

Chinese guidelines on acupuncture for post-stroke dysphagia – quality assessment and evidence analysis

Lan Yuan¹, Zi-yu Tian^{1,✉}, Bin Liu¹, Yu-ying Hong², Nicola Robinson^{1,3,4,✉}

¹Institute of Acupuncture and Moxibustion, China Academy of Chinese Medical Sciences, Beijing 100700, China

²Dongzhimen Hospital, Beijing University of Chinese Medicine, Beijing 100070, China

³Centre for Evidence-Based Chinese Medicine, Beijing University of Chinese Medicine, Beijing 100029, China

⁴Institute of Health and Social Care, London South Bank University, London, SE1 0AA, United Kingdom

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ABSTRACT

Introduction Clinical practice guidelines (CPGs) set quality standards for effective and safe practices, which should be supported by robust evidence. We aimed to identify and evaluate the quality of current Chinese CPGs regarding the use of acupuncture for post-stroke dysphagia and to compare their supporting evidence. **Methods** Four Chinese databases and two websites were searched to identify relevant CPGs. Two reviewers independently screened the titles, abstracts, and full texts. Two authors assessed the quality of the identified CPGs using the Appraisal of Guidelines for Research and Evaluation (AGREE II). **Results** After title/abstract and full-text screening, and removal of duplicates and irrelevant CPGs, 13 CPGs remained. The CPGs were published between 2011 and 2024. Moreover, ten guidelines were affiliated with hospitals/universities, while three did not indicate their authors' affiliations. The CPGs were sponsored by the World Health Organization, professional committees, and the National Administration of Traditional Chinese Medicine. Among the 13 guidelines, four Western medicine guidelines were published by the same first author (on behalf of the Stroke Association) in 2012, 2017, 2019, and 2023. Evaluation using AGREE II revealed that the quality of the 13 CPGs varied. Specifically, five, two, and six guidelines were graded A, B, and C, respectively. The CPGs were backed by poor and often outdated evidence. Notably, only one CPG was developed by professionals with knowledge regarding acupuncture, eight CPGs were mainly developed by traditional Chinese or integrative medicine doctors, and the remaining four CPGs were developed by Western medicine doctors. **Conclusion** It is important to improve the quality of CPGs and their underlying evidence. Additionally, CPGs should be developed by research methodologists and appropriately qualified clinicians.

KEYWORDS

clinical guidelines, acupuncture, post-stroke dysphagia, quality appraisal, evidence analysis

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1. Introduction

Current and effective clinical practice is dependent on the establishment of robust research-based evidence. Clinical practice guidelines (CPGs) provide professional judgments regarding the appropriateness and effectiveness of interventions. These guidelines establish quality standards to ensure consistent patient care and should be based on the best available scientific evidence, expert opinions, and patient preferences.¹ The development of CPGs has been rapidly increasing worldwide, leading to differences in CPG recommendations among countries, organizations, governments, and professional bodies, which can influence clinical decision-making.² The question remains: How can we ensure that all patients receive optimal care?

This study explores the development of CPGs in China regarding acupuncture treatment of post-stroke dysphagia. Stroke is prevalent worldwide, with dysphagia affecting up to 50% of patients with stroke,³ leading to severe complications such as pneumonia, malnutrition, and dehydration. It is important to identify suitable treatment options for improving patients' quality of life and ensuring that clinical decision-making is based on research evi-

dence.

Acupuncture is commonly used in clinical practice in China for stroke survivors and particularly for stroke-related dysphagia.^{4,5} Evidence suggests that acupuncture is a safe and cost-effective intervention;⁶⁻⁹ accordingly, several CPGs have recommended acupuncture for stroke and its sequelae.¹⁰

However, systematic reviews have reported variable evidence quality.^{8,11,12} A recent study¹³ appraised the methodological quality of international CPGs for dysphagia after acute stroke, highlighting the need for improvements in applicability and stakeholder involvement. Further, the evidence used in CPGs was not always identified, cited, or evaluated,¹³ and the methodological quality of these CPGs remains to be sufficiently appraised. We aimed to identify current Chinese CPGs regarding the use of acupuncture for stroke-related dysphagia and evaluate their quality using the Appraisal of Guidelines for Research and Evaluation (AGREE II). Additionally, we aimed to compare the evidence cited in the CPGs.

2. Methods

2.1. Eligibility criteria

This study included Chinese CPGs, published between 2011 and 2024, that included recommendations on the use of acupuncture for post-stroke dysphagia.

✉ Corresponding authors.

E-mail addresses: tianzy@mail.cintcm.ac.cn (ZY. Tian); prof.nicky.robinson@outlook.com (N. Robinson)

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2.2. Search strategy

We performed a comprehensive search of databases and websites (from inception to 12th September 2024) for relevant CPGs that mentioned acupuncture and stroke dysphagia. The databases included the China National Knowledge Infrastructure (CNKI) database, Wanfang database, Chinese Scientific Journals Database (VIP), China Biology Medicine database, Chinese Acupuncture Standards website, and Chinese Medical Pulse Clinical Guide website. Search strategies were tailored for each database. Appendix 1 shows the search strategy used for CNKI. Website queries were conducted using the search term “stroke.” Further, database and website results were imported to Note Express (version 3.2, Beijing Aegean Lezhi Technology, Beijing, China) and manually searched, respectively, followed by duplicate removal. Disagreements were resolved by a third reviewer (BL).

2.3. Data screening and extraction

Two reviewers (LY and YYH) independently screened titles, abstracts, and full texts, with disagreements being resolved by a third reviewer (BL). We used Excel (2016) to extract the following items: developer and team, publication date, recommendations, whether a meta-analysis was conducted, grading system, disease, target population, and funding.

2.4. Quality assessment by AGREE II

Two reviewers (ZYT and LY) assessed the quality of the included CPGs using the AGREE II tool.¹⁴ The 23 items of AGREE II were divided into six domains and two overall assessment sections. Each item was scored from 1 to 7, where 1 and 7 indicate no and full compliance, respectively, with the requirements. The final score for each domain was calculated as follows: The scaled domain score = (obtained score – minimum possible score) / (maximum possible score – minimum possible score) × 100%. Intragroup correlation coefficients (ICCs) were used to assess inter-assessor and test-retest reliability.

bility.

3. Results

3.1. Flow chart of databases and articles identified

Database and website queries yielded 394 titles and abstracts. After removal of duplicates, 370 articles remained. After title and abstract screening, 343 articles were removed, including 224 non-guidelines, 118 translated CPGs, and 1 non-stroke guideline. Additionally, after full-text screening, we removed 12 and 2 CPGs that did not mention acupuncture and dysphagia, respectively. Finally, 13 CPGs were included in the analysis.^{15–27} Figure 1 shows a flow chart of the CPG selection process.

3.2. Characteristics of included CPGs

3.2.1. General characteristics

The included 13 Chinese CPGs covered five diagnoses, including cerebral hemorrhage, ischemic stroke, diabetic cerebrovascular disease, cryptogenic stroke, and post-stroke pseudobulbar palsy. The publication years ranged from 2011 to 2024. Ten guidelines were affiliated with hospitals/universities, while three did not indicate their authors' affiliations. The CPGs were sponsored by the World Health Organization, various professional committees, and the National Administration of Traditional Chinese Medicine. Additionally, four Western medicine CPGs were published by the same first author.^{16,22,25,26} The 2012 and 2017 versions focused on early rehabilitation for acute stroke. Contrastingly, the latest version (2023) was an update of the 2019 version, which both focused on the comprehensive clinical management of stroke. One CPG²⁷ was developed by professionals with knowledge of acupuncture methodology and Western medicine; two CPGs for traditional Chinese and integrative medicine were developed by TCM doctors, western

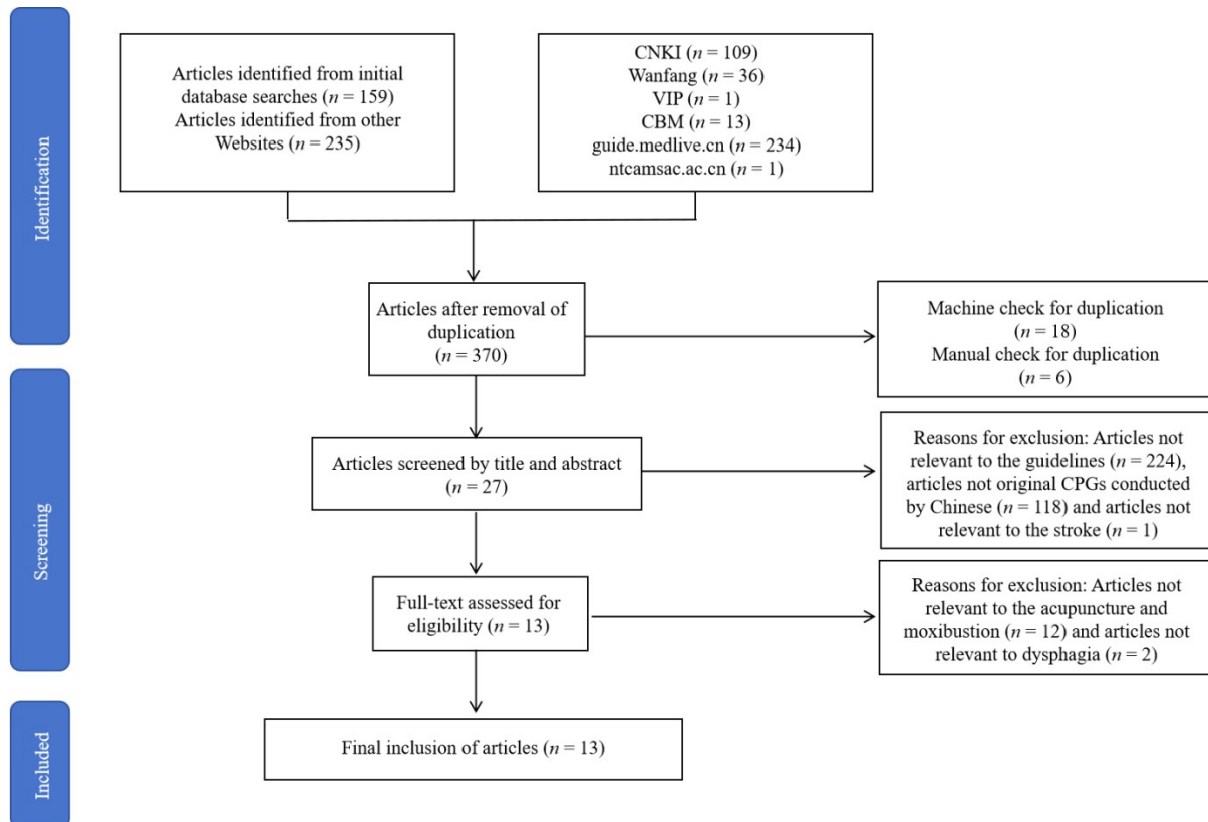


Figure 1 Flow chart of study selection

Notes: CNKI: China National Knowledge Infrastructure database; VIP: Chinese Scientific Journals Database; CBM: China Biology Medicine; CPGs: clinical practice guidelines.

medicine doctors, and methodologists;^{15,20} six CPGs for TCM and integrative medicine were developed by TCM doctors; and four CPGs^{16,22,25,26} were developed by Western medicine doctors. Six and five CPGs explicitly described conflicts of interest and funding sources, respectively. Table 1 provides detailed information regarding the CPGs.

3.3.2. Evidence grade and recommendations of the included CPGs

Evidence grading was performed using the GRADE system for evidence grading and recommendations in four CPGs,^{15,17,20,27} and the Oxford Center for Evidence-Based Medicine (OCEBM) in seven CPGs.^{16,18,19,22,23,25,26} However, one CPG²¹ reported using a grading tool but did not describe it, while another CPG did not mention any grading tool. The four CPGs assessed using the GRADE systems concerned TCM and acupuncture, while the seven CPGs assessed using OCEBM regarded Western medicine. Table 1 shows detailed information regarding the evidence grading tools and relevant recommendations.

3.3. Quality appraisal of included CPGs

Inter-assessor agreement in the quality assessments of CPGs were calculated using ICCs. The ICC values for Domains 1, 2, 3, 4, 5, and 6 were 0.620, 0.927, 0.886, 0.729, 0.804, and 0.743, respectively, indicating good intra-reviewer item score agreement.

3.3.1. Domain 1 (Scope and Purpose)

Domain 1 generally evaluates the purpose of the guidelines, targeted health problems, and the population to which they apply. The overall mean score was 60% (minimum, 17%; maximum, 94%), with six guidelines exceeding the average score.^{15,16,20–22,27}

3.3.2. Domain 2 (Stakeholder Involvement)

Domain 2 generally evaluates the professionals on the guideline panel as well as the target population and users of the guidelines. The overall mean score was 57% (minimum, 8%; maximum 89%); further, all included CPGs did not explicitly describe the participation of patient representatives in the guideline design.

3.3.3. Domain 3 (Rigor of Development)

Domain 3 is a comprehensive evaluation of the methodology for guideline design, which requires guideline developers to clearly describe the search strategy and evaluation of the evidence quality; moreover, guidelines should be externally reviewed and updated. The average score of all CPGs was 30% (minimum, 5%; maximum, 78%). Among them, three guidelines^{16,20,22} described the guideline-updating methods, five guidelines^{15,16,20,22,27} described the database queries, three guidelines^{15,20,23} described the methods used to form recommendations, one guideline²⁷ clearly described the search strategy, and four guidelines^{15,17,20,27} used GRADE to evaluate evidence quality and determine the recommendation strengths. Two guidelines^{15,20} mentioned involving an external peer review process.

3.3.4. Domain 4 (Clarity of Presentation)

Domain 4 addresses the evaluation of recommendations. The overall mean score was 61% (minimum: 25%; maximum: 89%). Moreover, all CPGs described the recommendations for acupuncture for dysphagia, with four guidelines^{18,20,24,27} flagging significant recommendations.

3.3.5. Domain 5 (Applicability)

The overall mean score for this domain was 15% (minimum: 2%; maximum: 40%). No guidelines described factors that facilitated and impeded their application. Four guidelines^{15,16,20,22} provided advice or tools for applying these recommendations. One guideline¹⁵ provided the criteria for monitoring or auditing.

3.3.6. Domain 6 (Editorial Independence)

The overall mean score was 33% (minimum: 0%; maximum: 100%). One

guideline¹⁶ seemed not to be influenced by the views of the sponsoring organization, while six guidelines^{15,16,18,20,22,23} published and documented conflicts of interest.

CPGs were categorized based on the AGREEII criteria,²⁸ which evaluates CPGs based on a combination of scores of the six domains. We classified the CPGs into three recommendation levels as follows: grade A: Positively recommended (score $\geq 50\%$ in four or more domains), grade B: Recommended (score $\geq 50\%$ in three domains), and grade C: Recommended under certain conditions (score $\geq 50\%$ in two or less domains) (Table 2). One CPG²⁷ had been developed by professionals with a knowledge of acupuncture methodology and Western medicine. For this CPG, the score for Domains 1–4 was $\geq 50\%$, indicating grade A positive recommendation. Two CPGs concerning TCM and integrative medicine involved TCM and Western medicine doctors.^{15,20} For both CPGs, the scores for Domains 1–4 and 6 were $\geq 50\%$, indicating grade A recommendations. The remaining six CPGs concerning TCM or integrative medicine CPGs were only developed by TCM doctors.^{17–19,21,23,24} For these CPGs, the score in two or more domains was $<50\%$,^{17–19,23,24} indicating grade C recommendations. The scores for Domains 1, 2, and 4 were $\geq 50\%$,²¹ indicating grade B recommendations. Four CPGs^{16,22,25,26} were developed by Western medicine doctors. Among these CPGs, the scores for Domains 1, 2, 3, 4, and 6 in two CPGs were $\geq 50\%$ (Level-A positive recommendation).^{16,22} In another CPG,²⁵ the scores for Domains 1, 2, and 4 were $\geq 50\%$, indicating grade B recommendation. In the final CPG,²⁶ the score in two or more domains was $<50\%$, indicating grade C recommendations.

3.4. Evidence used and updated in included CPGs

Five CPGs^{15,20,21,23,27} graded the evidence and provided recommendations based on meta-analyses of randomized controlled trials (RCTs) (Table 3). Four Western medicine CPGs^{16,22,25,26} did not update the evidence of acupuncture for post-stroke dysphagia. Instead, only one RCT was cited in 2012 despite the presence of numerous systematic reviews and meta-analyses.¹²

4. Discussion

4.1. Few specialist guidelines for acupuncture and moxibustion

Among the included CPGs, only one offered evidence-based CPGs for acupuncture and moxibustion.²⁷ Four CPGs^{16,22,25,26} referred to the use of acupuncture for cerebrovascular disease in Western medicine, while the remaining eight CPGs^{15,17–21,23,24} either referred to diagnosis and treatment in TCM or integrative medicine. There are several evidence-based practice guidelines in TCM. However, theoretical CPGs for traditional acupuncture should be combined with CPGs for Western medicine and localized acupuncture. A previous study found that among 604 Chinese CPGs for different conditions, only 74 (12%) recommended any TCM, with 43 of them being related to herbal medicine.³⁰ Among those 74 guidelines, only 11 mentioned appropriate TCM references and only five applied evidence grading.²⁹ In the present study, only three CPGs mentioned and recommended acupuncture for acute stroke ($n = 1$) and post-stroke rehabilitation ($n = 2$).

4.2. The quality of clinical practice guidelines

According to AGREE II analysis, five,^{15,16,20,22,27} two,^{19,23} and six CPGs^{17–19,23,24,26} were graded as grade A, B, and C, respectively. Additionally, the mean score for Domain 5 was 15%; further, most CPGs did not describe factors facilitating or impeding their development, provide tools to support the application of recommendations, or consider potential resources for applying the recommendations. The average scores for Domains 3 and 6 were $\approx 30\%$, indicating that many guidelines did not clearly describe specific search strategies or steps for updating the guidelines. Four CPGs had grade A recommendations (scores $\geq 50\%$ for Domains 1, 2, 3, and 4) due to provision of clear descriptions of their scope and purpose, participation of methodologists in their development, and description of the backing evidence and strength of their

Table 1 General characteristics of the included CPGs

Title	Disease	Year of publication	Sponsor	Onset time	Target users	Conflict of interest statement	Funding sources
[15] Clinical Evidence-Based Practice Guidelines for Integrated Chinese and Western Medicine in cerebral hemorrhage stroke rehabilitation	Ischemic stroke and cerebral hemorrhage	2024	World Health Organization Center for Traditional Medicine	2022	Doctors: Rehabilitation-related practitioners at all levels of medical institutions and rehabilitation organizations (including clinicians, rehabilitation therapists and nursing staff);Population: people in the acute, recovery, and sequela phases of stroke	Yes	Provincial- and ministerial-level project
[16] Chinese Stroke Association Guidelines for Clinical Management of Cerebrovascular Diseases (Second Edition) (Excerpt)—Chapter Eight Cerebrovascular Disease Rehabilitation Management	Ischemic stroke, cerebral hemorrhage and cryptogenic stroke	2023	Executive Council of the China Stroke Association	2022	Relevant professionals and social workers engaged in stroke prevention, treatment, care, and rehabilitation as well as relevant regulatory agencies of governmental departments, healthcare administrators, pharmaceutical companies, healthcare demanders, and other stakeholders	Yes	No
[17] Guidelines for chronic disease management of ischemic stroke in the elderly	Ischemic stroke	2022	Chinese Society of Gerontology and Geriatrics	No	Specialists, general practitioners engaged in community health management, patients, and patient families	No	No
[18] Guidelines for the combined diagnosis and treatment of diabetic cerebrovascular disease (ischemic stroke)	Diabetic cerebrovascular disease (ischemic stroke)	2022	Endocrinology and Metabolic Disease Specialized Committee of Chinese Physicians' Association of Integrative Medicine	No	No	No	No
[19] Clinical Practice Guidelines on Chinese Medicine Rehabilitation - Ischemic stroke and Cerebral Infarction	Ischemic stroke and cerebral hemorrhage	2021	No	No	Rehabilitation institutions at all levels in China, rehabilitation departments in other Chinese medicine hospitals or general hospitals, etc.	No	National-level project
[20] Evidence-based practice guideline on integrative medicine for stroke 2019	Ischemic stroke and cerebral hemorrhage	2020	Brain Disease Branch of the Chinese Society of Traditional Chinese Medicine, Brain Disease Specialized Committee of the Guangdong Provincial Society of Traditional Chinese Medicine, Stroke Specialized Committee of the Guangdong Provincial Society of Integrative Chinese and Western Medicine	No	This guide is applicable to hospitals and rehabilitation organizations at all levels. The guidelines targeted medical practitioners at all levels of medical institutions, including traditional Chinese medicine practitioners, integrative Chinese and Western medicine practitioners, clinical practitioners, rehabilitation practitioners, acupuncturists, clinical pharmacists, etc..	Yes	National-level project, provincial-level project, and ministerial-level project
[21] Clinical Practice Guidelines for Chinese Medicine Rehabilitation	Ischemic stroke	2019	Fujian University of Traditional Chinese Medicine Rehabilitation Hospital	No	Various Chinese rehabilitation organizations at all levels, other Chinese medicine hospitals, general hospitals, rehabilitation departments of general hospitals, etc.	No	National-level project, provincial-level project and ministerial-level project
[22] Chinese Guidelines for the Clinical Management of Cerebrovascular Disease (Abridged) —Stroke Rehabilitation Management	Ischemic stroke and cerebral hemorrhage	2019	Executive Council of the Chinese Stroke Association	December, 2017	Used by professionals and social workers involved in stroke prevention, treatment, care, and rehabilitation, it also provides guidance to relevant regulatory agencies in government departments, health care administrators, pharmaceutical companies, health care providers, and other stakeholders.	Yes	No

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Title	Disease	Year of publication	Sponsor	Onset time	Target users	Conflict of interest statement	Funding sources
[23] Chinese guidelines for combined Chinese and Western medicine diagnosis and treatment of cerebral infarction (2017)	Ischemic stroke	2018	Neurology Committee of the Chinese Society of Integrative Medicine (CSIM)	No	No	No	No
[24] Guidelines for Chinese medicine diagnosis and treatment of cerebral hemorrhage	Cerebral hemorrhage	2011	No	No	No	No	National-level project
[25] Guidelines for Early Stroke Rehabilitation in China (2017)	Ischemic stroke and cerebral hemorrhage	2017	No	No	Neurologist at a general hospital	No	No
[26] China Stroke Rehabilitation Guidelines (2011 Complete Edition)	Ischemic stroke and cerebral hemorrhage	2012	No	No	No	No	National-level project
[27] Evidence-based guidelines of clinical practice with acupuncture and moxibustion: Apoplectic pseudobulbar palsy	Post-stroke pseudobulbar palsy (Ischemic stroke and cerebral hemorrhage)	2014	National Administration of Traditional Chinese Medicine	No	Professionals engaged in clinical and scientific research on acupuncture and moxibustion	No	No

Table 1 General characteristics of the included CPGs (continued)

No./Evidence grading tools	Grade of evidence and recommendation strength	Included studies	Searching Database	Date of search	Acupuncture recommendations
[15] GRADE	Low-quality evidence, Weak recommendation	24 RCTs	CNKI, Wanfang Database, CBM, Chinese Scientific Journals Database (VIP), PubMed, Embase, Cochrane, and Web of Science	From database inception to 25 th November 2022	For patients recovering from stroke, acupuncture therapy in combination with conventional rehabilitation therapy is recommended to improve swallowing dysfunction.
[16] OCEBM	Inconsistent evidence from single RCT or non-randomized studies (B level b evidence), Weak recommendation (II a).	No	CNKI, Wanfang Database, Chinese Scientific Journals Database (VIP), MEDLINE, PubMed, Cochrane Library	1 st July 2018 to 30 th June 2022	Recommends acupuncture as an adjunct to dysphagia rehabilitation
[17] GRADE	Low-quality evidence, Weak recommendation	One RCT	No	No	Acupuncture is effective in the treatment of speech disorders, dysphagia, cerebrovascular dysfunction, and limb disorders after ischemic stroke. Acupuncture may have better efficacy in early intervention than in late intervention
[18] OCEBM	Inconsistent evidence from single RCT or non-randomized studies (B level b evidence), Strong recommendation (I level)	Two RCTs	No	No	Acupuncture and moxibustion are recommended for dysphagia in the post-stroke period: wind-phlegm pattern

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No./Evidence grading tools	Grade of evidence and recommendation strength	Included studies	Searching Database	Date of search	Acupuncture recommendations
[19] OCEBM	No	Two RCTs	No	No	Acupuncture can also be effective in treating many complications in the acute phase, including swallowing dysfunction
[20] GRADE	Low-quality evidence, Weak recommendation	Eight RCTs	PubMed, Embase, The Cochrane Library, CBM, CNKI and Wanfang Database	Establishment of the database to December 2017	For patients with post-stroke dysphagia, the use of acupuncture in conjunction with basic care and rehabilitation (mainly swallowing training) can be considered to promote the recovery of swallowing function
[21] Unclear	Unclear	Twelve RCTs	No	No	Acupuncture combined with swallowing rehabilitation helps recovery of post-stroke swallowing dysfunction
[22] OCEBM	Inconsistent evidence from single RCT or non-randomized studies (B level b evidence), Weak recommendation (II a)	No	CNKI, Wanfang Database, Chinese Scientific Journals Database (VIP), MEDLINE/PubMed, Cochrane Library	Establishment of the database to 30 th June 2018	Acupuncture treatment can be considered as adjunctive therapy for dysphagia
[23] OCEBM	Inconsistent evidence from single RCT or non-randomized studies (B level b evidence), Strong recommendation (I level)	98 RCTs	No	Establishment of the database to November 2017	Following stabilization after Western medicine treatment, acupuncture can be combined with traditional Chinese medicine to treat cerebral infarction depending on the situation in order to improve post-stroke motor and non-motor system impairments, including swallowing dysfunction, cognitive dysfunction, aphasia, constipation, diplopia, etc.
[24] No	No	No	No	No	Acupuncture can be performed after the condition has stabilized
[25] OCEBM	No	No	No	No	For patients with swallowing disorders, it is recommended to use orbicularis oris muscle training, tongue movement training, swallowing reflex training, pharyngeal movement training, empty swallowing training, ice stimulation, neuromuscular electrical stimulation, etc.
[26] OCEBM	Inconsistent evidence from single RCT or non-randomized studies (B level b evidence), Weak recommendation (II level).	One RCT	No	No	Acupuncture is recommended for patients with medullary palsy
[27] GRADE	1. Low quality of evidence, strong recommendation; 2. Low quality of evidence, strong recommendation; 3. Moderate quality evidence, strong recommendation; 4. Moderate quality evidence, weak recommendation; 5. Very low-quality evidence, weak recommendation; 6-7. Moderate quality evidence, strong recommendation; 8-9. Low quality of evidence, strong recommendation; 10-12. Very low-quality evidence, weak recommendation	>10 RCTs	CNKI, MEDLINE, PubMed, Cochrane English Database, Chinese Medical Codex	No	Recommendation 1. <i>Lianquan</i> (RN 23), <i>Jia Lianquan</i>, <i>Renying</i> (ST 9), and <i>Futui</i> (LI 18) are mainly used to improve the patient's swallowing function and sound-constructing function; Recommendation 2. <i>Fengfui</i> (DU 16), <i>Fengchi</i> (GB 20), <i>Yamen</i> (DU 15), and <i>Jingbailao</i> (EX-HN15a) are mainly used to improve the patient's swallowing function and sound-constructing function; Recommendation 3. <i>Jinjini</i> (EX-HN12) and <i>Yuye</i> (EX-HN13) puncture and bloodletting can improve dysphagia symptoms; Recommendation 4. Selecting acupoints from the distal end of the meridian as matching acupoints; Recommendation 5. Dialectically selecting acupoints as matching acupoints; Recommendation 6-7. Body needle and neck needle should be used for patients with pseudobulbar palsy in various stages of stroke; Recommendation 8-9. Xingnao Kaiqiao acupuncture and combination of scalp and body needle therapy should be used for patients with pseudobulbar palsy in various stages of stroke; Recommendation 10-12. Bloodletting therapy, Jin's three-needle therapy and therapy of "Tong Tiao Du Ren" could be used for patients with pseudobulbar palsy in various stages of stroke.

Notes: GRADE: The Grading of Recommendations Assessment, Development and Evaluation; RCT: Randomized controlled trial; CPGs: Clinical practice guidelines; CNKI: China National Knowledge Infrastructure; CBM: China Biology Medicine; OCEBM: Oxford Center for Evidence-Based Medicine.

Table 2 AGREE II evaluation results of included clinical practice guidelines

Guide No.	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6	Grade of recommendation
[15]	86	86	61	67	40	71	A
[16]	67	83	50	89	25	100	A
[17]	53	39	9	53	6	4	C
[18]	42	36	8	47	6	8	C
[19]	42	64	9	31	2	4	C
[20]	83	89	78	89	29	54	A
[21]	61	56	6	53	8	4	B
[22]	83	86	45	89	25	96	A
[23]	50	22	18	44	21	33	C
[24]	17	8	5	25	6	0	C
[25]	58	61	28	64	6	4	B
[26]	42	28	15	56	4	25	C
[27]	94	81	58	83	21	29	A
Mean	60	57	30	61	15	33	
ICCs	0.620	0.927	0.886	0.729	0.804	0.743	

Notes: ICC: intragroup correlation coefficients.

Table 3 Evidence cited in Chinese CPGs

Guideline Ref.	Meta-analysis conducted or cited	Number of RCTs cited
[13]	Yes	24
[14]	No	0
[15]	No	1
[16]	No	1
[17]	No	2
[18]	Yes	8
[19]	Yes	12
[20]	No	0
[21]	Yes	98
[22]	No	0
[23]	No	0
[24]	No	1
[25]	Yes	> 10

Notes: CPGs: clinical practice guidelines; RCT: randomized controlled trial.

recommendations. Further training of guideline methodologists and developers in the assessment of the level and strength of evidence is warranted. None of included CPGs reported being influenced by the sponsoring organization. Guideline development teams should focus on improving the quality of guidelines based on the AGREE II tool and extensively refining each item. Additionally, patients should be involved in the formation of recommendations. A recent review has described a set of principles and processes essential for CPG development.² Notably, we only evaluated the recommendations dealing with the use of acupuncture for post-stroke dysphagia rather than the entire CPG.

4.3. The guidelines had low methodological quality

Globally, the GRADE system is used in guideline development; however, it was adopted in only four CPGs. The GRADE system grades the evidence and strength of recommendations by considering factors such as the applicability of the evidence, patient values, and wishes.²⁸ Most CPGs were published by hospitals or universities, and some of them did not involve methodologists. This suggests that CPGs are mainly still developed through expert consensus and often lack rigorous scientific methodology.³¹ This indicates that guideline

development should be scientific and standardized, with input from acupuncture professionals.

4.4. Guidelines are supported by low-quality evidence

Our review indicated only seven of the thirteen CPGs cited evidence that supported their recommendations. The same author published four Western medicine CPGs,^{16,22,25,26}; however, three of them did not cite evidence supporting their recommendations. This indicates that CPG development was not backed by evidence or involve specialists in acupuncture. Most CPGs cited literature published 10 years prior to the guideline publication. For example, the most recent CPG,¹⁵ which was published in 2024, was supported by evidence from studies published between 2010 and 2019. Gao¹³ mentioned that guideline development should rely on high-quality evidence and guidelines should be promptly updated to incorporate the most recent studies. RCTs and meta-analyses should be conducted to support clinical practice recommendations.

4.5. Strengths and limitations

This study has several strengths. Specifically, we included all Chinese CPGs for acupuncture, performed comprehensive and objective analysis of the content, evaluated the quality of the guidelines using AGREE II, and summarized the acupuncture recommendations. This could inform future development of guidelines for acupuncture treatment of post-stroke stroke after dysphagia with acupuncture in the future.

However, this study has several limitations. Specifically, we did not analyze guidelines published in other countries, which was outside the scope of the present study. Additionally, according to the AGREE II instructions,³² it is recommended at least two, and preferably four appraisers review each guideline to increase the reliability of the assessment. We just appraised by two reviewers this time, and in future updates we will consider to include four researchers to appraise the methodological quality of relevant CPGs. Finally, only some of the CPGs mentioning acupuncture were assessed for cited evidence, there is no other therapeutic evidence background for the interpretation of the results.

5. Conclusion

In conclusion, it is important to carefully consider the members comprising the CPG development team. “Buy in” is required from all stakeholders if there is to be effective implementation. Additionally, CPGs should be backed

up by robust evidence and regularly updated to reflect the most recent international evidence in order to influence clinical practice. Taken together, CPG development in China should be based on an internationally recognized methodology, evidence-based, have relevant stakeholder involvement, and include relevant scientific evidence to underpin recommendations.

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Author Contribution Statement

Lan Yuan: Data curation, formal analysis, methodology, software, and writing – original draft. **Zi-yu Tian:** Conceptualization, methodology, funding acquisition, and writing – review and editing. **Bin Liu:** Methodology and writing – review and editing. **Yu-ying Hong:** Data curation. **Nicola Robinson:** Conceptualization, writing – original draft, supervision, funding acquisition, project administration, and writing – review and editing.

Declaration of Competing Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. Prof. Nicola Robinson is the Editor-in-Chief of *Evidence-Based Chinese Medicine and Technology Assessment*, but she is not involved in the peer review or decision of this article.

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