fatigue.[28,34,35] | 2a | B |
| | 16. Modality: Follow the doctor's instructions to determine the location of the acupoints, the choice of appropriate massage techniques, and intensity; each massage points for 1-2 min, to the extent that the local acupoints through the heat. Massage alone, massage combined with meditation, or massage combined with aromatherapy, with care taken to avoid massaging vulnerable areas such as innervating nerve damage, broken, fragile or sensitive skin, implanted medical devices, superficial tumors, or thrombosis.[28,34,35,37,43] | 2a | B |
| | 17. Time: according to the theory of meridian flow injection in Chinese medicine, choose the time of the sixth hour (09:00~11:00) of the day for massage or can also be done 1-2 hours after a meal.[31,59] | 3c | B |
| | 18. Acupuncture points and methods: recommended to use the point method (with the end of the finger or flexed interphalangeal joints on the site of the application of pressure, continuous pressure), massage Hundred Meetings point, the use of knocking method (with a specific part of the hand, or with a special instrument, in the treatment area of the repeated tapping percussion of a class of maneuvers, known as percussion class of maneuvers) or kneading method (with a certain amount of force pressed on a specific area, driven by subcutaneous tissues to do the circular movement of the maneuver) massage Neiguan, Shenmen, Hegu, Foot Sanli, Xiexi, Neiting, Yongquan acupoints, the threaded surface of the thumb is pressed at the acupoints, the rest of the fingers are placed in the right place, and the thumb drives the subcutaneous tissue in a circular massage.[31,37,59] | 3c | A |
| | 19. Patients should be used with caution by a professional under medical supervision for relief of disease, with severe cardiovascular disease contraindicated, and caution in patients with cardiac bypass when using percussion.[31,56] | 3b | B |
| Auricular therapy | 19. The addition of auricular pressure bean therapy to routine primary care or other therapeutic treatments can effectively alleviate patients' discomfort symptoms such as fatigue, constipation, insomnia, pain, nausea and vomiting, and chemotherapy-related symptoms.[53,54,55,56,57,58] | 2a | B |
| | 20. Methods of operation: using adhesive tape, the beans (mainly magnetic beads or Wang Bu Liuxing seeds) according to the "National Standard of the People's Republic of China GB/T13734-92 ear acupuncture point names and sites" accurately affixed to the ear acupuncture points, and apply pressure, pressure, pinch, and other external stimulation to produce a numbness, distension, pain, and other stimulating sensations, the process of the recommended alternating binaural pressure, and to observe the discomfort of its response.[53,54,55,56,57,58] | 2b | A |
| | 21. Operators and environment: it can be operated by nurses, patients, and family members in the home, community, or hospital after professional training.[57,58] | 2b | B |
| | 22. Acupuncture point stimulation can be selected based on the specific symptoms of each patient. It is recommended to press the acupoints repeatedly in sequence 2~6 times/d, 20 s-5 min/time, 2~5 times/d. It is further recommended that the treatment cycle be extended to 6 weeks or more, and on the basis of routine acupoints, evidence-based treatment, precise intervention, and the formation of scientific diagnostic and treatment specifications should be achieved.[28,37,53,54,55,56,57,58] | 2c | A |
| | (1) Psychological symptoms: It is recommended to routinely stimulate the auricular points of Shenmen, sympathetic, liver, and cortex.[53,54] | 2c | A |
| | (2) Nausea and vomiting: routine stimulation of Shenmen, sympathetic, spleen, and stomach auricular points is recommended.[53,54] | 2c | A |
| | (3) cancer-caused fatigue: routine stimulation of Shenmen, subcortical, sympathetic, liver, and spleen auricular points is recommended.[57,58] | 2c | B |
| | (4) Insomnia: routine stimulation of Shenmen, sympathetic, cortical, endocrine, and heart auricular points is recommended.[56] | 3c | B |
| | (5) Constipation: routine stimulation of auricular points of the large intestine, rectum, sympathetic, spleen, etc., is recommended.[55] | 3c | B |
| | 23. It is unsuitable for those who have localized inflammation, frostbite, or ulcers on the surface skin of the auricle and those who are allergic to the applied medicinal beans (mainly magnetic beads or Wang Bu Liuhang seeds).[31] | 5b | B |
| Traditional Chinese exercise therapy | 24. Traditional exercise therapy (such as tai chi and qigong) has a positive effect on quality of life, sleep, anxiety, depression, fatigue, immune function, and cortisol levels in patients with cancer.[29,34,35,38,39,43] | 2b | B |
| | 25. The need for an appropriate exercise program to be effectively designed by a specialist exercise rehabilitation therapist or clinical nurse with an understanding of cancer, side effects, and the physical abilities of the person with cancer, or relying on an interprofessional team to tailor an optimal, individualized exercise program for the patient.[35,38,39] | 2b | B |
| | 26. Frequency and periodicity: It is recommended that patients should engage in exercise more often but gradually, and it is suggested that Tai Chi can be performed 1 h/time, 3 times/week for 6~12 weeks.[34,35,38,39,43] | 3b | A |
| Music therapy | 27. For patients' symptoms of anxiety, depression, pain, and fatigue, five-element music therapy can be used, which is an effective and low loss-of-visit palliative care tool that can significantly reduce patients' symptoms of anxiety, depression, pain, and fatigue, increase patients' sense of hope and quality of life, and promote relaxation and well-being in terminally ill patients.[30,35,59,60] | 2a | B |
| | 28. Selection of the five elements of music: the five elements of music can be implemented according to the principle of the five tones to the five organs and considering the different cultural levels of the patients, the selection of the music of the horn, zheng, gong, shang, and yin which corresponds to patients with cancer themselves.[59,60] | 3c | A |
| | 29. Duration and decibel of music therapy: there are three most commonly used interventions-instrumental: performance, live music performance, and recorded music performance,[32,33,36,37,38,39] when using music therapy, the volume of the music is appropriate for the patient's comfort but should not exceed 70 decibels,[23,24] and intervention duration usually takes 15~40 min, 1~2 times per week.[34,35,40,41,42,43,59,60] | 3b | A |
| | 30. Implementation of music therapy: music therapy needs to create a quiet and undisturbed environment for the patients, and the trained music therapists should implement the music interventions, choose the music according to the patient's preference, and observe the patient's condition during the treatment process, and report any adverse situation in a timely manner.[36,59,60] | 2b | B |

(*continued*)

**Table 2** (*Continued*)

| Evidence items | Content of evidence | Level of evidence | Recommended level |
|---|---|---|---|
| Aromatherapy | 31. Aromatherapy extracts active ingredients (essential oils) from plants and applies them to the human body through inhalation/massage, which can improve the immunity of the patient's body and alleviate symptoms such as anxiety, depression, and pain.[29,34,35,49,50,51,52] | 2a | B |
| | 32. Therapeutic route: mainly massage or inhalation, it is recommended to inhale the form of better relief of anxiety, depression, and other psychological conditions.[29,34,35,49,50,51,52] | 2b | A |
| | 33. Types of essential oils: lavender, geranium, chamomile, bergamot, rose, etc. A single or combination of essential oils can be used each time for operation.[49,50,51,52] | 2a | A |
| | 34. Frequency and period: each time, the recommended time is 5 min~24 h, frequency of 1~7 times a week, for 3~6 weeks.[34,35,48,49,50,51,52] | 3b | B |
| | 35. Operator: Aromatherapy needs to be supervised or performed by a clinical nurse or therapist with a recognized diploma in massage.[49,50,51,52] | 2a | B |
| | 36. It is contraindicated in patients with a history of asthma or allergy, allergy or intolerance to essential oils, bleeding tendency, or severe organic diseases.[29,34,35,49,50,51,52] | 2b | B |

*Unique advantages in hospice care*

Traditional Chinese Medicine (TCM) nursing interventions in hospice care adopt a holistic viewpoint to strengthen body resistance to eliminate pathogenic factors.[57,58] Studies have demonstrated that early implementation of TCM nursing interventions throughout the whole process of cancer treatment can significantly alleviate the negative physical and mental effects in patients with advanced cancer.[61,62,63] This may prolong survival and enhance the quality of life for patients and families.[63,64] This review included several guidelines, clinical decisions, evidence summaries, twenty-one systematic reviews, and two RCTs, recommending TCM therapy, acupuncture, massage, TCM music, Traditional Chinese exercise therapy, auricular therapy, and aromatherapy to improve symptoms of fatigue, pain, nausea and vomiting, insomnia, and constipation in patients with cancer. This review demonstrates the effectiveness of these interventions.[28,29,34,35,37–39,43–45,47,48,53–58] The optimal form of intervention and authoritative protocols regarding different symptoms of hospice care for patients with advanced cancer have not yet been determined.[28–30,34] Patients are generally treated with pharmacological and non-pharmacological interventions depending on the progression of their disease.[30,34,35] Currently, hospice care for patients with advanced cancer mainly includes pharmacological treatment and non-pharmacological interventions such as cognitive-behavioral therapy, dignity therapy, and ideation relaxation training.[28,29,34,35] Pharmacological interventions often pose a risk of impaired cognition, hypotension, and death.[28,34,35] Cognitive behavioral therapy requires high operational requirements and a high degree of self-awareness.[28,34,35] Traditional Chinese Medicine (TCM) nursing interventions originated from the development of the Yellow Emperor's Classic of Internal Medicine, the theory of internal organs and meridians, and other theoretical principles inherent in Chinese medicine. These interventions aim to regulate blood flow throughout the body to achieve the regulation of internal organs, harmony of qi and blood, dredge the meridians and collaterals, strengthen body resistance to eliminate pathogenic factors, and balance yin and yang.[28,34,35,53–58] Due to the advantages of low toxicity, simplicity of operation, ease of use, and economical, patients with advanced cancer generally have a high level of acceptance.[28,34,35] Some studies have shown that TCM nursing interventions can not only increase the physiological comfort of cancer patients, but also improve their emotions.[28,34,35,37] In conclusion, TCM nursing interventions are simple, inexpensive, and can provide physiological and psychological dual intervention effects, providing unique advantages in the hospice care of patients with advanced cancer.

*Dialectical nursing*

The ultimate goal of dialectical nursing in hospice care is to formulate targeted TCM nursing interventions and measures.[64,65,66] Dialectical nursing, which means that nurses start from a holistic view, collect information through observation, olfaction, inquiry, and palpation, and use Chinese medicine theories to conduct nursing assessment, identify disease patterns and evidence, then propose appropriate nursing diagnosis, and finally develop targeted TCM nursing interventions,[65,66] is the key point in developing holistic care measures for patients with advanced cancer. This review points out that TCM nursing intervention requires dialectical nursing for patients with advanced cancer.[28,29,27,34,35,37–39,49,53–60] Traditional Chinese medicine (TCM) therapy, acupuncture, and auricular therapy for patients with advanced cancer should be based on the differentiation of symptoms and TCM syndromes for patients with advanced cancer, emphasizing dialectical administration of drugs and selecting acupuncture points.[28,32,37,53,54,55,56,57,58] Music, traditional Chinese exercise, and aromatherapy need to consider the patient's own cancer disease status, literacy, preferences, and symptoms to provide dialectical care for patients with advanced cancer.[29,34,35,38,39,49,59,60] There is no clear evidence of the best forms and programs for addressing different symptoms in different cancer populations.[34,35] Consequently, in the process of incorporating evidence into clinical practice, it is suggested that nurses follow the wishes of patients with advanced cancer, select different TCM nursing interventions according to different symptoms, and intervene based on a scientific diagnostic and therapeutic standard.[29,34,35]

*Strengthening the management*

This review provides recommendations on the timing, frequency, periodicity, precautions, operators, and announcements during the implementation of eight areas of TCM nursing interventions.[28,29,31,34,35,37–45,49–60] Healthcare professionals should pay attention to the adverse symptoms and avoidance areas of TCM nursing interventions in the clinical implementation process and to the time, frequency, and cycle of different techniques.[28,34,35,53–60] Professionals should provide the implementation of TCM nursing interventions after training.[28,34,35]. The requirements for healthcare professionals are high, such as acupuncture, moxibustion, massage, and auricular acupuncture points for accurate selection of acupuncture points and positioning.[31,32,37,53–59] Besides, qigong and taichi need to achieve the intention of guarding, regulating breath, and moving and acting in unity.[35,38,39] Music intervention requires an interventionist to have musical literacy.[40,41,42] In clinical interventions, it is recommended that nurses rely on interprofessional collaboration and further training to develop the best TCM program for patients with advanced cancer.[35,36,62,67,68]

## Conclusions

This review summarizes the best evidence for TCM nursing interventions in hospice care for patients with advanced cancer, including thirty-six pieces of best evidence in eight areas: TCM therapy, acupuncture therapy, moxibustion therapy, acupressure therapy, music therapy, traditional exercise therapy, auriculotherapy, and aromatherapy. This study provides evidence-based foundation for administrators and healthcare professionals to optimize the development of TCM intervention programs for hospice patients with advanced cancer. However, most of the evidence for the effectiveness of TCM nursing in hospice care for patients with advanced cancer comes from the results of small-sample clinical studies, which are insufficiently strong, and large-sample, multicenter RCTs need to be conducted and validated in the future. Accordingly, in the process of transferring evidence-based evidence to clinical practice, the feasibility of the evidence, the ability of healthcare professionals, and patients' own conditions should be fully considered when developing appropriate care programs for patients with advanced cancer and healthcare institutions.

## Funding sources

This research project was supported by Project of Sichuan Mental Health Education Research Center [No. XLJKJY2203A], Sichuan Provincial Administration of Traditional Chinese Medicine [No. 2023MS442].

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## Acknowledgments

None.

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.gerinurse.2024.11.007.

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