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Efficacy of Traditional Chinese Medicine Nursing Interventions in Alleviating Postoperative Pain after Anorectal Surgery: A Systematic Review and Meta-Analysis

Matteo Ricci[1], Carlo Benedetti[1], Giovanni Moretti[1]*

[1]Department of Clinical Epidemiology, Faculty of Medicine, University of Bologna, Bologna, Italy.

***E-mail** ✉ giovanni.moretti.epi@gmail.com

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ABSTRACT

This study investigates how traditional Chinese medicine (TCM) nursing influences the alleviation of postoperative pain in individuals undergoing surgery for anorectal conditions. Six databases—three in English (PubMed, Embase, the Cochrane Library) and three in Chinese (China National Knowledge Internet, Wanfang Data, China Science and Technology Journal Database)—were comprehensively searched for case-control or prospective research assessing TCM-based nursing for postoperative anorectal pain, from their inception to June 20, 2022. The Newcastle–Ottawa Scale was applied to appraise the methodological quality of included observational studies. Outcomes such as Visual Analogue Scale (VAS) scores, effective pain-relief rate, wound recovery duration, and hospitalization time were synthesized. A total of 15 records met the criteria after screening. The pooled findings indicated that TCM nursing lowered VAS scores (mean difference (MD): 1.15; 95% Confidence Interval (CI): 1.96, –1.06; $P < 0.00001$) compared with standard postoperative approaches. Longer application of TCM nursing corresponded with further reductions in pain scores. Additionally, TCM interventions improved the pain-relief rate (OR: 4.78; 95% CI: 2.93, 7.79; $P < 0.00001$) and shortened wound-healing time (MD: 4.44; 95% CI: 5.60, –3.27; $P < 0.00001$) as well as hospital stay (MD: 4.87; 95% CI: 5.93, –3.82; $P < 0.00001$). Traditional Chinese medicine nursing plays a beneficial role in postoperative outcomes for anorectaldisease patients, notably in reducing short-term postoperative discomfort. Nonetheless, variation in TCM nursing protocols may introduce heterogeneity.

Keywords: Traditional Chinese medicine nursing, Anorectal diseases, Postoperative pain, Surgery

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Introduction

Anorectal conditions—including haemorrhoids, fissures, and fistulas—are frequently encountered, with surgical management often required [1]. Operative manipulation of local structures, trauma to anal tissues, and impaired circulation or lymphatic drainage can trigger postoperative pain, bleeding, and delayed tissue recovery [2]. Because of high perianal nerve sensitivity, around 65% of postoperative patients report moderate to intense pain, which influences both recovery and overall well-being [3]. Conventional Western interventions such as potassium permanganate sitz baths, antibiotics, and anti-inflammatory analgesics often fail to provide adequate pain relief [4]. Thus, effective postoperative pain-management strategies remain a focus of clinical interest. Ideal options should avoid addiction risk, be minimally invasive, simple to use, and demonstrate reliable effectiveness. TCM nursing holds long-standing practical experience and distinctive advantages in this area.

In TCM theory, anorectal disorders are frequently associated with factors such as wind, dampness, dryness, fire, blood stasis, and qi deficiency. These pathogenic influences, combined with organ weakness, may induce downward movement of pathogenic wind, heat, and dampness, ultimately causing obstruction, stasis, and pain in the anal region. Surgical intervention may further disrupt meridian pathways, aggravating stagnation and generating discomfort [5]. Current TCM-based postoperative nursing approaches include ear-seed therapy, herbal

fumigation or sitz baths, individualized diet guidance, acupressure, scraping, acupoint applications, and TCM-focused health education. Although many studies report notable effectiveness in pain reduction, systematic reviews remain insufficient. Therefore, this work aims to clarify the impact of integrated TCM nursing compared with routine postoperative care for patients experiencing anorectal postoperative pain.

Materials and Methods

Literature search strategy

In accordance with the PRISMA guidelines for systematic reviews, six databases were searched: three English (PubMed, Embase, the Cochrane Library) and three Chinese (China National Knowledge Infrastructure, Wanfang Data, China Science and Technology Journal Database). The search covered all records from the time each database was established until June 30, 2022. For the English sources, the terms used included "traditional Chinese medicine or TCM", "nursing or nursing model", "anal surgery, haemorrhoids surgery or anorectal surgery", and "pain or pain nursing". For the Chinese databases, the keywords applied were "traditional Chinese medicine", "nursing", "after anorectal surgery", "after haemorrhoid", and "pain". Additional potentially relevant studies were also identified through the reference lists of related systematic reviews.

Inclusion and exclusion criteria

Inclusion criteria:

(1) Articles published in Chinese or English in peer-reviewed journals, with Chinese studies restricted to core journals;

(2) Participants diagnosed with anorectal diseases who received surgical treatment;

(3) Control groups received standard nursing care, while intervention groups were provided comprehensive TCM nursing combined with routine care, which could involve ear-seed therapy, herbal fumigation, or sitz baths, dialectical diets, acupoint massage, scraping, acupoint application, and TCM-related health instruction;

(4) Research designs limited to case-controlled or prospective studies;

(5) Primary outcome measured using the Visual Analogue Scale (VAS) [6, 7], scored from 1–10 points, with higher scores indicating greater pain. Secondary outcomes included response rate, wound-healing duration, and length of hospitalization. Response rate followed the criteria outlined in the Standard for the Efficacy and Diagnosis of Traditional Chinese Medicine [8], assessing VAS change on postoperative days 3 and 7. A VAS reduction of ≥4 points signified a marked response; a decrease of 2–3 points indicated improvement; <2 points was labelled ineffective. Efficiency = (valid cases + effective cases)/total evaluable cases × 100%.

Exclusion criteria:

(1) Non-human studies;

(2) Conference abstracts, case reports, systematic reviews, and other non-eligible formats;

(3) Insufficient outcome reporting or lack of analyzable data;

(4) Duplicate publications;

(5) Studies without complete article access.

Literature screening and data extraction

Two reviewers independently screened studies using the above criteria. Any discrepancies were resolved through consultation with a third reviewer, followed by discussion to reach a consensus. After finalizing the included studies, both reviewers extracted data using a standardized collection sheet that captured bibliographic details, participant characteristics, TCM nursing techniques and duration, VAS outcomes after integrated TCM care, response rate, healing time, and hospital stay.

Literature quality evaluation

The Newcastle–Ottawa Scale was used to assess the methodological quality of the observational research. This tool evaluates eight components, including sample representativeness, group comparability, adequacy of outcome assessment, follow-up duration, and completion of follow-up. The maximum possible score is 9. A rating of 7 or higher reflects high-quality evidence, whereas scores of 5 or less indicate low quality.

Statistical analysis method

ReviewManager 5.3 was employed for statistical processing. For continuous outcomes, the effect size was expressed as the weighted mean difference (MD) or relative risk, with 95% confidence intervals (CI) used to define the range of the effect estimate. Heterogeneity was examined with the I^2 statistic. If $I^2 < 50\%$ or $P > 0.1$, the studies were treated as having low heterogeneity and the fixed-effects model (Mantel–Haenszel) was applied. When $I^2 > 50\%$ or $P \leq 0.1$, heterogeneity was considered substantial, and a random-effects model (DerSimonian and Laird) was used. In cases of considerable inconsistency, subgroup or sensitivity analyses were undertaken. A significance level of $P \leq 0.05$ was used.

Results and Discussion

Basic characteristics of the included studies and literature quality evaluation results

From the multilingual database search, 15 publications satisfied all eligibility conditions [9–23]. The entire selection workflow is illustrated in **Figure 1**. Altogether, the reports covered 2375 postoperative cases involving various anorectal disorders such as haemorrhoids, fissures, fistulas, and perianal abscesses. Within these samples, 1207 individuals were assigned to TCM-oriented nursing programs—ear-seed placement, herbal steam or bathing therapy, tailored dietary regimens, point massage, scraping methods, and acupoint patches—applied over periods ranging from 1 day to 1 month. The remaining 1168 participants received standard postoperative nursing. Quality assessment revealed generally strong methodological standards, with an average score of **7.**3 and a median of 8.

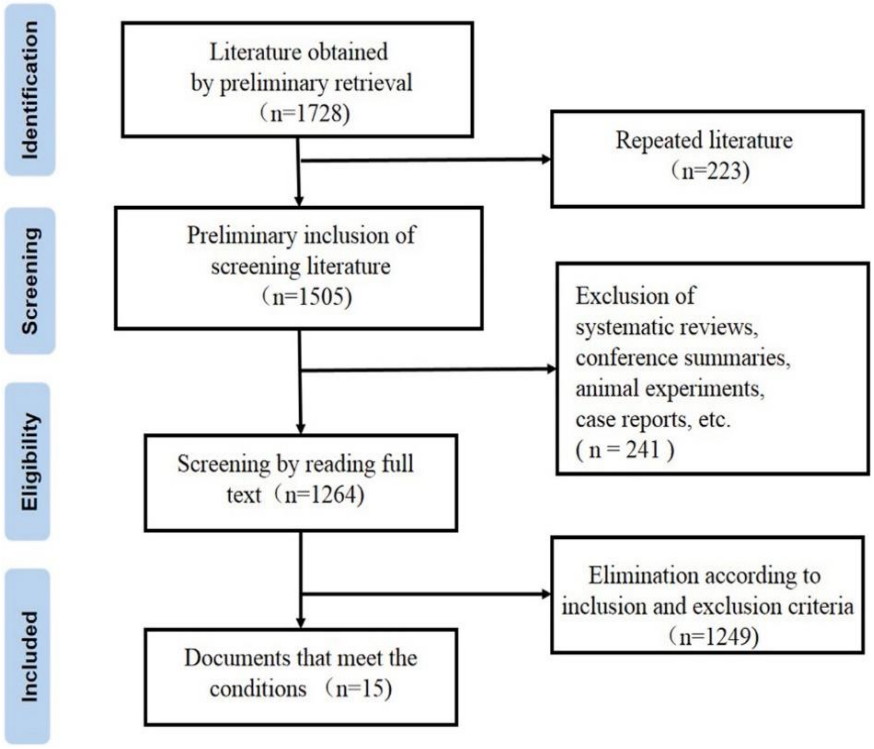

Figure 1. Screening pathway for eligible studies.

Effect of traditional Chinese medicine nursing on postoperative Visual Analogue Scale scores in patients with anorectal disease

A total of 11 articles provided VAS outcomes following TCM postoperative care. Considerable heterogeneity appeared in these data ($I^2 = 98\%$, $P < 0.00001$), leading to analysis with a random-effects approach. VAS results were further grouped by assessment time. Combined findings indicated that TCM-based nursing decreased pain intensity, producing an overall pooled estimate of –1.15 (95% CI: 1.96**,** –1.06; $P < 0.00001$). Subgroup calculations for 2**,** 7**,** and 14 days post-operation all showed beneficial reductions in pain, with longer TCM intervention generally corresponding to lower scores. The effect values were **–**2.60 (95% CI: 4.38**,** –0.82; $P = 0.004$), **–**1.25 (95% CI**:** 1.84**,** –0.66; $P < 0.0001$), and **–**0.73 (95% CI**:** 0.84**,** –0.62**;** $P < 0.00001$) **(Figure 2)**.

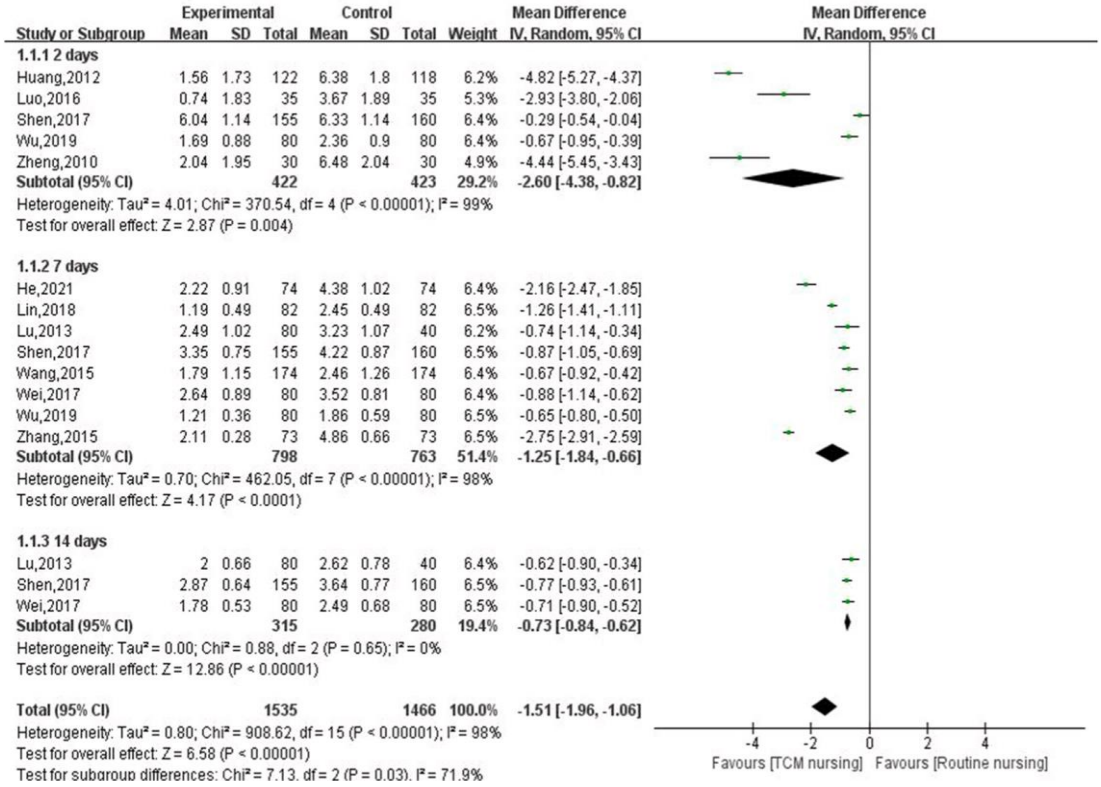

Figure 2. Subgroup comparison of TCM nursing and postoperative VAS outcomes.

Effect of traditional Chinese medicine nursing on postoperative efficiency in patients with anorectal diseases

Eight studies presented data on the clinical efficiency of postoperative pain improvement. These involved 515 participants in the TCM intervention arm and 498 in the routine-care arm. Heterogeneity was minimal ($I^2 = 20\%$**,** $P = 0.97$), making a fixed-effects model appropriate. Findings demonstrated clear superiority of TCM nursing: individuals receiving TCM care had a 4.78-fold higher probability of achieving pain relief compared with those treated conventionally (95% CI: 2.93**,** 7.79**;** $P < 0.00001$) **(Figure 3)**.

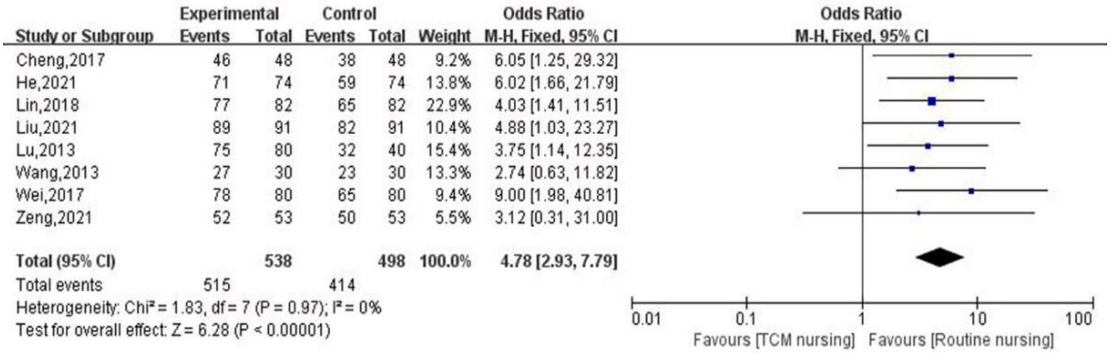

Figure 3. Meta-analysis of postoperative effectiveness associated with TCM care.

Influence of traditional Chinese medicine nursing on postoperative wound healing time in patients with anorectal disease

Eight included articles documented wound-healing duration after anorectal surgery. These involved 682 subjects managed with TCM nursing and 642 receiving ordinary postoperative care. Substantial heterogeneity was observed ($I^2 = 95\%$**,** $P < 0.00001$), so a random-effects method was applied. Analysis indicated that TCM nursing shortened healing time by roughly 4.44 days relative to standard care (95% CI**:** 5.60**,** –3.27**;** $P < 0.00001$) **(Figure 4).**

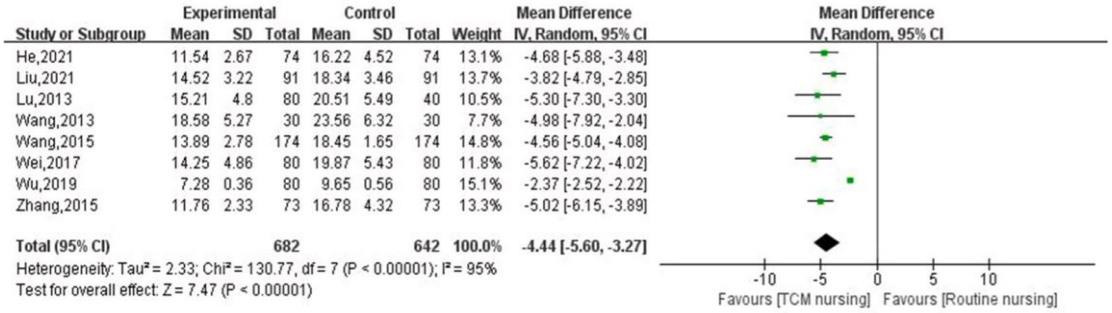

Figure 4. Meta-analysis of TCM nursing and postoperative wound-recovery length (days).

Impact of traditional Chinese medicine–based nursing on postoperative hospital duration in anorectal surgery patients

Across four publications, postoperative hospitalization time following TCM-oriented nursing interventions was assessed. The heterogeneity test pointed to noticeable variability among these studies (I^2 = 63 %, P = 0.04), so a random-effects analytical model was applied. The pooled findings indicated that integrating TCM nursing led to a reduction of 4.87 days in postoperative hospital stay for individuals with anorectal disorders (95 % CI: 5.93 to —3.82; P < 0.00001) **(Figure 5).**

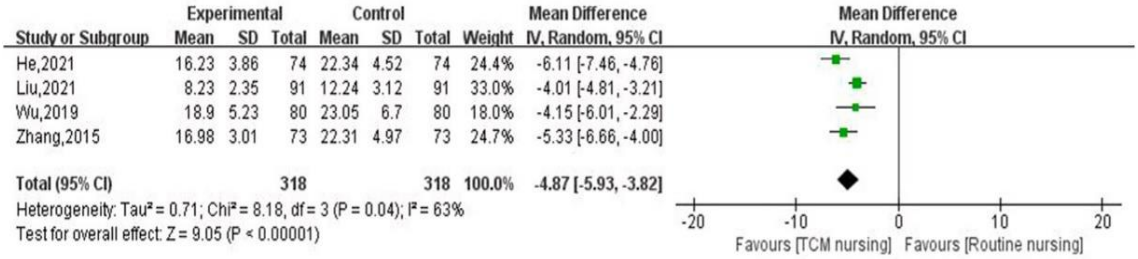

Figure 5. Meta-analysis showing the influence of TCM nursing on the duration of postoperative hospitalization among anorectal disease patients.

Sensitivity analysis

Given the considerable heterogeneity observed in outcomes related to VAS scores, wound-healing duration, and hospital stay, a stepwise sensitivity analysis was conducted by removing each study individually. For the VAS-related data, no single article was found to substantially account for the observed inconsistency, indicating stable heterogeneity and dependable pooled outcomes.

For wound-healing time, heterogeneity markedly declined after excluding study [9] (I^2 = 0 %, P = 0.52). Under these conditions, re-analysis with a fixed-effects model demonstrated that TCM nursing shortened healing time by MD = —4.60 (95 % CI: 4.96 to —4.24; P < 0.00001) **(Figure 6)**.

Regarding hospital stay, removing the study [13] reduced inconsistency to I^2 = 28 % (P = 0.25). The fixed-effects synthesis then showed that TCM-based care continued to significantly shorten postoperative hospitalization (MD: 5.35; 95 % CI: 6.36 to —4.33; P < 0.00001) **(Figure 7)**.

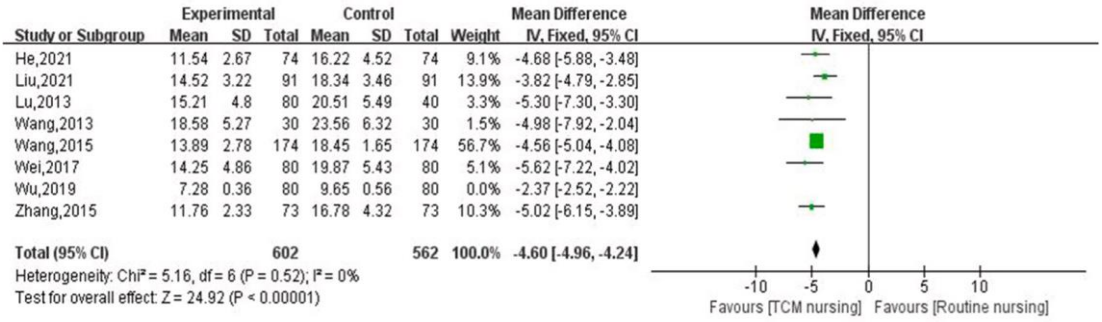

Figure 6. Sensitivity evaluation of TCM nursing and postoperative wound-healing duration..

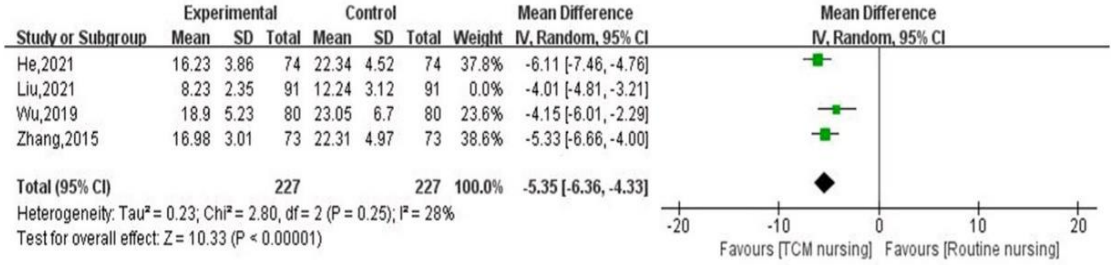

Figure 7. Sensitivity evaluation of TCM nursing and postoperative hospital stay.

This systematic review incorporated 15 eligible studies to assess how comprehensive TCM nursing influences postoperative pain and recovery in anorectal disease patients. The combined results show that TCM-based rehabilitation strategies—such as ear-seed therapy, herbal fumigation and sitz baths, individualized dietary prescriptions, acupoint pressing, scraping therapy, and herbal acupoint patches—significantly lowered VAS pain levels at 2 days (MD: 2.60; 95 % CI: 4.38 to —0.82; P = 0.004), 7 days (MD: 1.25; 95 % CI: 1.84 to —0.66; P < 0.0001) and 14 days (MD: 0.73; 95 % CI: 0.84 to —0.62; P < 0.00001) post-operation, with the strongest effect observed in the short-term period.

Moreover, TCM nursing improved pain relief 4.78 times more effectively than standard postoperative management (95 % CI: 2.93 to 7.79; P < 0.00001). Beyond its analgesic advantages, TCM care also meaningfully accelerated wound recovery (MD: 4.44; 95 % CI: 5.60 to —3.27; P < 0.00001) and shortened hospitalization duration (MD: 4.87; 95 % CI: 5.93 to —3.82; P < 0.00001).

Most of the studies included in this review used TCM sitz baths or acupuncture as postoperative nursing interventions. In traditional Chinese medicine theory, pain following anorectal operations mainly arises from meridian disruption caused by surgery, along with obstruction and stagnation of qi and blood. As inflammation progresses, these blockages can further intensify discomfort. Herbal fumigation applies medicinal vapors directly to the surgical area; through warming and therapeutic actions of the herbs, it can decrease neural excitability, ease muscle tension, support blood and lymph flow, enhance local metabolism, and reduce tissue swelling, thereby lowering pain levels.

Hu and Liu *et al*. [24, 25] used data-mining approaches to explore herb-use patterns for fumigation after hemorrhoid procedures. Their analysis showed that the four most frequently applied herbs were yellow cypress, mirabilite, Chinese gall, and radix sophorae flavescentis. These formulations generally involve a balance of cold and warm properties, often with bitter or pungent flavors, and their main actions are clearing heat, drying dampness, promoting circulation, reducing swelling, and relieving pain.

Acupuncture has a long tradition in treating anorectal disorders and is regarded as convenient, fast-acting, and safe. Wu *et al*. [26] assessed acupuncture for postoperative pain control and concluded that it effectively reduced pain intensity and decreased opioid requirements. Research by Huang *et al*. reported that stimulation of Chengshan, Changqiang, and Shenmen points significantly eased pain after hemorrhoid surgery [12]. Additional studies also indicate that acupuncture can lessen discomfort following hemorrhoidectomy and lower the incidence of adverse events [27].

The present analysis is not without limitations. First, TCM nursing practices lack a standardized protocol; most treatment plans rely heavily on practitioner experience, which introduces subjectivity and contributes to notable variability in postoperative care approaches. Second, all included research involved participants from a single ethnic background. Because all studies were conducted in China, evidence from other populations is still absent. Third, the range of outcome indicators remains narrow. Due to insufficient data across different measurements, only pain relief, wound-healing duration, and hospital stay were evaluated. Consequently, future investigations should aim to develop a unified TCM nursing framework established by TCM specialists, incorporate additional indicators, and include more diverse populations.

Conclusion

Overall, this review provides a systematic comparison of comprehensive TCM nursing versus standard postoperative care for patients undergoing anorectal surgery. The results show that TCM-based care offers beneficial clinical effects, helping reduce postoperative pain, enhancing pain-relief efficiency, and shortening both

healing time and hospitalization duration. Nevertheless, considering the limitations of the current evidence base, more rigorously designed, multi-ethnic prospective studies are necessary to further substantiate the value of integrating comprehensive TCM nursing into the postoperative management of anorectal disease patients.

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Conflict of Interest: None

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Ethics Statement: None

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