Journal of Pain Research

Dovepress
Taylor & Francis Group

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REVIEW

Quality Evaluation of Literature Reports on Clinical Randomized Controlled Trials of Acupuncture Treatment for Stable Angina Pectoris

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Objective: To evaluate the reporting quality of randomized controlled trials on acupuncture for the treatment of stable angina pectoris.

Methods: A systematic search was conducted in both Chinese and English databases, including CNKI, Wanfang, VIP, SinoMed, PubMed, Embase, Web of Science, and the Cochrane Library, with a focus on studies published from the inception of each database to March 4, 2025. This search aimed to identify clinical RCTs exploring the effectiveness of acupuncture in treating stable angina pectoris. The reporting quality of the included studies was assessed using the (Consolidated Statement for Trials) CONSORT statement and the (Standards for Reporting Interventions in Controlled Trials of Acupuncture) STRICTA guidelines. The CONSORT statement, an internationally recognized standard for trial reporting, was employed to evaluate the reporting quality of intervention measures in acupuncture trials, while the STRICTA guidelines were applied to assess acupuncture-specific reporting quality.

Results: A total of 31 studies were included in the analysis. The results from the CONSORT evaluation indicated that 19 items had a reporting rate of less than 10%, predominantly related to trial methods and results, while 4 items showed a reporting rate greater than 90%, mainly focusing on abstract descriptions, inclusion criteria, and subject recruitment. According to the STRICTA guidelines, the primary factors influencing the quality of acupuncture-related reports included the rationale for acupuncture treatment, the treatment setting, the description of acupuncturists, and the rationale for selecting control groups or control measures. The reporting rates for these factors were 32.26%, 3.23%, 6.45%, and 25.81%, respectively. In the final randomized controlled trials (RCTs) of acupuncture and moxibustion for stable angina pectoris (SAP), 31 items met the inclusion criteria. The overall reporting quality of these RCTs was suboptimal. Notably, 77.42% of studies failed to report essential intervention details, while a substantial proportion lacked definitions of primary outcomes or adequate descriptions of randomization and blinding procedures. These widespread reporting deficiencies reflect poor adherence to CONSORT and STRICTA guidelines, thereby compromising the transparency, methodological rigor, and interpretability of the current evidence base.

Conclusion: The overall reporting quality of literature on acupuncture for stable angina pectoris needs improvement. Future RCTs should strictly follow CONSORT and STRICTA to enhance research reliability and transparency.

Keywords: acupuncture, stable angina, quality evaluation, CONSORT statement, STRICTA standard

Introduction

According to the 2020 global epidemiological survey, cardiovascular disease accounts for 31% of global deaths, with coronary heart disease being the primary cause.[1] In China, approximately 11.39 million people suffer from coronary heart

Received: 24 April 2025
Accepted: 5 August 2025
Published: 28 August 2025

disease,[2] with stable angina pectoris (SAP) the most prevalent form of ischemic heart disease characterized by high incidence, recurrence, and disability rates, imposing a significant societal and familial burden. Therefore, in addition to conventional treatments, actively seeking effective adjuvant therapies to reduce the incidence of cardiovascular events and improve myocardial ischemia is a critical component of current stable angina management.

In China, most patients with SAP seek treatment from traditional Chinese medicine (TCM) in addition to conventional therapies. Acupuncture, one of the characteristic treatments in traditional Chinese medicine, is recognized by the FDA as an effective adjuvant therapy.[3] It has shown therapeutic benefits for a variety of conditions and offers advantages such as being natural, simple, and inexpensive compared to conventional medical treatments. According to published animal experiments and clinical trials, acupuncture therapy can effectively improve myocardial ischemia, reduce myocardial injury, and decrease the frequency of angina attacks.[4,5] However, there has been no critical evaluation of the current literature on acupuncture for stable angina pectoris, both domestically and internationally. This has undermined the evidence level and recommendation strength for acupuncture in treating stable angina pectoris. RCT is now internationally recognized as the gold standard for evaluating the effectiveness of interventions.[6] High-quality RCTs provide stronger evidence in evidence-based medicine, and the quality of their reports directly affects the evaluation of intervention efficacy.[7] Internationally recognized reporting standards, the (Consolidated Statement for Trials) CONSORT[8] and the (Standards for Reporting Interventions in Controlled Trials of Acupuncture) STRICTA[9] are used in this study to assess the reporting quality of clinical RCTs on SAP. This study aims to identify quality issues and propose solutions, helping clinical researchers better understand the quality of acupuncture-related clinical studies and improve the overall quality of literature.

Previous evaluations of acupuncture trial reporting have consistently demonstrated suboptimal adherence to established guidelines. For instance, international reporting standards such as the CONSORT and STRICTA statements have emphasized the importance of methodological transparency, particularly in describing intervention protocols, practitioner qualifications, randomization, and blinding procedures. Prior cross-disciplinary assessments have shown that many acupuncture RCTs fail to meet these basic requirements, resulting in persistent issues related to reproducibility, risk of bias, and limited interpretability of findings.[9] However, such evaluations have generally addressed acupuncture trials across a broad range of conditions and have not systematically examined reporting quality in the specific context of stable angina pectoris. The current review seeks to address this gap by providing a condition-specific analysis of RCT reporting practices in the field of acupuncture for SAP.

Information and Methodology

Search Strategy

The search criteria were designed to comprehensively search both Chinese and English databases, including the Chinese full-text periodicals database (CNKI), China Biomedical Literature Database (SinoMed), Wipro Chinese Science and Technology Journal Database (VIP), and Wanfang Academic Journals Full-text Database (Wanfang) in Chinese. The English databases included Web of Science, Cochrane Library, PubMed, and Embase. The Chinese search terms were acupuncture, needle, stable angina pectoris, coronary angina, Chest bi heart pain, the English search terms included stable angina, acupuncture, electroacupuncture, needle, randomized controlled trial, of which, the CNKI retrieval formula is: (((Subject%="Acupuncture" or Title%="Acupuncture") OR (Subject%="Needle" or Title%="Needle")) AND (((Subject %="Stable angina" or Title%="Stable angina") OR (Subject%="Coronary angina" or Title%="Coronary angina")) OR (Subject%='Chest bi heart pain 'or Title%='Chest bi heart pain ')); the database was searched with the formula: (((needle) OR (electroacupuncture)) OR (acupuncture)) AND (stable angina), and the search timeframe was limited to the period of construction of the library – March 4, 2025.

Inclusion Criteria for the Literature

(a) Study Type: RCT. (b) Study Participants: Participants were diagnosed based on the "Nomenclature and Diagnostic Criteria for Ischemic Heart Disease", the "Guidelines for Clinical Research on New Chinese Medicines (Trial Implementation)", and the "Guidelines for the Diagnosis and Treatment of Chronic Stable Angina", all of which were

developed by China.or the ACC/AHA Revised Guidelines on "Diagnosis and Treatment of Chronic Stable Angina", or the WHO "Guiding Principles for the Diagnosis and Treatment of Ischemic Heart Disease", related to coronary artery disease and stable angina. (c) Interventions and controls: acupuncture as the main treatment means, alone or in combination with control group interventions. Including body acupuncture, electroacupuncture, warm acupuncture, etc., and the control group is conventional medicine treatment, including calcium antagonists, antiplatelet aggregation drugs, lipid regulating drugs, receptor blockers, etc., or conventional care, placebo, waiting treatment, etc., (d) Validity outcome indicators were established based on guidelines and standards formulated by China, including the "*Guidelines for Clinical Research of New Chinese Medicines*", "*Technical Guidelines for Clinical Research of Traditional Chinese Medicines and Natural Medicines for Treating Coronary Heart Disease Angina*", "Guidelines for Evaluation of the Efficacy of Treating Coronary Heart Disease Angina", "*Standards for Evaluation of Coronary Heart Disease Angina and Electrocardiogram Efficacy*", "*Standards for Determination of Traditional Chinese Medicine Syndrome Efficacy*", and "*Scoring Methods for Evaluation of Traditional Chinese Medicine Clinical Syndrome Efficacy*, etc". The outcome indicators include the frequency of angina pain, the severity of angina pain, and the duration of angina pain. The dosage of nitroglycerin or SuXin JiuXin Pills and related symptoms, changes in blood lipids and hemorheology (including whole blood viscosity at high, medium, and low shear rates, plasma viscosity, hematocrit, erythrocyte sedimentation rate, platelet aggregation, and plasma fibrinogen level), electrocardiogram, treadmill stress test, exercise electrocardiogram test, ambulatory electrocardiogram test, echocardiogram, grade of angina, determination of serum myocardial enzyme levels, Traditional Chinese Medicine syndrome efficacy evaluation, quality of life assessment includes the Seattle Angina Questionnaire, safety indicators include routine blood tests, routine urine tests, routine stool tests, cardiac function, liver function, renal function tests, and adverse reactions or adverse events.

Literature Exclusion Criteria

(a) duplicate publications, (b) unavailability of full text, (c) protocols, systematic evaluations, and reviews, (d) participants with comorbidities that may confound the evaluation of angina symptoms or cardiovascular outcomes, including: severe heart failure (NYHA Class III–IV), uncontrolled severe arrhythmias (eg, atrial fibrillation with uncontrolled ventricular rate, high-grade atrioventricular block), recent myocardial infarction (within 3–6 months), non-cardiac causes of chest pain, such as severe gastroesophageal reflux disease, costochondritis, or uncontrolled thyroid dysfunction, Other diseases that cause chest pain in combination such as cardiac neurosis pleurisy intercostal neuralgia pericarditis etc, Combined with severe heart disease malignant hypertension severe heart failure severe arrhythmia and other cardiovascular diseases; Or it may be combined with other serious or uncontrollable important organ or unstable systemic diseases such as cerebrovascular accidents uncontrollable diabetes uncontrollable active infections severe gastrointestinal diseases etc (e) animal experiments, (f) controlled studies of different acupuncture therapies, and (g) other apparently unrelated studies. (h) dissertations that do not meet quality requirements.

Screening and Extraction of Literature

Database screening and literature extraction were independently performed by two researchers (Binjie Cai and Mengqi Li). Literature from all databases was imported into NoteExpress (V3.X) for duplicate removal, followed by initial screening via title/abstract review. Full texts of eligible studies were then reviewed to confirm final inclusion. Data were extracted into an Excel 2021 spreadsheet based on CONSORT and STRICTA criteria, and discrepancies during screening or extraction were resolved by a third-party reviewer (Muxiang Gai).

Evaluation of the Quality of Literature

Quality evaluation of the included studies was conducted by the same two reviewers (Binjie Cai and Mengqi Li) using CONSORT and STRICTA guidelines. The screening process (import, deduplication, and full-text review) followed the methods described in Section 2.4. Data on reporting compliance with CONSORT/STRICTA items were extracted and recorded in Excel 2021, with disagreements adjudicated by an independent third-party reviewer (Mengyuan Li).

Results

Results of the Literature Search

A total of 2186 original documents were retrieved, 810 duplicates were excluded, 1305 documents that did not meet the inclusion exclusion criteria were excluded after reading the titles and abstracts of the articles. A total of 40 articles were excluded after full-text review, among which 5 were excluded during the full-text screening stage due to the articles being unavailable. Ultimately, 31 articles were included,[10–40] and the detailed screening process is illustrated in Figure 1.

CONSORT Statement Evaluation Results

According to the 25 items (37 sub-items) outlined by CONSORT, the quality evaluation of the included literature revealed that the items with a reporting rate of less than 10% included 1a, 3a, 3b, 6b, 7a, 7b, 9, 10, 11a, 11b, 12b, 13a, 13b, 14b, 16, 17a, 17b, 18and 24, totaling 19 sub-items. These items were primarily concentrated in the test methods and test results sections, with three items, namely 7b, 11b, and 17b, having a reporting rate of 0%. In contrast, four items with a reporting rate exceeding 90% included 1b, 4a, 4b, 12a, and 14a, which primarily focused on the description of the abstract, participant inclusion criteria, and recruitment. Detailed information is provided in Table 1.

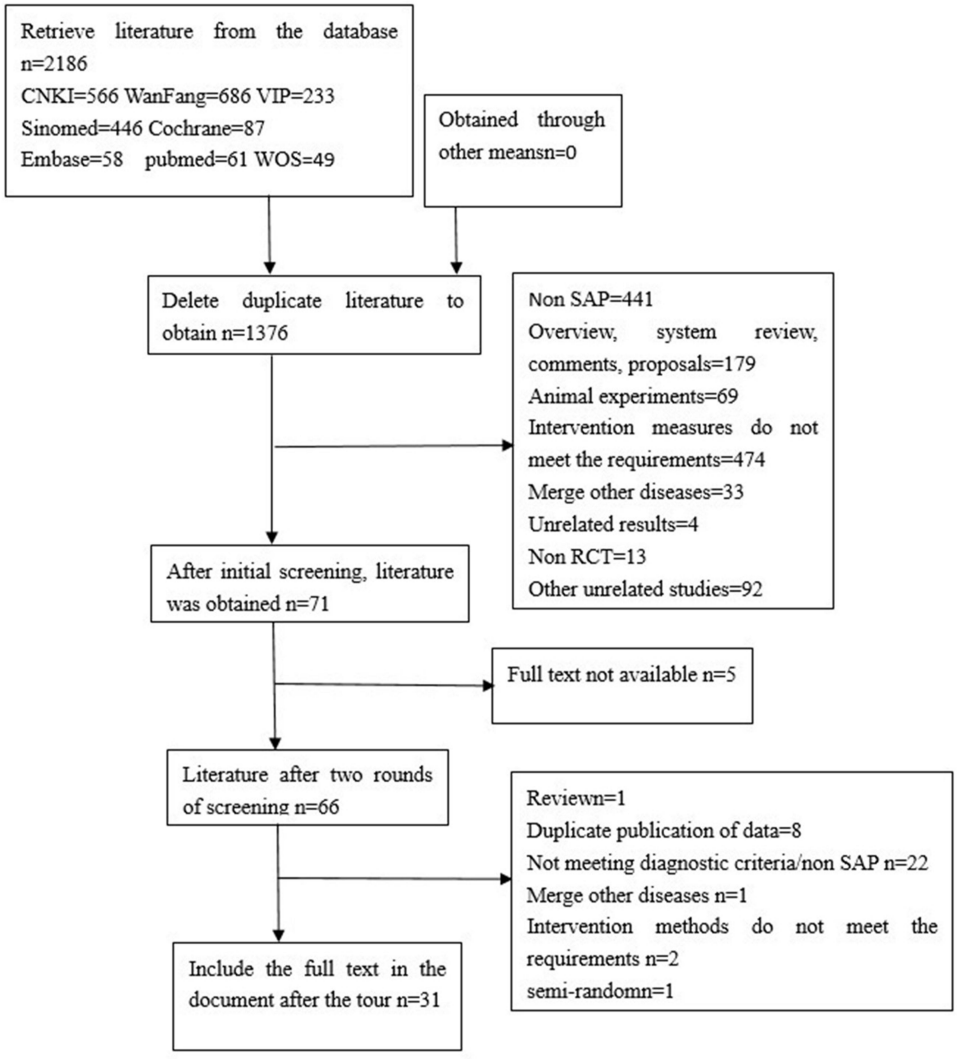

Figure 1 Literature screening process for acupuncture for stable angina pectoris.

Table 1 Randomized Controlled Trials of Acupuncture for Stable Angina Pectoris CONSORT Statement Evaluation Results

thematic		Project Statement Description	Literature Number	Reportingrate/ %
Title and abstract		1a) identification as a randomized trial in the title	1	3.23
		1b) structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts)	30	96.77
Introduction	Background and objectives	2a) scientific background and explanation of rationale	25	80.65
		2b) specific objectives or hypotheses	15	48.39
Methodologies	Trial design	3a) description of trial design (such as parallel, factorial), including allocation ratio	1	3.23
		3b) important changes to methods after trial commencement (such as eligibility criteria), with reasons	1	3.23
	Participants	4a) eligibility criteria for participants	31	100
		4b) settings and locations where the data were collected	31	100
	Interventions	5) the interventions for each group with sufficient details to allow replication, including how and when they were actually administered	24	77.42
	Outcome	6a) completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	3	9.68
		6b) any changes to trial outcomes after the trial commenced, with reasons	1	3.23
	Sample size	7a) how sample size was determined	1	3.23
		7b) when applicable, explanation of any interim analyses and stopping guidelines	0	0
	Randomization sequence generation	8a) method used to generate the random allocation sequence	25	80.65
		8b) type of randomization; details of any restriction (such as blocking and block size)	22	70.97
	Allocation concealment mechanism	9) mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	1	3.23
	Implementation	10) who generated the random allocation sequence who enrolled participants, and who assigned participants to interventions	1	3.23
	Blinding	11a) if done, who was blinded after assignment to interventions (for example, participants.care providers, those assessing outcomes) and how	3	9.68
		11b) if relevant, description of the similarity of interventions	0	0
	Statistical methods	12a) statistical methods used to compare groups for primary and secondary outcomes	30	96.77
		12b) statistical methods used to compare groups for primary and secondary outcomes	2	6.45
Results	Participant flow (a diagram is strongly	13a) for each group, the numbers of participants who were randomly assigned, received intended treatment, and were analyzed for the primary outcome	1	4.17
	recommended)	13a) for each group, the numbers of participants who were randomly	1	3.23
		13b) for each group, losses and exclusions after randomization, together with reasons	2	6.45
	Recruitment	14a) dates defining the periods of recruitment and follow-up	31	100
		14b) why the trial ended or was stopped	1	3.23
	Baseline data	15) A table showing baseline demographic and clinical characteristics for each group	9	37.50

(*Continued*)

https://doi.org/10.2147/JPR.S536468

Table 1 (Continued).

thematic		Project Statement Description	Literature Number	Reportingrate/ %
	Number analyzed	16) for each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	1	3.23
	Outcomes and estimation	17a) for each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	2	6.45
		17b) for binary outcomes presentation of both absolute and relative effect sizes is recommended	0	0
	Ancillary analyses	18) Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing prespecified from exploratory	1	3.23
	Harms	19) All important harms or unintended effects in each group	8	25.81
Discussion	Limitations	20) trial limitations; addressing sources of potential bias; imprecision; and, if relevant, multiplicity of analyses	11	35.49
	Generalizability	21) generalizability (external validity, applicability) of the trial findings	14	45.16
	Interpretation	22) interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	13	41.94
	Registration	23) registration number and name of trial registry	6	19.35
	Protocol	24) where the full trial protocol can be accessed, if available	3	9.68
	Funding	25) sources of funding and other support (such as supply of drugs), role of funders	5	16.13

STRICTA Standard Evaluation Results

Quality evaluation of acupuncture reporting in included studies was conducted using the 17 items of the STRICTA criteria. Items with a reporting rate of less than 30% were identified as follows: (1b) reasoning for treatment provided, based on historical context, literature sources, and/or consensus methods, with references where appropriate, (4b) setting and context of treatment, including instructions to practitioners, and information and explanations to patients, (5) description of participating acupuncturists (qualification or professional affiliation, years in acupuncture practice, other relevant experience), and (6a) rationale for the control or comparator in the context of the research question, with sources that justify this choice (1a) style of acupuncture, (1c) extent to which treatment was varied, (2d) response sought (eg, de qi or muscle twitch response), (2e) needle stimulation (eg manual, electrical), (2f) needle retention time, (3a) number of treatment units, (3b) frequency and duration of treatment sessions, (4a) details of other interventions administered to the acupuncture group (eg moxibustion, cupping, herbs, exercises, lifestyle advice), and (6b) precise description of the control or comparator. If sham acupuncture or any other type of acupuncture-like control is used, provide details as for Items 1 to 3 above. Detailed information is provided inTable 2.

Discussion

Main Issues Affecting the Quality of Literature Reporting (Based on the CONSORT Statement)

According to the CONSORT statement, the evaluation of the reporting quality of RCTs on acupuncture for the treatment of SAP revealed several crucial issues.

Unreasonable Description of the Title

All 31 included articles were RCTs; however, merely one article explicitly mentioned the term “randomized” in its title or research question, which directly impacted the articles indexing and identification and highlighted the researchers’ failure to appropriately address randomization in the study design.

Table 2 Stricta Criteria Evaluation Results of Randomized Controlled Trials of Acupuncture for Stable Angina Pectoris

item	Detail	Number of Publications	Reporting Rate/%
1.Acupuncture rationale	1a) style of acupuncture	26	83.87
	1b) reasoning for treatment provided, based on historical context, literature sources, and/or consensus methods, with references where appropriate	10	32.26
	1c) extent to which treatment was varied	22	70.97
2.Details of needling	2a) number of needle insertions per subject per session (mean and range where relevant)	13	41.94
	2b) names (or location if no standard name) of points used (uni/bilateral)	16	51.61
	2c) depth of insertion, based on a specified unit of measurement, or on a particular tissue level	19	61.29
	2d) response sought (eg de qi or muscle twitch response)	22	70.97
	2e) needle stimulation (eg manual, electrical)	23	79.14
	2f) needle retention time	26	83.87
	2g) needle type (diameter, length, and manufacturer or material)	11	35.48
3.Other components of treatment	3a) number of treatment sessions	30	96.77
	3b) frequency and duration of treatment sessions	29	93.55
4.Other interventions	4a) details of other interventions administered to the acupuncture group (eg moxibustion, cupping, herbs, exercises, lifestyle advice)	21	64.74
	4b) setting and context of treatment, including instructions to practitioners, and information and explanations to patients	1	3.23
5. Practitioner background	5) description of participating acupuncturists (qualification or professional affiliation, years in acupuncture practice, other relevant experience)	2	6.45
6.Control or comparator interventions	6a) rationale for the control or comparator in the context of the research question, with sources that justify this choice	8	25.81
	6b) precise description of the control or comparator. If sham acupuncture or any other type of acupuncture-like control is used, provide details as for Items 1 to 3 above.	23	74.19

Deficiencies in Design and Methodology

Only 3.23% of trials reported a specific design, such as multicenter, evaluator and statistician blinded, randomized controlled trials with allocation ratios of 1:1:1:1, 96.77% of clinical trials did not have a predefined primary endpoint indicator and secondary endpoints. The lack of clarity in the primary outcome measures can lead to numerous issues in statistical analysis methods, directly resulting in a reporting rate of only 6.45% for item 12b of the CONSORT statement (methods for additional analyses, such as subgroup analyses and adjusted analyses). Similarly, the ambiguity of the primary outcome measures can also cause difficulties in sample size calculation. Among 31 RCTs, only one (3.23%) detailed sample size calculations for the primary endpoint. Sample size determination is a critical factor in trial design.[41] Appropriate sample size estimation balances statistical requirements with clinical significance, avoiding Type II errors while demonstrating true differences between groups.[42] Furthermore, significant flaws were identified in the implementation of the trial design, including random assignment, concealed allocation, and blinding, with reporting rates of 3.23%, 3.23%, and 9.68%, respectively. Additionally, descriptions of blinded interventions were not reported in any cases, and the low reporting rates for these components may have significantly biased the trial outcomes.

Among the 31 RCTs included, only one (3.23%) reported formal sample size estimation for the primary endpoint, reflecting a pervasive methodological deficiency across the evidence base. Specifically, this lack of power calculations significantly elevates the risk of type II error: studies may erroneously conclude a lack of efficacy due to inadequate sample sizes rather than the true ineffectiveness of acupuncture. As a result, the validity and interpretability of the

observed treatment effects are severely undermined. Thus, the current body of evidence on acupuncture for stable angina pectoris (SAP) is not only methodologically fragile but also clinically unreliable without rigorous sample size planning.

Moreover, our analysis extended beyond primary outcome reporting to include key methodological indicators under the CONSORT framework. Notably, only one study (3.23%) reported a priori sample size estimation (Item 7a), and none provided interim analyses or stopping rules (Item 7b). Allocation concealment and implementation of randomization (Items 9 and 10) were each reported in only 3.23% of studies. Furthermore, blinding implementation (Item 11b) and explanation for trial termination (Item 14b) were completely absent. In total, 19 out of 37 CONSORT sub-items had reporting rates below 10%, suggesting a pattern of systematic underreporting rather than isolated omission. Such deficiencies not only compromise internal validity but also introduce significant risks of selection bias, performance bias, and reporting bias, ultimately undermining the interpretability and credibility of the reported clinical evidence.

These widespread deficiencies may not solely reflect individual lapses but point to structural issues in the research ecosystem. In many domestic journals, the use of CONSORT or STRICTA checklists is not enforced during submission or peer review. Editorial policies on methodological rigor remain inconsistent, and many acupuncture researchers lack formal training in clinical trial design, statistical planning, and standardized reporting practices. This institutional context contributes to persistent reporting omissions and low compliance with international standards.

Inadequate Statistical Analysis of Results

The deficiencies in statistical analysis are reflected in two aspects:

1. Descriptive analysis: Normally, dataset sizes, distribution of central cases, total dropouts, discontinuations, screening, exclusions, randomizations, and reasons for loss to follow-up should be detailed in the flowchart. However, only 3.23% of the RCTs used the CONSORT recommended flowchart, and only 6.45% reported dropouts/rejections with explanations. Therefore, dropouts and cullings are crucial for trial analysis, and statisticians must account for this imbalance to obtain accurate results.[43] Additionally, baseline data such as demographic and clinical characteristics can be used by evaluators to assess the similarity between groups.[44] Consistency in baseline data is beneficial for evaluating the effects before and after the trial. Although the results show that 37.5% of the research tables listed baseline data in a tabular form, the demographic and clinical characteristics included in these baseline data were mostly incomplete. Another factor influencing the results is the lack of stratification in the statistical analysis population, with only one study reporting an intention to treat analysis.
2. Outcome Analysis: The analysis of outcomes is primarily addressed in CONSORT items 17 and 18. High-quality clinical research mandates the presentation of results, effect sizes, and precision for both primary and secondary outcome measures. Considering that efficacy and safety indicators for SAP are primarily continuous variables, outcome analyses should include both p-values and confidence intervals when reporting the precision of trial results. The p-value indicates whether a statistical difference exists between the two groups, whereas the confidence interval helps assess whether a significant clinical difference may still exist even if statistical significance is not achieved.[45] Therefore, reporting confidence intervals is crucial. However, according to literature quality assessments, only 6.45% of studies reported confidence intervals. Other potential analyses in trials, such as the use of the Nemenyi test or the Bonferroni method to adjust the significance level for multiple comparisons of the primary outcome, the presence of a protocol to handle missing data for the primary outcome to assess the stability of conclusions, and whether subgroup analyses based on the severity of angina pectoris are required, should also be reported according to the specific circumstances. But when reporting results, 96.77% of studies overlooked theimportance of these other analyses.

Main Issues Affecting the Quality of Needlepoint Reports (Based on STRICTA Criteria)

The evaluation of acupuncture based on the STRICTA criteria revealed the following major issues in the quality of reporting in RCTs.

Uncertainty About Whether Treatment Changed in the Trial

It was reported in 9.68% of studies that participants were provided with partially individualized treatment. These studies described that, in addition to standardized protocols, angina pectoris subjects were required to use different acupoint combinations based on Traditional Chinese Medicine syndrome types and individual differences. About 64.74% of the included RCTs described a uniform intervention protocol; however, only 12.9% of the studies provided specific details on whether the protocol was completed as prescribed. Furthermore, 54.84% of the studies did not clarify whether patients received additional individualized treatments alongside the uniform protocol during the trial. This lack of clarity was the primary reason for the low reporting rate in the studies.

Reports of Neglect of Needle Types

The acupuncture set includes factors such as diameter, length, and manufacturer or material of the acupuncture used. According to the evaluation results, only 35.48% of the RCTs included this information in their reports. About 64.52% of the studies completely neglected the potential influence of acupuncture characteristics on experimental data. Furthermore, 16.12% of RCTs reported only one characteristic of the acupuncture set, such as length, size, or manufacturer. This reflects researchers' lack of awareness regarding the importance of reporting these essential items.

Lack of Information on Treatment Sites

Treatment site-related information was reported in clinical trials as operational guidelines for therapists and descriptions of patient-related information. However, this was included in only 3.23% of the studies. In these studies, it was clearly stated that the nature of the study, including its risks, benefits, voluntary participation, and the consequences of withdrawal, were explained to the patients by the study experts. Additionally, the operational guidelines for therapists were developed by statisticians, who created a random allocation scheme, while clinical experts developed a standardized acupuncture prescription to test its therapeutic effects. No similar descriptions of treatment site-related information were found in any of the other included literature.

Lack of Description of Therapist's Background

Only 6.45% of the RCTs provided a description of the qualifications, years of experience, and training in acupuncture treatment, one RCT stated that acupuncturists were required to have at least 3 years of experience in practicing acupuncture.[10] One RCT indicated that all treatments were provided by four licensed acupuncturists[11] certified by the National Acupuncture and Oriental Medicine Commission, with fourteen years of clinical experience.

Lack of Rationalization of Control Measures

Any clinical trial should clearly describe the control measures and provide a justification for their use, enabling readers to assess the rationale behind the trial design. Additionally, the selection of control group interventions should be supported by relevant literature or expert opinion. Among the 31 included RCTs, only 25.81% explicitly stated the rationale for the control group setting, indicating a deficiency in trial design that may compromise the reliability of the results.

Reporting Irregularities in the Names of Acupuncture Points

Only 25.81% of the RCTs clearly and consistently reported both the specific location (unilateral/bilateral) and the names of the acupoints. Furthermore, 64.74% of studies employed non-internationally recognized terminology (eg, non-standardized reporting) and failed to specify corresponding anatomical sites. Among these, 3.23% of the studies, such as those focusing on ST36, failed to fully describe the acupuncture points used, as well as the unilateral/bilateral needle approach. This reflects to some extent the neglect of acupoint reporting in acupuncture trials, which also impacts the reproducibility of acupuncture research.

The overall reporting quality of randomized controlled trials (RCTs) investigating acupuncture for stable angina pectoris was critically inadequate. Although all 31 included studies involved acupuncture interventions, only 8 studies (25.81%) fulfilled more than 70% of the STRICTA checklist, reflecting widespread noncompliance with standardized reporting criteria. Detailed descriptions of key procedural elements were particularly scarce: only 35.48% of studies reported needling technique, 25.81% insertion depth, 22.58% retention time, and just 9.68% described needle response manipulation. Treatment frequency and session count were omitted in more than half of the studies. These severe

reporting gaps not only impede the reproducibility of trials but also compromise the internal consistency of the interventions, making it difficult to evaluate whether observed clinical outcomes are attributable to the intervention itself or to uncontrolled procedural variability. As such, the poor quality of intervention descriptions likely contributes to the inconsistencies observed in acupuncture efficacy across trials. Ultimately, such variability in intervention reporting may further exacerbate instability in both reporting quality and clinical outcomes, undermining confidence in the therapeutic effectiveness of acupuncture for stable angina pectoris.

Improve Ways and Means to the Quality of Reports RCT

Several issues regarding the suboptimal quality of acupuncture treatment in SAP trial reports underscore the unreasonable design of the SAP acupuncture clinical trial protocol by researchers, the insufficient implementation capacity of clinical practitioners, and the lack of standardized reporting by clinical literature authors on the trial protocol and related details. In addition, a comparison of the quality of literature on acupuncture treatment for SAP in domestic and international studies indicates that international literature is generally of higher quality than domestic literature. This disparity is largely attributed to the varying levels of emphasis placed on the CONSORT statement and STRICTA guidelines.[46] By incorporating best practices from high-quality international studies, future RCTs can enhance literature quality by focusing on the following four aspects.

Initially, forming a multidisciplinary team of acupuncture, cardiology, and biostatistics experts is critical. Lead investigators and statisticians should collaboratively design trial protocols and statistical plans, subject to iterative refinement. Key elements research objectives, methodologies, target populations, endpoints, and analytical frameworks must be clearly defined. Protocols should be prospectively registered with a clinical trial registry and updated to document progress and deviations. Subsequently, mandatory pre-trial training should focus on protocol and Standard Operating Procedure implementation. This ensures investigators master study procedures and details, thereby enhancing intra-rater and inter-rater reliability to safeguard result validity. Furthermore, given investigators' limited proficiency in randomization, blinding, and concealment, specialized training programs should be implemented. Independent oversight during trial conduct can mitigate bias risks associated with these methodologies. In addition, strengthen the training of clinical researchers in literature reporting, with a focus on the Standard Operating Procedure, CONSORT statement, and STRICTA standards, to enhance the quality of report writing. Moreover, academic journals should mandate the use of reporting checklists and integrate them into submission and peer review workflows. Editorial enforcement of CONSORT and STRICTA adherence is vital to improving overall reporting quality in acupuncture research. Finally, structured templates specific to acupuncture RCTs should be developed to guide both authors and reviewers. Reviewer education in methodological appraisal will further align publication standards with international norms and enhance the interpretability and utility of trial findings.

These findings reflect broader concerns that have emerged in recent years regarding the methodological rigor and reporting standards of acupuncture randomized controlled trials. Increasing attention has been paid within the field to issues such as inadequate reporting of intervention details, insufficient description of randomization and blinding procedures, and lack of protocol transparency. The present study contributes to this ongoing discourse by providing a focused analysis of acupuncture trials for stable angina pectoris. Through this analysis, it reinforces the field-wide recognition that standardized reporting—guided by CONSORT and STRICTA—is essential not only for enhancing the reproducibility of individual studies but also for strengthening the overall credibility of acupuncture as a scientifically grounded therapeutic approach.

Acknowledgments

This research was supported by the Research Topics on National Postgraduate Education of Traditional Chinese Medicine in 2023: Empirical Research on "Cloud Teaching" of Traditional Chinese Medicine English for Graduate Students Based on the BOPPPS Model (NO.YJS-YB-2023-54) and Innovative Research on Multi modal Translation Teaching Mode of Traditional Chinese Medicine Classics from the Perspective of Deepseek (JGJX25C062). Funders did not play any role in study design, data collection, interpretation and analysis, manuscript preparation, or publication decisions.

Author Contributions

All authors made a significant contribution to the work reported, whether that is, in the conception, study design, execution, acquisition of data, analysis, and interpretation, or in all these areas, took part in drafting, revising, or critically reviewing the article, gave final approval of the version to be published, have agreed on the journal to which the article has been submitted, and agree to be accountable for all aspects of the work.

Disclosure

The authors report no conflicts of interest in this work.

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