Review Article

Acupuncture Therapy on Patients with Flaccid Hemiplegia after Stroke: A Systematic Review and Meta-Analysis

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Background. Acupuncture is a commonly used complementary treatment for flaccid hemiplegia caused by stroke, but evidences from previous randomized trials were inconclusive. The purpose of this study was to evaluate the efficacy and safety of acupuncture in a comprehensive synthesis. *Methods*. We searched literature from eight databases from their inception to December 2020. We included randomized controlled trials of acupuncture for the treatment of flaccid hemiplegia following stroke. The meta-analysis was carried out using Review Manager 5.3 and Stata 16.0. The main indicator was the Fugl-Meyer Assessment scale. The modified Barthel Index scale, Quality Of Life Assessment scale, Mini-Mental State Examination scale, Berg Balance Scale, Neurological Deficit Assessment scale, and the treatment effective rate were used to measure the secondary indicators. Adverse events from individual studies were used to determine safety. *Results*. Our search returned 7624 records, of which 27 studies involving a total of 1,293 patients fulfilled our inclusion criteria. To be noted, our results indicated that significant improvements in the scores of the primary indicator showed better clinical scores among the three groups with acupuncture than without acupuncture: acupuncture compared with rehabilitation, 13.53 (95% CI 11.65–14.41, *P* < 0.01); acupuncture plus rehabilitation compared with rehabilitation, 9.84 (95% CI 6.45–13.24, *P* < 0.01, *I*² = 98%); and acupuncture plus Western medicine therapy compared with Western medicine, 16.86 (95% CI 15.89–17.84, *P* < 0.01, *I*² = 38%), and the secondary indicators showed the same tendency. *Conclusion*. Acupuncture was effective and safe in the patients with flaccid hemiplegia after stroke, although there was high heterogeneity between studies.

1. Strengths and Limitations of This Study

- (1) This systematic review offered a thorough assessment of the efficacy and safety of acupuncture treatment for individuals with flaccid hemiplegia following a stroke. Compared with the nonacupuncture group, the scores of the acupuncture group were significantly improved in the following aspects: motor function, ability of daily living, cognitive function, quality of daily life, neurological deficit, and the clinical effective rate, indicating that acupuncture was effective and short-term safe for patients with poststroke flaccid hemiplegia.
- (2) The comprehensiveness and methodological quality of the major studies included in this evaluation have a substantial impact on the results' trustworthiness.

(3) This systematic review's protocol has been registered in PROSPERO, and it has been conducted and reported in complete compliance with PRISMA guidelines. However, selection bias may exist as we only searched the English and Chinese databases.

2. Background

Stroke is regarded as the leading cause of death and disability worldwide. [1] Hemiplegia after stroke is one of the primary functional disorders in patients with stroke. Paresis and spastic phases are common in hemiplegia induced by stroke. Most of the limbs show flaccid hemiplegia in the early stages following a stroke. The upper neuron of the patient loses control of the lower center, and the spinal cord center that has not been physically injured has shock, resulting in flaccid hemiplegia, namely Brunnstrom I~II. The natural healing duration in the flaccid hemiplegia stage is roughly two weeks. Reconstruction of motor function is crucial for the social reintegration of stroke patients. However, the longer the duration of hemiplegia, the worse the prognosis, and the higher the residual physical disability rate [2]. After stroke by three months, there is still considerable room for improvement in all measures: 85% of persons were even impaired on gait speed, 78% had not reached age-specific norms for upper extremity function, 68% even demonstrated delayed physical mobility, 37% required some assistance with necessary activities of daily living, and 29% were even impaired on balance [3]. Accordingly, the primary objective of poststroke therapy is to shorten the duration of flaccid hemiplegia.

At present, the main treatments for poststroke flaccid hemiplegia include exercise rehabilitation training (e.g., continuous passive motion), noninvasive brain stimulation (e.g., transcranial direct current stimulation (tDCS) and transcranial magnetic stimulation (rTMS)), and physical therapy modalities (e.g., neuromuscular electrical stimulation (NMES)). However, there are certain disadvantages to these treatments. In terms of unpleasant symptoms, continuous passive motion is preferable to a therapist-directed range of motion exercise (especially shoulder stability). While the passive range of motion may help with brain healing, its capacity to cause significant motor alterations is debatable [4-6]. The ideal dose and montage, long-term safety in stroke patients, and the impact magnitude of tDCS are all challenging issues in tDCS research for stroke rehabilitation. The US Food and Drug Administration (FDA) licensed repetitive transcranial magnetic stimulation for "drug-resistant depression," [7] but its clinical utility in stroke recovery is yet unknown [8,9]. Electrical stimulation of the peripheral neuromuscular system has not had beneficial outcomes in studies [10]. More importantly, there were inadequate robust data to inform its therapeutic usage for neuromuscular retraining following stroke, according to a Cochrane review published in 2006 [11]. Questions remain unanswered regarding the type, dose, and timing of these peripheral stimulation techniques.

Acupuncture has been practiced clinically in China for more than 3000 years and has been widely used to treat various diseases, especially in stroke rehabilitation treatment [12,13]. Acupuncture is internationally recognized as an essential treatment for multiple conditions associated with stroke. Besides, acupuncture is recommended by the World Health Organization (WHO) as an alternative and complementary strategy for stroke treatment and for improving stroke care [14]. Its advantages in the treatment of stroke have recently been highlighted in research [15-17]. Guo [18] believed that acupuncture was effective in the rehabilitation of stroke, but Zhu [19] found that the addition of acupuncture to a regimen of conventional physical therapy did not result in further improvement in motor function. Taking these inconsistent findings into account, a systematic evaluation is needed to summarize them to reach a consistent conclusion.

Despite the numerous clinical researches on acupuncture, many professionals continue to have reservations regarding its efficacy and safety. Hence, the goal of this systematic review and meta-analysis is to determine the effectiveness and safety of acupuncture treatment for flaccid hemiplegia following stroke.

3. Methods

The protocol of this systematic review was developed and submitted to PROSPERO, and the registration number is CRD42020180411.

3.1. Data Sources and Search Strategy. A systematic search was conducted in the following databases: China Biology Medicine (CBM), China National Knowledge Infrastructure (CNKI), Wan Fang Data, the Chinese Science and Technology Periodical Database (VIP), PubMed, EMBASE, the Cochrane Library, and Web of Science from the inception to December 2020. All searches were performed by a biomedical information specialist of the medical library, with an exhaustive set of search terms related to "acupuncture," "stroke," "randomized controlled trial," and "flaccid hemiplegia."

3.2. Inclusion and Exclusion Criteria. Studies were included if they fulfilled the following criteria: (1) randomized controlled trials (RCTs); (2) patients were diagnosed with flaccid paralysis after stroke, regardless of the type of stroke (hemorrhagic stroke or ischemic stroke), the diseased brain area, the affected limb, gender, age, ethnicity, and nationality; and (3) acupuncture used as an intervention (such as electroacupuncture, needle warming therapy, scalp acupuncture, hand-foot acupuncture, tongue acupuncture, auricular acupuncture, and nerve trunk stimulation therapy), regardless of the number and duration of the treatment. Studies were excluded if they did not conform to the study type (opinions, case reports, case series, conference papers, editorials, abstracts, and crossover studies) and had inadequate information.

3.3. Outcome Assessment. The primary outcome measure was assessed by the Fugl-Meyer Assessment (FMA) scale, which was usually used to assess motor function. The secondary outcomes included modified Barthel Index (MBI) scale, Quality of Life (QOL) Assessment scale, Mini-Mental State Examination (MMSE) scale, Berg Balance Scale (BBS), Neurological Deficit (ND) Assessment scale, or other scale data related to flaccid hemiplegia. Safety was evaluated by any recorded adverse events reported by individual study.

3.4. Data Extraction and Collection of Adverse Events. Two independent reviewers (YT and JW) independently screened the literatures according to the predefined inclusion criteria based on the title and abstract. The two examiners then separately reviewed the full text based on the retrieved results. The included studies were cross-checked by Evidence-Based Complementary and Alternative Medicine

two reviewers. Disagreements were resolved through discussion or consensus with third reviewers (WP). The research selection process is shown in the PRISMA flow chart in Figure 1.

3.5. Quality Assessment. The two authors conducted an independent assessment of the risk of bias using the Cochrane risk-of-bias tool to assess the methodological quality of the included studies. There were seven items in total, and each item was determined to be one of the following: "low risk of bias," "unclear risk of bias," and "high risk of bias." If all seven items were assessed as having a low risk of bias, the study was rated as high quality. If one or more items were assessed as having a high or unclear risk of bias, the study was rated as low quality (see Figures 2 and 3).

3.6. Data Analysis. All statistical analyses were performed using Review Manager 5.3 and Stata 16.0. The confidence interval for all data was 95% (95% CI). Continuous outcomes were evaluated using mean difference (MD) or STD mean difference (SMD), while the dichotomous outcomes were evaluated by risk ratio (RR) or odds ratio (OR). Statistical heterogeneity was assessed by I^2 statistics and chi-square test P value. If the chi-square test P value was greater than 0.05 or the I^2 statistic was less than 50%, the combination of RR or OR for each study using the fixed-effects model was applied to the dichotomous data, and the combination of MD or SMD for each study using the fixed-effects model was used for continuous data. Otherwise, a random-effects model was used to assess the effects of the intervention more conservatively. Sensitivity analysis and subgroup analysis were employed to further explore the source of heterogeneity. Egger's test was used to assess publication bias.

4. Results

4.1. Study Characteristics. A total of 7624 records were obtained from the nine databases. After removing the duplicates, 2962 articles were left. A total of 2848 articles were then excluded because they did not meet the inclusion criteria. As a result, 27 randomized controlled trials [20–46] were included in the qualitative analysis (see Figure 1). Study characteristics of the included literatures are summarized and listed in Table 1.

4.2. Description of Participants. The review and meta-analysis included 27 studies involved 1,293 patients, of which 648 were in the trial group (381 men and 267 women) and 635 were in the control group (372 men and 263 women). All studies were conducted and published between 1999 and 2019. Regarding the sample size, the trials included a maximum of 146 people and a minimum of 40 people.

4.3. Description of Interventions. For intervention, one study adopted acupuncture, sixteen studies adopted acupuncture combined with rehabilitation, four studies adopted electroacupuncture combined with rehabilitation, one study adopted scalp acupuncture combined with rehabilitation, one study adopted electroacupuncture, one study adopted electroacupuncture combined with Western medicine, and three studies adopted acupuncture combined with Western medicine. The detailed intervention characteristics of the included literatures are summarized and listed in Table 1.

4.4. Description of Outcomes. In all the involved studies, seventeen studies used FMA scale to assess limb function, and eighteen studies used MBI scale to assess daily living ability. Eight studies use ND scale to assess neurological deficit. One study used MAS scale to assess spasticity. To evaluate the quality of daily life, three studies adopted the QOL scale, while two studies adopted BBS to value the balance function.

4.5. The Efficiency of Acupuncture Therapy

4.5.1. Acupuncture Compared with No Treatment. One study [43] including 40 patients adopted MBI scale as the main outcome index in Figure 4. After combining and analyzing the data, the results showed that acupuncture improved the daily living ability (MD 10.00, 95% CI 4.64–15.36, P < 0.01).

4.5.2. Acupuncture Compared with Rehabilitation. One study [33] containing 68 cases compared efficacy of acupuncture with rehabilitation in Figure 5. The MD value of FMA, MBI, MMSE, and QOL was 13.53 (95% CI 11.65–14.41, P < 0.01); 32.21 (95% CI 30.67–33.75, P < 0.01); 3.71 (95% CI 2.73–4.69, P < 0.01); and 29.42 (95% CI 23.85–34.99, P < 0.01), respectively.

4.5.3. Acupuncture plus Rehabilitation Compared with Rehabilitation. Twenty-one studies [22,28,30,32,34,39,41, 42,44–46] reported acupuncture plus rehabilitation compared with rehabilitation, including 1845 cases.

(1) FMA and Subgroup Analysis of Interventions for FMA. Eleven studies [22,23,26,27,31,36,38,39,44–46] used FMA scale as an outcome indicator in Figure 6, with MD value of 9.84 (95% CI 6.45–13.24, P < 0.01, $I^2 = 98\%$).

Subgroup analysis showed that the rehabilitation combined with acupuncture regardless of its subtypes ameliorated more than the rehabilitation treatment alone in the scores on the motor function of the limbs assessed by FMA scale. After combining effect size, the MD value was 9.17 (95% CI 5.84–12.5, P < 0.01, $I^2 = 98\%$). Eight studies [22,23,27,31,38,39,45,46] compared acupuncture plus rehabilitation with rehabilitation, and the MD value was 10.64 (95% CI 5.51–15.76, P < 0.01, $I^2 = 98\%$); two studies [26,44] were electroacupuncture plus rehabilitation therapy compared with rehabilitation, and the MD value was 7.4 (95% CI: 0.56-14.25, P = 0.03, $I^2 = 97\%$); and one study [23] was scalp acupuncture combined with rehabilitation therapy compared with rehabilitation therapy, and the MD value was 3.83 (95% CI 1.62–6.04, P < 0.01).



FIGURE 1: Flow chart of trial selection process.



FIGURE 2: Risk of bias in the involved studies, assessed by using the Cochrane Collaboration's risk-of-bias tool: high risk of bias (+); unclear risk of bias (?); and low risk of bias (-).

After subgroup analyzing and combining data, substantial heterogeneity was observed ($I^2 = 67.6\%$, P = 0.05). Through sensitivity analysis, no obvious source of heterogeneity was found. After meta-regression analysis, it was found that the sample size was a source of heterogeneity. Egger's test indicated that there was no obvious publication bias (P = 0.058) in Figure 7.

(2) MBI and Subgroup Analysis of Interventions for MBI. Twelve studies [22,24,28,30,32,35,36,38,39,41,44,45] used MBI as the outcome indicator, involving a total of 1085 cases in Figure 8. The MD value was 11.35 (95% CI 8.12–14.57, P < 0.01, $I^2 = 96\%$).

Subgroup analysis showed that the acupuncture combined rehabilitation group and the electroacupuncture combined rehabilitation treatment group were superior to the simple rehabilitation treatment group in improving the scores of the ability of daily living. Eleven studies [22,24,28,30,32,35,36,38,39,41,45] were acupuncture



FIGURE 3: Graph of the risk of bias: percentage of all studies included.

combined with rehabilitation treatment group compared with rehabilitation treatment group, and the MD value was 10.82 (95% CI 7.76–13.88, P < 0.01, $I^2 = 94\%$). One study [44] adopted electroacupuncture combined with rehabilitation therapy compared with rehabilitation treatment group, and the MD value was 16.26 (95% CI 15.07–17.45, P < 0.01, $I^2 = 90.5\%$). After sensitivity analysis, two studies [24,44] were the main sources of heterogeneity. The heterogeneity was slightly reduced after the removal of those studies ($I^2 = 84\%$, P < 0.01). Meta-regression analysis of publication year, sample size, and intervention methods were not associated with heterogeneity. Egger's test indicated that there was no obvious publication bias (P = 0.964) in Figure 9.

(3) The Effective Rate. Four studies [25,35,41,45] adopted the effective rate as the outcome indicator in Figure 10, including a total of 317 cases. The OR value was 11.07 (95% CI 5.78–21.21, P < 0.01, $I^2 = 0\%$). It indicated that the effective rate of acupuncture combined with rehabilitation group was higher than that of the simple rehabilitation group.

(4) ND. Four studies [28,35,39,41] adopted ND as the outcome indicator in Figure 11, and a total of 356 cases were included. After combining the effect size, the results showed that the MD value was -0.18 (95% CI -4.45 to 4.09, P = 0.93, $I^2 = 95\%$).

After sensitivity analysis, one study [28] was the source of heterogeneity. After elimination, the combined effect size

				TABLE	1: Characte	ristics and	details of	interventio	ns of included studies.				
	-	Ag	je je	Duratior	ı (day)	Criteria fo	r grading	Criteria for	Intervention		Frequency		
Study	size	Experimental	Control	Experimental	Control	Chinese medicine	Western medicine	gradıng flaccid hemiplegia	Experimental	Control	and retention time	Length of treatment	Outcomes
Chen 2010 [20]	72	54.4	55.4	Not described	Not described	Not described	Not described	Not described	Electroacupuncture + Western medicine	Western medicine	Once/day, not described	28 d	ND, FMA, MBI
Songyang 2015 [37]	120	65	64	4.5	4.7	Not described	Not described	Not described	Acupuncture + rehabilitation	Rehabilitation	5 times/ week, 30 min	30 d	MBI
Chu et al. 2017 [21]	120	71 ± 8	69±8	8.2 ± 3.7	9.2 ± 3.3	Not described	н	Not described	Acupuncture + Western medicine	Western medicine	6 times/ week, 30 min	2 W	FMA, ND, MBI
Ping and Chen 2009 [34]	78	60.5 ± 15.4	63.4 ± 14.9	Not described	Not described	Not described	U	Not described	Electroacupuncture + rehabilitation	Rehabilitation	Not described, 30 min	30 d	MAS
Ge 2005 [24]	124	62.15 ± 8.53	65.76 ± 9.19	Not described	Not described	Not described	C	Not described	Acupuncture + rehabilitation	Rehabilitation	5 times/ week, 30 min	4 W	FMA, QOL
Yan 2013 [44]	120	63.07 ± 5.12	62.05 ± 6.25	16.65 ± 2.25	13.25 ± 5.25	Not described	D	Not described	Electroacupuncture + rehabilitation	Rehabilitation	Once/day, 30 min	$4 \mathrm{W}$	FMA, MBI, BBS
Ge Yun and Zhu 2006 [25]	60	62.4	68.8	3.8	4.6	В	U	Not described	Acupuncture + rehabilitation	Rehabilitation	5 times/ week, 30–45 min	8 W	ND
Chengyu 2012 [27]	126	60 ± 6.9	59±7.6	9 ± 1.8	9 ± 2.1	I	Not described	Not described	Acupuncture + rehabilitation	Rehabilitation	Once/day, 30 min	6 M	FMA
Jiyong 2018 [29]	116	69 ± 6	67 ± 7	7.3 ± 3.5	7.1 ± 3.3	I	Ì	Not described	Acupuncture + Western medicine	Western medicine	6 times/ week, 30 min	14 d	FMA, ND
Peng et al. 2019 [33]	68	62 ± 10	62±8	31 ± 8.4	29.7 ± 9.2	В	D	K	Acupuncture	Rehabilitation	6 times/ week, 6h	$4 \mathrm{W}$	FMA, MBI, MMSE,
Yuming and Xi 2019 [28]	40	Not described	Not described	Not described	Not described	Not described	Ċ	Not described	Acupuncture + rehabilitation	Rehabilitation	Once/day, 20 min	$4 \mathrm{W}$	ND, MBI, BBS
Yinhua 2015 [46]	64	67.38 ± 7.16	67.21 ±	Not described	Not described	Υ	Е	Not described	Acupuncture + rehabilitation	Rehabilitation	Not described, 30 min	Not described	FMA
Kejun 2013 [30]	70	64.7 ± 8.6	64.5 ± 8.3	4.5 ± 2.2	4.7 ± 2.1	Ι	Not described	Not described	Acupuncture + rehabilitation	Rehabilitation	Once/day, 30 min	30 d	MBI
Liu et al. 2005 [31]	62	61.46 ± 9.23	60.89 ± 10	5.727 ± 2.1	5.697 ± 2.3	Not described	C	Not described	Acupuncture + rehabilitation	Rehabilitation	Not described, 15 min	30 d	FMA
Mingxiang and Luo 2018 [32]	98	54.2 ± 2.3	54.2±	3.2 ± 1.3	3.1 ± 1.2	Not described	U	Not described	Acupuncture + rehabilitation	Rehabilitation	6 times/ week, 30 min	2 M	MBI
Yaqing 2019 [45]	87	57.92 ± 4.83	58.25 ± 4.66	3.68 ± 0.72	3.51 ± 0.63	В	D	Not described	Acupuncture + rehabilitation	Rehabilitation	Once/day, 25–30 min	$4 \mathrm{W}$	FMA, MBI
Fanglun 2015 [23]	60	64.47	65.23	29.77	30.63	Not described	Not described	G	Head acupuncture + rehabilitation	Rehabilitation	Once-twice/ day	3 W	FMA
Shen 2012 [36]	100	59.2 ± 10.6	58.9 ± 8.1	Not described	Not described	Not described	C	Not described	Acupuncture + rehabilitation	Rehabilitation	Once/day, 30 min	3 W	FMA, MBI

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TABLE	

		A	ge	Duratio.	n (day)	Criteria fc	or grading	Criteria for	Intervention		Frequency		
Study	Sample size	Experimental	Control	Experimental	Control	Chinese medicine	Western medicine	grading flaccid hemiplegia	Experimental	Control	and retention time	Length of treatment	Outcomes
Wang and Rehabilitation 2019 [38]	80	59.53 ± 13.52	58.50 ± 13.51	Not described	Not described	Not described	Not described	Not described	Acupuncture + rehabilitation	Rehabilitation	Not described, 30 min	3 M	FMA, MBI
Wang and Jiang 2006 [39]	146	55.7 ± 7.5	54.3 ± 7.2	Not described	Not described	В	D	Not described	Acupuncture + rehabilitation	Rehabilitation	6 times/ week, 45 min	1 M	FMA, ND, MBI
Wang et al. 2017 [40]	130	60.5 ± 12.6	61.7 ± 10.9	3.3 ± 1.8	3.1 ± 1.5	Not described	C	K	Acupuncture + Western medicine	Western medicine	Once/day, 30 min	1 M	ND, MBI, FMA, QOL
Wong et al. 1999 [42]	118	60.4 ± 11.1	60.6 ± 10.8	Not described	Not described	Not described	Not described	Not described	Electroacupuncture + rehabilitation	Rehabilitation	5 times/ week, 30 min	2 W	MBI
Xing Debing and Wang 2015 [43]	50	63.52 ± 13.23	61.48 ± 11.79	2.875 ± 2.501	2.798 ± 2.457	В	Щ	Not described	Electroacupuncture	Blank placebo	5–6 times/ week, 30 min	2 W	MBI
Wei et al. 2012 [41]	06	64.22 ± 7.37	63.82 ± 7.54	11.22 ± 2.6	12.96 ± 15.92	Not described	U	Not described	Acupuncture + rehabilitation	Rehabilitation	6 times/ week, 30 min	$4 \mathrm{W}$	ND, MBI
Zhang et al. 2010 [35]	80	65.9 ± 11.1	69.2 ± 9.7	2.7 ± 1.47	3.4 ± 2.34	Not described	C	Not described	Acupuncture + rehabilitation	Rehabilitation	Once/day, 20 min	3 W	ND, MBI, MMSE
Haiyun 2009 [26]	72	63.7 ± 10.5	64.5 ± 10.6	7.0 ± 2.1	6.5 ± 2.4	Not described	C	Not described	Electroacupuncture + rehabilitation	Rehabilitation	Once/day, 30 min	$4 \mathrm{W}$	FMA
Erjian 2018 [22]	50	74.2 ± 4.7	73.2 ± 3.9	Not described	Not described	Not described	Not described	Not described	Acupuncture + rehabilitation	Rehabilitation	Twice/day, 30 min	Not described	FMA, MBI
D: day, W: week, l ND: Neurological formulated by the medicine, G: Strol Cerebrovascular I	M: moni Deficit : Nation ce Classi Diseases	th, FMA: Fugl- Assessment sca nal Cerebrovasc ification Diagnc in China, K: B	Meyer Assessmule, A: criteria 1 ule, A: criteria 1 ular Disease C sis and Treatm strunnstrom rat	ient scale, MBI: or diagnosis ar onference, D: on ient Guidelines ted in I-II.	: modified Bar nd curative eff. liagnostic poi of China in 20	thel Index su ect of diseas nts of variou 115, 1: Guidi	ale, MMSE: es in traditid as cerebrova ng Principle	Mini-Mental onal Chinese ascular disease s for Clinical 1	State Examination scale, QOL: Qua medicine, B: criteria for diagnosis a es, E: Guidelines for Diagnosis and Research of New Chinese Medicines	lity Of Life Asses ınd efficacy evalu Treatment of Ac s (Trial), J: Guidel	sment scale, ation of strol ute Stroke in ines for Prev	BBS: Berg B. ke, C: diagno 1 China, F: 1 ention and 7	alance Scale, ostic criteria neurological freatment of

Ez Study or Subgroup Mean	sperimei SD	ntal Total	Mean	Control SD	Total	Weight (%)	Mean Differe IV, Fixed, 95%	nce 6 CI		Mear IV, Fi	n Dif xed,	ferer 95%	ce CI		
Xing debing 2015 45.8 <i>Total (95% CI)</i> Heterogeneity: Not appli Test for overall effect: Z =	12.557 cable = 3.66 (P	50 50 = 0.000	35.8 03)	14.697	50 50	100.0 100.0	10.00 [4.64, 15 10.00 [4.64, 15 -	5.36] 5.36] Fav	-20 vours	-10 [control	0	Fav	10 ours [- 20 experime	ental]



Study or Subgroup	Expe Mean	erime SD	ental Total	(Mean	Contr SD	ol Total	Weight (%)	Mean IV, Rand	Difference dom, 95% C	CI	Mean IV, Ranc	Differe lom, 9	ence 5% CI		
Hu peng 2019	58.77	5.35	68	45.24	5.82	68	100.0	13.53 [1	11.65, 15.41]			- 1	ŀ	
<i>Total (95% CI)</i> Heterogeneity: Not	applica	ble	68			68	100.0	13.53 [1	11.65, 15.41]			•	•	
Test for overall effe	ct: $Z = 1$	14.11	(P < 0)	.00001)					-20	-10	0	10	20	
										Favours	[control]	Fa	vours [e	xperimental]
Study or Subgroup	Expe Mean	erime SD	ental Total	(Mean	Contr SD	ol Total	Weight (%)	Mean I IV, Rand	Difference lom, 95% C	I	Mean IV, Rand	Differe lom, 9	ence 5% CI		
Hu peng 2019	54.33	4.82	68	22.12	4.35	68	100.0	32.21 [3	30.67, 33.75	5]					
Total (95% CI)			68			68	100.0	32.21 [3	30.67, 33.75	5]			•		
Test for overall effe	: applica ct: <i>Z</i> = 4	ble 40.91	(<i>P</i> < 0	.00001)								10		
										-50	-25	0	10	50	1
										Favours	[control]	Fa	vours [e	xperimental]
Study or Subgroup	Expe Mean	erime SD	ental Total	(Mean	Contr SD	ol Total	Weight (%)	Mean I IV, Rand	Difference lom, 95% C	CI	Mean IV, Ranc	Differe lom, 9	ence 5% CI		
Study or Subgroup Hu peng 2019	Expe Mean	erime SD 3.08	ental Total 68	(Mean 18.63	Contr SD 2.72	ol Total 68	Weight (%) 100.0	Mean I IV, Rand 3.71 [2	Difference lom, 95% C [2.73, 4.69]	CI	Mean IV, Rand	Differe	ence 5% CI		
Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not	Expe Mean 22.34	erime SD 3.08 ble	ental Total 68 68	(Mean 18.63	Contr SD 2.72	ol Total 68 68	Weight (%) 100.0 <i>100.0</i>	Mean I IV, Rand 3.71 [: 3.71 [.	Difference lom, 95% C 2.73, 4.69] [2.73, 4.69]	I	Mean IV, Rand	Differe	ence 5% CI		
Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not Test for overall effec	Expension Expen	erime SD 3.08 ble 7.45 (1	ental Total 68 68 P < 0.0	(Mean 18.63	Contr SD 2.72	ol Total 68 68	Weight (%) 100.0 <i>100.0</i>	Mean I IV, Rand 3.71 [: 3.71 [.	Difference lom, 95% C 2.73, 4.69] [2.73, 4.69]	-10	Mean IV, Rand	Differe lom, 9	ence 5% CI	10	
Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not Test for overall effec	Expe Mean 22.34 : applical ct: <i>Z</i> = 7	erime SD 3.08 ble 2.45 (<i>I</i>	ental Total 68 68 P < 0.0	(Mean 18.63	2.72	ol Total 68 68	Weight (%) 100.0 <i>100.0</i>	Mean I IV, Rand 3.71 [<i>:</i> <i>3.71 [.</i>	Difference lom, 95% C [2.73, 4.69] [2.73, 4.69]	EI -10 Favours	Mean IV, Rand -5 [control]	Differe lom, 9:	ence 5% CI	 10 xperimental]]
Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not Test for overall effect Study or Subgroup	Expe Mean 22.34 applical ct: $Z = 7$ Exj Mean	erime SD 3.08 ble 2.45 (1 perim	ental Total 68 68 P < 0.0 nental	(Mean 18.63 00001)	Contr SD 2.72	ol Total 68 68 Control	Weight (%) 100.0 <i>100.0</i> Watal	Mean I IV, Rand 3.71 [: 3.71 [. 'eight N (%) IV,	Difference lom, 95% C 2.73, 4.69] [2.73, 4.6	-10 Favours rence 95% CI	Mean IV, Ranc -5 [control] Mean IV, Ranc	Differe lom, 9 0 Fa Differe lom, 9	ence 5% CI • 5 vours [e ence 5% CI	10 xperimental]]
Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not Test for overall effect Study or Subgroup Hu peng 2019	Expension Expension Explication Explication Explication Explication Explication Explicit Exp	erime SD 3.08 ble .45 (1 SD 17.6	ental Total 68 68 P < 0.0 nental 0 Tot	(Mean 18.63 00001) cal Ma 3 189	2.72 2.72	ol Total 68 68 Control SD	Weight (%) 100.0 <i>100.0</i> Water of the second	Mean I IV, Rand 3.71 [: 3.71 [. Veight M (%) IV, 00.0 29	Difference lom, 95% C 2.73, 4.69] [2.73, 4.69] [2.74, 4.69] [2.74, 4.69] [2.74, 4.69] [2.74, 4.69] [2.74, 4.69] [2.74, 4.69] [2.74, 4.69] [2.75, 4.6	-10 Favours pence p5% CI 34.99]	Mean IV, Rand -5 [control] IV, Rand	Differe lom, 9 0 Fa Differe lom, 9	ence 5% CI • 5 vours [e ence 5% CI	10 xperimental]]
Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not Test for overall effect Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not	Expension Expension Explication Explication Explication Explorement $Z = 7$ Explorement E	sD 3.08 ble 4.45 (1 perim SD 17.6 ble	ental Total 68 68 P < 0.0 mental 7 68 60	(Mean 18.63 00001) (al Ma 3 189 3	Contr SD 2.72 C Cean	ol Total 68 68 Control SD	Weight (%) 100.0 100.0 W Total 68 1 68 1	Mean I IV, Rand 3.71 [: 3.71 [. Veight N (%) IV, 00.0 29 00.0 29	Difference lom, 95% C 2.73, 4.69] [2.73, 4.69] [2.74, 4.69] [2.75, 4.6	-10 Favours rence 95% CI 34.99] 34.99]	Mean IV, Rand -5 [control] Mean IV, Rand	Differe lom, 9: 0 Fa Differe lom, 9:	ence 5% CI • 5 vours [e ence 5% CI	10 xperimental]]
Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not Test for overall effect Study or Subgroup Hu peng 2019 <i>Total (95% CI)</i> Heterogeneity: Not Test for overall effect	Expension Expension Expension Explication Explication Expension E	sD 3.08 3.08 ble .45 (<i>i</i> .45 (<i>i</i>) .7.6 ble .0.34	ental Total 68 68 P < 0.0 mental Tot 7 61 61 61 61 61 61 61 61	(Mean 18.63 00001) 	Contr SD 2.72 C cean 9.13	ol Total 68 68 Control SD 15.42	Weight (%) 100.0 100.0 W Total 68 1 68 1	Mean I IV, Rand 3.71 [: 3.71 [. Veight M (%) IV, 00.0 29 00.0 29	Difference lom, 95% C 2.73, 4.69] 2.73, 4.69] (2.73, 4.69	-10 Favours rence 95% CI 34.99] 34.99]	Mean IV, Ranc -5 [control] Mean IV, Ranc	0 Fa Differe 0 Differe loom, 9:	ence 5% CI • 5 vours [e ence 5% CI • 25	10 xperimental)]

FIGURE 5: Forest plot (acupuncture compared with rehabilitation).

showed that acupuncture combined with rehabilitation therapy was superior to the rehabilitation therapy group in terms of improving the scores on neurological function, and the MD value was -3.52 (95% CI -6.32 to -0.72, P = 0.01, $I^2 = 88\%$).

4.5.4. Acupuncture plus Western Medicine Therapy Compared with Western Medicine Therapy. Four studies [20,21,29,40] reported acupuncture plus Western medicine therapy compared with Western medicine therapy, involving a total of 438 cases. In terms of different intervention groups

Study or Subgroup Mean SD Total Wash SD Total (%) IV, Random, 95% CI IV, Random, 95% CI Experimental 26.56 1.58 1.58 1.20 9.7 3.39 [13.7, 4.61] + Liv inclus 2015 24.77 3.12 64 26.56 2.50 62.39, 27.19] + Liv weiping 2005 3.49 1.11 62 2.96 1.04 62 7.45 51.18, 8.72] Mo yading 2015 23.6 1.87 6.924 60 9.3 3.33 [1.62, 6.04] + Shen Ing 10.210 3.61 24.7 100 2.36 1.88, 8.71 + + + + Wang churwang 2019 85.6 4.72 80 7.81 5.83, 9.77 +		Ex	perimen	ıtal		Control		Weight	Mean Difference	Mean D	Difference	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Study or Subgroup	Mean	SD	Total	Mean	SD	Total	(%)	IV, Random, 95% C	I IV, Rando	om, 95% CI	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $												
He chengry 2012 64.42 8.27 126 39.36 8.93 126 9.3 25.06 [22.93, 27.19] Lu weiping 2005 34.91 11 62 29.96 10.4 62 8.7 4.95 [1.18, 8.72] Mo yaqing 2019 59.41 8.75 87 51.39 8.16 87 9.2 8.02 [5.51, 10.53] Shen fanglun 2015 22.53 6.321 60 18.7 6.0524 60 9.3 3.38 [1.62, 6.04] Wang Icher 2006 7.21 17.41 146 50.06 19.13 146 8.4 21.50 [1.73, 0.57.0] Lu weiping 2006 7.21 17.41 146 50.6 19.13 146 8.4 21.50 [1.73, 0.57.0] Lu weiping 2018 89.1 4.52 50 81.3 5.48 50 9.4 7.80 [5.83, 9.77] Total (95% CI) 967 967 100.0% 9.84 [6.45, 13.24] Heterogeneity: Tar ² = 30.91; Chi ² = 449.54, df = 10 (P < 0.00001); P ² = 98% Test for overall effect: Z = 5.68 (P < 0.007) He chengry 2012 64.42 8.27 126 39.36 8.93 126 9.9 25.06 [22.93, 27.19] Li weiping 2005 34.91 16 22 99.56 10.4 6 19.13 146 87 9.7 80.2 [5.51, 10.53] Shen fanglun 2015 84.1 8.75 87 51.39 8.16 87 9.7 80.2 [5.51, 10.53] Wang Icher 2005 34.91 16 22 99.56 10.4 6 2 9.1 4.95 [1.18, 8.72] Ho chengry 2012 64.42 8.27 126 39.36 8.83 126 9.9 25.06 [22.93, 27.19] Li weiping 2005 34.91 16 22 99.56 10.4 6 2 9.1 4.95 [1.18, 8.72] Mo yaqing 2019 36.1 24.77 100 2.36 18.1 100 7.7 12.50 [6.50, 18.50] Wang Icher 2005 34.91 16 22 99.56 10.4 6 19.13 14.1 3 80 10.1 7.11 [5.74, 8.48] Wang Icher 2006 7.2.1 17.4 11 15.06 18.1 100 7.7 12.50 [6.50, 18.50] Wang Icher 2006 7.2.1 17.4 11 15.06 19.13 11.3 22 11.50 [6.50, 18.50] Wang Icher 2006 7.2.1 17.4 11 15.06 19.13 11.3 22 11.50 [6.50, 18.50] Heterogeneity: Tar ² = 48.68; Chi ² = 37.12, df = 7 (P < 0.00001); F = 98% Test for overall effect: Z = 40.7 (P < 0.00001); F = 98% Test for overall effect: Z = 40.7 (P < 0.00001); F = 98% Test for overall effect: Z = 2.12 (P = 0.03) H 6.51 5.8 120 10.3 3.99 [3.37, 4.61] Lu weiping 2015 36.1 24.7 100 2.55 8.0 7.0 10.64[5.51, 15.76] Heterogeneity: Tar ² = 48.68; Chi ² = 37.12, df = 1 (P < 0.00001); F = 98% Test for overall effect: Z = 2.39 (P = 0.0007) Test for overall effect: Z = 2.39 (P = 0.0007) Test for overall effect: Z = 3.39 (P = 0.0007) Te	Fu yan 2013	22.55	3.1	120	18.56	1.58	120	9.7	3.99 [3.37, 4.61]		-	
Li yinghu 2015 24,75 3.12 64 20.54 2.92 64 9.6 4.21 [3.16,5.26] + + + + + + + + + + + + + + + + + + +	He chengyu 2012	64.42	8.27	126	39.36	8.93	126	9.3	25.06 [22.93, 27.19]			
Lu verjing 2005 34,91 11 62 29.96 10.4 62 8.7 4.95 [1,18, 8.72] who raping 2019 554,1 8.75 87 513 8,16 87 9.2 8.02 [55,11,05,31 Shen fanglun 2015 22.53 6,3231 60 18.7 6.0524 60 9.3 3.33 [1,62, 604] ************************************	Li yinghua 2015	24.75	3.12	64	20.54	2.92	64	9.6	4.21 [3.16, 5.26]		+	
$ \begin{aligned} & \text{Mo} \text{ yaqing 2019} & \text{S} 441 & \text{R} 75 & \text{R}^{2} & \text{S} 1.39 & \text{S} 16 & \text{R}^{7} & \text{9} 2. & \text{8}.02 [5.51, 10.53] \\ & \text{Mo} \text{ yang hurwang 2019} & \text{S} 5.2 & \text{A} 1.3 & \text{MO} & \text{9} 4. & \text{A} 12.50 [5.6, 0.18, 50] \\ & \text{Wang hurwang 2019} & \text{S} 5.2 & \text{A} 1.2 & \text{MO} & \text{9} 4. & \text{A} 12.50 [5.6, 0.18, 50] \\ & \text{Wang hurwang 2019} & \text{S} 5.2 & \text{A} 1.3 & \text{MO} & \text{9} 4. & \text{2} 1.50 [7.30, 25.70] \\ & \text{Zho thaiyn 2009} & \text{2} 2.1 & \text{G} 5.7 & \text{2} 2.0 2.0 & \text{G} 7. & \text{2} 9.3 & \text{10.98} & \text{88}.2, 1.3.14 \\ & \text{Tetrogeneity: Tar^2 = 30.9; \ \ (Lh^2 = 449.54, df^2 = 10 \left(P < 0.00001\right); t^2 = 98\% \\ & \text{Tets for overall effect } Z = 5.68 \left(P < 0.00001\right) \\ & \text{Herrogeneity: Tar^2 = 30.9; \ (Lh^2 = 449.54, df^2 = 10 \left(P < 0.00001\right); t^2 = 98\% \\ & \text{Tets for overall effect } Z = 5.68 \left(P < 0.00001\right) \\ & \text{Hear Difference} \\ & \text{Mean Difference} \\ & \text{Hear Dyneity 12} \\ & \text{Otal} & \text{SD} & \text{Total} & \text{Mean} & \text{SD} & \text{Total} & \text{Mean} \\ & \text{SD} & \text{Total} & \text{Mean} & \text{SD} & \text{Total} & \text{Mean} & \text{SD} \\ & \text{Total} & \text{Mean} & \text{SD} & \text{Mean} & \text{SD} & \text{Total} & \text{Mean} & \text{Mean} $	Liu weiping 2005	34.91	11	62	29.96	10.4	62	8.7	4.95 [1.18, 8.72]		-	
Shen inaplun 2015 22.53 6.3231 60 18.7 6.0524 60 9.3 3.83 [1.62, 6.04] Wang churwang 2019 85.62 4.72 80 78.51 4.13 80 9.6 7.11 [5.74, 84.8] Wang lefen 2006 7.21 17.44 146 50.61 91.31 44 6.8 4 21.50 [17.30, 25.70] Total (95% C1) 96.7 72 20.21 6.7 72 9.3 10.98 [8.82, 13.14] Laberijan 2018 89.1 4.52 50 81.3 5.48 50 9.4 7.805 [5.83, 9.77] Total (95% C1) 96.7 96.7 100.0% 9.84 [6.45, 13.24] Tevours [control] Favours [experimental] Experimental Study or Subgroup Mean SD Total Mean SD Total (%) Total (%) Weight Mean Difference Study or Subgroup Mean SD Total Mean SD Total (%) Total (%) Weight Mean Difference Study or Subgroup Mean SD Total Mean SD Total (%) Total (%) Weight Mean Difference Mean Difference Study or Subgroup Mean SD Total Mean SD Total (%) Total (Mo yaqing 2019	59.41	8.75	87	51.39	8.16	87	9.2	8.02 [5.51, 10.53]			
Shen jan 2012 36.1 24.7 100 23.6 18.1 100 7.4 12.50 [5.5, 18.50] Wang therm 2005 32.9 6.55 72 20.21 6.7 72 9.3 10.98 [8.8, 13.14] Zhu erjian 2018 89.1 4.52 50 81.3 54.8 50 9.4 7.80 [8.8, 13.14] Heterogeneity: Tar ² = 30.91; Ch ² = 449.54, d ² = 10 ($P < 0.00001$); $l2 = 98\%$ Test for overall effect: $Z = 5.68$ ($P < 0.00001$) Experimental Experimental Experimental Experimental Control Weight Mean Difference Mean Difference Study or Subgroup Mean SD Total Mean SD Total (%) IV, Random, 95% C1 IV, Random, 95% C1 2.1.1 Acuproneture+Rehabilitation VS Rehabilitation He chengru 2012 64.42 8.27 126 39.36 8.93 126 9.9 25.06 [22.93, 27.19] Li weiging 2005 34.91 16 62 29.94 61.06 7.9 12.05 [5.83, 9.77] Wang idem 2015 36.1 24.7 100 2.36 18.1 100 7.7 12.50 [5.05, 18.50] Wang idem 2015 34.1 24.7 100 2.36 18.1 100 7.7 12.50 [5.05, 18.50] Wang idem 2015 34.1 24.7 100 2.36 18.1 100 7.7 12.50 [5.05, 18.50] Wang idem 2015 34.1 24.7 100 2.36 18.1 100 7.7 12.50 [5.05, 18.50] Wang idem 2016 7.2.1 7.44 11 50.6 19.13 11 3.2 22.150 [5.05, 18.50] Wang idem 2018 89.1 4.52 50 81.3 54.8 50 9.9 7.80 [5.83, 9.77] Subtatal (95% C1) 580 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.65. Ch ² = 307.12, d ² = 7 ($P < 0.00001$]; $l2 = 97\%$ Test for overall effect: $Z = 4.07 (P < 0.00001$]; $l2 = 97\%$ Test for overall effect: $Z = 2.12 (P = 0.03)$ 21.3 HeatAcupunture+Rehabilitation Shen finglun 2015 22.25 3.1 10 (1.8.7 0.524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: tau ² = 23.577; chi ² = 37.01, df = 1 ($P < 0.00001$]; $l2 = 97\%$ Test for overall effect: $Z = 2.12 (P = 0.03)$ 21.3 HeatAcupunture+Rehabilitation Shen finglun 2015 22.35 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: tau ² = 2.3.9 (P = 0.0007) Total (95% C1) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 2.3.9 (P = 0.0007) Total (95% C1) 832 832 100.0 9.17 [5.84, 12.50] Favours [control] Favours [experimental]	Shen fanglun 2015	22.53	6.3231	60	18.7	6.0524	60	9.3	3.83 [1.62, 6.04]			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Shen jian 2012	36.1	24.7	100	23.6	18.1	100	7.4	12.50 [6.50, 18.50]		_	
$\begin{aligned} & \text{Mang} \text{Iden} 2006 & 72.1 & 7.44 & 146 & 50.6 & 19.13 & 146 & 8.4 & 21.50 & 17.30, 25.70 \\ & \text{Zhu} \text{erjian} 2018 & 89.1 & 4.52 & 50 & 81.3 & 5.48 & 50 & 9.4 & 7.80 & [5.83, 9.77] \\ & \text{Total} (95\% Cl) & 89.1 & 4.52 & 50 & 81.3 & 5.48 & 50 & 9.4 & 7.80 & [5.83, 9.77] \\ & \text{Total} (95\% Cl) & 967 & 967 & 100.0\% & 9.84 & [6.45, 13.24] \\ & \text{Heterogeneity: Taa2 = 30.91; Ch2 = 449.54, df = 10 (P < 0.00001); l2 = 98\% \\ & \text{Test for overall effect: Z = 5.68 (P < 0.00001)} & \text{Terours} & [experimental] \\ \hline & \text{Experimental} & \text{Control} & \text{Weight} & \text{Mean Difference} & \text{Mean Difference} \\ & \text{Study or Subgroup} & \text{Mean} & SD & Total & \text{Mean} & SD & Total & 0.51 & 10.48 & 50.55\% CI \\ \hline & \text{2.1.1 Accupancture+Rehabilitation N} \\ & \text{He chengu} 2012 & 64.42 & 8.27 & 126 & 39.36 & 8.93 & 126 & 9.9 & 25.06 & [22.93, 27.19] \\ & \text{Li weiging} 2019 & 34.91 & 62 & 292 & 64 & 10.2 & 4.21 & [3.16, 5.26] \\ & \text{Li weiging} 2015 & 34.1 & 24.7 & 100 & 23.6 & 18.1 & 100 & 7.7 & 12.50 & [5.03, 18.50] \\ & \text{Mong ading} 2019 & 54.62 & 4.72 & 80 & 78.51 & 4.13 & 80 & 10.1 & 7.11 & [5.74, 8.48] \\ & \text{Mang Icen 2006 } 72.1 & 17.44 & 11 & 50.6 & 19.13 & 13 & 22 & 21.50 & [5.03, 8.60] \\ & \text{Theregoneity: Taa2 = 48.68; Chl2 = 307.12, df = 7 (P < 0.00001); l2 = 97\% \\ & \text{Test for overall effect: Z = 407 (P < 0.00001) \\ & \text{Subtatal} (95\% Cl) & 19.2 & 10.2 & 18.56 & 1.58 & 120 & 10.3 & 3.99 & [3.37, 4.61] \\ & \text{Subtatal} (95\% Cl) & 19.2 & 10.2 & 18.56 & 1.58 & 120 & 10.3 \\ & \text{Subtatal} (95\% Cl) & 19.2 & 19.2 & 10.2 & 20.1 & 7.40 & [0.56, 14.25] \\ & \text{Heterogeneity: taa2 = 23.77, chl2 = 37.01, df = 1 (P < 0.00001); l2 = 97\% \\ & \text{Test for overall effect: Z = 2.12 (P = 0.03) \\ & \text{L1.3 Headacupunture+Rehabilitation \\ & \text{Shen finglum 2015 } & 22.53 & 6.3231 & 60 & 18.7 & 6.0524 & 60 & 9.9 & 3.83 & [1.62, 6.04] \\ & Heterogeneity: taa2 = 2.3.9; chl2 = 37.01, df = 1 (P < 0.00001); l2 = 97\% \\ & \text{Test for overall effect: Z = -3.39 (P = 0.0007) \\ & \text{Test for overall effect:$	Wang chunwang 2019	85.62	4.72	80	78.51	4.13	80	9.6	7.11 [5.74, 8.48]		-	
$ \begin{array}{c} \mbox{Zhou havgun 2009} & 32.19 & 6.55 & 72 & 20.21 & 6.7 & 72 & 9.3 \\ \mbox{Zhou erjan 2018} & 89.1 & 4.52 & 50 & 81.3 & 5.48 & 50 & 9.4 & 7.80 [5.83, 9.77] \\ \hline \mbox{Total (95% CI)} & 967 & 967 & 100.0\% & 9.84 [6.45, 13.24] \\ \hline \mbox{Favours [control]} & 967 & 967 & 100.0\% & 9.84 [6.45, 13.24] \\ \hline \mbox{Favours [control]} & Favours [control] & Favours [c$	Wang lefen 2006	72.1	17.44	146	50.6	19.13	146	8.4	21.50 [17.30, 25.70]			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Zhou haiyun 2009	32.19	6.55	72	20.21	6.7	72	9.3	10.98 [8.82, 13.14]			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Zhu erjian 2018	89.1	4.52	50	81.3	5.48	50	9.4	7.80 [5.83, 9.77]		-	
Heterogeneity: Tau ² = 30.91; Chl ² = 449.54, $df = 10$ ($P < 0.00001$); $l^2 = 98\%$ Test for overall effect: $Z = 5.68$ ($P < 0.00001$) Study of Subgroup Mean SD Total Mean SD Total (%) Weight Mean Difference Mean Di	Total (95% CI)			967			967	100.0%	9.84 [6.45, 13.24]		•	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Heterogeneity: Tau ² =	30.91; C	$hi^2 = 449$	9.54, df	= 10 (P)	< 0.0000	1); $I^2 =$	98%		1		
Favours [control] Favours [control] Favours [control] Favours [control] Favours [control] Favours [control] Subj or Subjeroup Mean SD Total Mean SD Total Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean Difference Mean <th colsp<="" td=""><td>Test for overall effect:</td><td>Z = 5.68</td><td>(P < 0.00)</td><td>0001)</td><td></td><td></td><td></td><td></td><td>-20</td><td>) -10</td><td>0 10 20</td></th>	<td>Test for overall effect:</td> <td>Z = 5.68</td> <td>(P < 0.00)</td> <td>0001)</td> <td></td> <td></td> <td></td> <td></td> <td>-20</td> <td>) -10</td> <td>0 10 20</td>	Test for overall effect:	Z = 5.68	(P < 0.00)	0001)					-20) -10	0 10 20
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$									Favours	s [control]	Favours [experimental]	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$												
Study or Subgroup Mean SD Total Mean SD Total (%) IV, Random, 95% CI IV, Random, 95% CI 2.1.1 Acupuncture+Rehabilitation VS Rehabilitation VS Rehabilitation VS Rehabilitation He chengyu 2012 64.42 8.27 126 9.9 25.06 [2.93, 27.19] + Liu weiping 2005 34.91 11 62 29.96 10.4 62 9.1 4.95 [1.18, 8.72] + Mo yaqing 2015 34.75 87 51.39 8.16 87 9.7 8.02 [5.51, 10.53] + Shen fanglun 2015 36.1 24.7 100 23.6 18.1 100 7.11 [5.74, 8.48] + Wang lefan 2006 72.1 74.41 50.6 19.13 11.3 2.15.16 [62.0, 36.80] + Subtotal (95% CI) 580 580 7.00 10.64[5.51, 15.76] + + Subtotal (95% CI) 580 10.3 3.99 [3.37, 4.61] + + + L1.2 Electricacupuncture+Rehabilitation V Rehabilitation Sketalitation <td></td> <td>Ex</td> <td>xperimen</td> <td>ıtal</td> <td></td> <td>Control</td> <td></td> <td>Weight</td> <td>Mean Difference</td> <td>Mean I</td> <td>Difference</td>		Ex	xperimen	ıtal		Control		Weight	Mean Difference	Mean I	Difference	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Study or Subgroup	Mean	SD	Total	Mean	SD	Total	(%)	IV, Random, 95% C	I IV, Rando	om, 95% CI	
$\frac{1}{1} + \frac{1}{1} + \frac{1}$	2.1.1 Acupuncture+Re	ehabilitat	tion VS F	Rehabili	tation							
The chergy $U12 = 64.42 + 8.27 + 126 + 9.366 + 8.58 + 126 + 9.9 + 25.06 + 12.52 + 12.13.16, 5.26]$ Liu verping 2015 $24.47 + 8.75 + 87 + 51.39 + 8.16 + 87 + 9.7 + 8.02 + 55.1, 10.53]$ Mo yaqing 2019 $59.41 + 8.75 + 87 + 51.39 + 8.16 + 87 + 9.7 + 8.02 + 55.1, 10.53]$ Shen fanglun 2015 $36.1 + 24.7 + 100 + 22.6 + 18.1 + 100 + 7.7 + 12.50 + 65.0, 18.50]$ Wang churwang 2019 $85.62 + 4.72 + 80 + 78.51 + 4.13 + 80 + 10.1 + 7.11 + 57.48 + 848]$ Wang left 2006 $72.1 + 7.44 + 11 + 50.6 + 19.13 + 11 + 3.2 + 21.50 + 62.0, 36.80]$ Zhu erjian 2018 $89.1 + 4.52 + 50 + 81.3 + 5.48 + 50 + 9.9 + 7.80 + 58.48 + 58.48 $	IIh	(4.42	0.07	126	20.20	0.02	126	0.0	25.07 [22.02.27.10]			
Li yinghua 2015 24.75 3.12 64 20.54 2.92 64 10.2 4.21 [3.16, 3.26] Li weiping 2005 34.91 11 62 29.96 10.4 62 9.1 4.95 [1.18, 8.72] Mo yaqing 2019 59.41 8.75 87 51.39 8.16 87 9.7 8.02 [5.51, 10.53] Shen fanglun 2015 36.1 24.7 100 23.6 18.1 100 7.7 12.50 [6.50, 18.50] Wang churwang 2019 85.2 4.72 80 78.51 4.13 80 10.1 7.11 [5.74, 8.48] Wang lefen 2006 72.1 17.44 11 50.6 19.13 11 3.2 21.50 [6.20, 36.80] Zhu erjian 2018 89.1 4.52 50 81.3 5.48 50 9.9 7.80 [5.83, 9.77] Subtotal (95% CI) 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, df = 7 ($P < 0.00001$); I^2 = 98% Test for overall effect: $Z = 4.07 (P < 0.00001)$ 2.1.2 Electricacupuncture+Rehabilitation Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] Subtotal (95% CI) 192 192 20.1 7.40 [0.56, 14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 ($P < 0.00001$); I^2 = 97% Test for overall effect: $Z = 2.12 (P = 0.03)$ 2.1.3 Headacupunture+Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: tot applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 60 60 9.9 3.83 [1.62, 6.04] Heterogeneity: tot applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); I^2 = 98% Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 2.60 ($P < 0.0001$) Test for subgroup difference: chi ² = 6.18, df = 2 ($P = 0.05$); I^2 = 67.6% Favours [control] Favours [experimental]	He chengyu 2012	64.42	8.27	126	39.36	8.93	126	9.9	25.06 [22.93, 27.19]			
Lu weiping 2005 34.91 11 62 29.96 10.4 62 9.1 4.95 [1.18, 8.7] Mo yaqing 2019 53.61 24.7 100 23.6 18.1 100 7.7 12.50 [6.50, 18.50] Wang chunwang 2019 85.62 4.72 80 78.51 4.13 80 10.1 7.11 [57.84, 84] Wang lefen 2006 72.1 17.44 11 50.6 19.13 11 3.2 21.50 [6.20, 36.80] Zhu erjian 2018 89.1 4.52 50 81.3 5.48 50 9.9 7.80 [5.83, 9.77] Subtotal (95% CI) 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, df = 7 ($P < 0.00001$); $I2 = 98%$ Test for overall effect: $Z = 4.07 (P < 0.00001$ 2.1.2 Electricacupuncture+Rehabilitation VS Rehabilitation Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Subtotal (95% CI) 192 192 20.1 7.40 [0.56,14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 ($P < 0.00001$); $I2 = 97\%$ Test for overall effect: $Z = 2.12 (P = 0.03)$ 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: Not applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 60 60 9.9 3.83 [1.62, 6.04] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 3.40 (P < 0.0001)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 3.40 (P < 0.0001)$ Total (95% CI) 822 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 5.40 (P < 0.0001)$ Test for subgroup difference: chi ² =6.18, df=2 ($P = 0.05$); $I2 = 67.6\%$ Favours [control] Favours [experimental]	Li yinghua 2015	24.75	3.12	64	20.54	2.92	64	10.2	4.21 [3.16, 5.26]		*	
Mo yaqing 2019 59.41 8.75 87 51.39 8.16 87 9.7 8.02 [5.3, 10.53] Shen fanglun 2015 36.1 24.7 100 23.6 18.1 100 7.7 11 [5.74, 8.48] Wang chunwang 2019 85.62 4.72 80 78.51 4.13 80 10.1 7.11 [5.74, 8.48] Wang lefen 2006 72.1 17.44 11 50.6 19.13 11 3.2 21.50 [6.50, 18.50] Lu erjin 2018 89.1 4.52 50 81.3 548 50 9.9 7.80 [5.83, 9.77] + Subtotal (95% CI) 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, df = 7 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 4.07 (P < 0.00001)$ 2.1.2 Electricacupuncture+Rehabilitation VS Rehabilitation Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] Subtotal (95% CI) 192 192 20.1 7.40 [0.56, 14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 ($P < 0.00001$); $I2 = 97\%$ Test for overall effect: $Z = 2.12 (P = 0.03)$ 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: tau ² = 23.39 ($P = 0.0007$) Total (95% CI) 60 60 9.9 3.83 [1.62, 6.04] Heterogeneity: Not applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 3.39 (P = 0.0001$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Favours [control] Favours [experimental]	Liu weiping 2005	34.91	11	62	29.96	10.4	62	9.1	4.95 [1.18, 8.72]			
Shen fangtun 2015 36.1 24.7 100 23.6 18.1 100 7.7 12.50 [6.50, 18.50] Wang chunwang 2019 85.62 4.72 80 78.51 4.13 80 10.1 7.11 [5.74, 8.48] Wang lefen 2006 72.1 17.44 11 50.6 19.13 11 3.2 21.50 [6.20, 36.80] Zhu erjian 2018 89.1 4.52 50 81.3 5.48 50 9.9 7.80 [5.83, 9.77] Subtotal (95% CI) 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, df = 7 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 4.07 (P < 0.00001)2.1.2 Electricacupuncture+Rehabilitation VS RehabilitationFu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61]Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14]Subtotal (95% CI) 192 192 20.1 7.40 [0.56, 14.25]Heterogeneity: tau2 = 23.77; chi2 = 37.01, df = 1 (P < 0.00001); I2 = 97\%Test for overall effect: Z = 2.12 (P = 0.03)2.1.3 Headacupunture+Rehabilitation VS RehabilitationShen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04]Heterogeneity: Not applicableTest for overall effect: Z = 3.39 (P = 0.0007)Total (95% CI) 60 60 9.9 3.83 [1.62, 6.04]Heterogeneity: tau2 = 28.02; chi2 = 401.10, df = 10 (P < 0.00001); I2 = 98\%Test for overall effect: Z = 5.30 (P = 0.0007)Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50]Heterogeneity: tau2 = 28.02; chi2 = 401.10, df = 10 (P < 0.00001); I2 = 98\%Test for overall effect: Z = 5.40 (P < 0.0001)Test for subgroup differenes: chi2=6.18, df=2 (P = 0.05); I2 = 67.6\%Favours [control] Favours [experimental]$	Mo yaqing 2019	59.41	8.75	87	51.39	8.16	87	9.7	8.02 [5.51, 10.53]		-	
Wang chunwang 2019 85.62 4.72 80 78.51 4.13 80 10.1 7.11 [5.4, 8.48] Wang left 2006 7.2.1 17.44 11 50.6 19.13 11 3.2 21.50 [6.20, 36.00] Zhu erjian 2018 89.1 4.52 50 81.3 5.48 50 9.9 7.80 [5.83, 9.77] Subtotal (95% CI) 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, df = 7 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 4.07 (P < 0.00001)$ 2.1.2 Electricacupuncture+Rehabilitation VS Rehabilitation Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] Subtotal (95% CI) 192 192 20.1 7.40 [0.56, 14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 ($P < 0.00001$); $I2 = 97\%$ Test for overall effect: $Z = 2.12 (P = 0.03)$ 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: Not applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 5.40 (P < 0.0001)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 5.40 (P < 0.0001)$ Test for subgroup differenes: chi ² =6.18, df=2 ($P = 0.05$); $I2 = 67.6\%$ Favours [control] Favours [experimental]	Shen fanglun 2015	36.1	24.7	100	23.6	18.1	100	7.7	12.50 [6.50, 18.50]			
Wang lefen 2006 72.1 17.44 11 50.6 19.13 11 3.2 21.50 [6.20, 36.80] Zhu erjian 2018 89.1 4.52 50 81.3 5.48 50 9.9 7.80 [5.83, 9.77] Subtotal (95% CI) 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, df = 7 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 4.07$ ($P < 0.00001$) 2.1.2 Electricacupuncture+Rehabilitation VS Rehabilitation Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] Subtotal (95% CI) 192 192 20.1 7.40 [0.56, 14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 ($P < 0.00001$); $I2 = 97\%$ Test for overall effect: $Z = 2.12$ ($P = 0.03$) 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: Not applicable Test for overall effect: $Z = 3.39$ ($P = 0.0007$) Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 5.40$ ($P < 0.00001$) Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 5.40$ ($P < 0.00001$) Test for subgroup difference: chi ² =6.18, df=2 ($P = 0.05$); $I2 = 67.6\%$ Favours [control] Favours [experimental]	Wang chunwang 2019	85.62	4.72	80	78.51	4.13	80	10.1	7.11 [5.74, 8.48]		+	
$\begin{aligned} & \text{Zhu erjian 2018} \$9.1 4.52 50 \$1.3 5.48 50 9.9 7.80 [5.83, 9.77] \\ & \text{Subtotal (95\% CI)} 580 580 70.0 10.64[5.51, 15.76] \\ & \text{Heterogeneity: Tau2 = 48.68; Chi2 = 307.12, df = 7 (P < 0.00001); I2 = 98% \\ & \text{Test for overall effect: } Z = 4.07 (P < 0.00001) \\ & 2.1.2 \text{ Electricacupuncture+Rehabilitation VS Rehabilitation} \\ & \text{Fu yan 2013} 22.55 3.1 120 18.56 1.58 120 10.3 \\ & \text{Subtotal (95\% CI)} 192 192 20.1 7.40 [0.56, 14.25] \\ & \text{Heterogeneity: Tau2 = 23.77; chi2 = 37.01, df = 1 (P < 0.00001); I2 = 97\% \\ & \text{Test for overall effect: } Z = 2.12 (P = 0.03) \\ & \text{Z.1.3 Headacupunture+Rehabilitation VS Rehabilitation} \\ & \text{Shen fanglun 2015} 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] \\ & \text{Heterogeneity: Not applicable} \\ & \text{Test for overall effect: } Z = 3.39 (P = 0.0007) \\ & \text{Total (95\% CI)} \qquad 832 832 100.0 9.17 [5.84, 12.50] \\ & \text{Heterogeneity: tau2 = 28.02; chi2 = 401.10, df = 10 (P < 0.00001); I2 = 98\% \\ & \text{Test for overall effect: } Z = 5.40 (P < 0.0001) \\ & \text{Test for overall effect: } Z = 5.40 (P < 0.0001) \\ & \text{Test for subgroup differences: chi2 = 6.18, df = 2 (P = 0.05); I2 = 67.6\% \\ & \text{Favours [control]} \text{Favours [experimental]} \\ & \text{Favours [control]} \text{Favours [control]} \\ & \text{Favours [control]} \text{Favours [control]} \\ & \text{Favours [control]} \text{Favours [control]} \\ & \text$	Wang leten 2006	72.1	17.44	11	50.6	19.13	11	3.2	21.50 [6.20, 36.80]			
Subtotal (95% CI) 580 580 70.0 10.64[5.51, 15.76] Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, $df = 7$ ($P < 0.00001$); $l2 = 98%$ 70.0 10.64[5.51, 15.76] Test for overall effect: $Z = 4.07$ ($P < 0.00001$) 2.1.2 Electricacupuncture+Rehabilitation VS Rehabilitation Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] Subtotal (95% CI) 192 192 20.1 7.40 [0.56,14.25] + Heterogeneity: tau ² = 23.77; chi ² = 37.01, $df = 1$ ($P < 0.00001$); $l2 = 97\%$ - - - Test for overall effect: $Z = 2.12$ ($P = 0.03$) 60 60 9.9 3.83 [1.62, 6.04] + Subtotal (95% CI) 63 8.32 100.0 9.17 [5.84, 12.50] + Heterogeneity: Not applicable Test for overall effect: $Z = 3.03$ ($P = 0.0007$) + - - - - - - - - - - - - - - - - <td< td=""><td>Zhu erjian 2018</td><td>89.1</td><td>4.52</td><td>50</td><td>81.3</td><td>5.48</td><td>50</td><td>9.9</td><td>7.80 [5.83, 9.77]</td><td></td><td></td></td<>	Zhu erjian 2018	89.1	4.52	50	81.3	5.48	50	9.9	7.80 [5.83, 9.77]			
Heterogeneity: Tau ² = 48.68; Chi ² = 307.12, df = 7 ($P < 0.00001$); $I2 = 98%$ Test for overall effect: $Z = 4.07 (P < 0.00001$) 2.1.2 Electricacupuncture+Rehabilitation VS Rehabilitation Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] Subtotal (95% CI) 192 192 20.1 7.40 [0.56, 14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 ($P < 0.00001$); $I2 = 97\%$ Test for overall effect: $Z = 2.12 (P = 0.03)$ 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Heterogeneity: Not applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 5.40 (P < 0.0001)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ Test for overall effect: $Z = 5.40 (P < 0.0001)$ Test for subgroup differenes: chi ² =6.18, df=2 ($P = 0.05$); $I2 = 67.6\%$ Favours [control] Favours [copprimental]	Subtotal (95% CI)			580			580	70.0	10.64[5.51, 15.76]		•	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Heterogeneity: Tau ² = Test for overall effect:	48.68; C Z = 4.07	$hi^2 = 302$ (P < 0.00	7.12, <i>df</i> 0001)	= 7 (P <	0.00001); $I^2 = 9$	98%				
Fu yan 2013 22.55 3.1 120 18.56 1.58 120 10.3 3.99 [3.37, 4.61] Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] Subtotal (95% CI) 192 192 20.1 7.40 [0.56, 14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 (P < 0.00001); I ² = 97% - - Test for overall effect: Z = 2.12 (P = 0.03) - - - 2.1.3 Headacupunture+Rehabilitation - - - - Subtotal (95% CI) 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] - Heterogeneity: Not applicable - - - - - - Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] - Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% - -20 -10 0 10 20 Test for overall effect: Z = 5.40 (P	2.1.2 Electricacupunct	ture+Rel	nabilitatio	on VS F	Rehabilit	ation						
Fully all 2013 22.53 3.1 120 18.56 1.38 120 10.3 3.59 [5.37, 4.61] + Zhou haiyun 2009 31.19 6.55 72 20.21 6.7 72 9.9 10.98 [8.82, 13.14] + Subtotal (95% CI) 192 192 192 20.1 7.40 [0.56, 14.25] + Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 (P < 0.00001); I ² = 97% 7 7 9.9 3.83 [1.62, 6.04] + Subtotal (95% CI) 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] + Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] + Heterogeneity: Not applicable 7 7 9.9 9.17 [5.84, 12.50] + Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] + Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.0001); I ² = 98% - - -20 -10 0 10 20 Fest for overall effect: Z = 5.40 (P < 0.0001)	Eu	22.55	2.1	120	10 56	1 5 9	120	10.2	2 00 [2 27 4 61]		_	
2.1.0 Half and 2005 51.15 0.35 12 20.1 12 15 10.50 $[0.56, 10.14]$ Subtotal (95% CI) 192 192 20.1 7.40 $[0.56, 14.25]$ Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 (P < 0.00001); l ² = 97% 7.40 $[0.56, 14.25]$ Test for overall effect: Z = 2.12 (P = 0.03) 18.7 6.0524 60 9.9 3.83 $[1.62, 6.04]$ Subtotal (95% CI) 60 60 9.9 3.83 $[1.62, 6.04]$ \bullet Heterogeneity: Not applicable 60 60 9.9 3.83 $[1.62, 6.04]$ \bullet Total (95% CI) 832 832 100.0 9.17 $[5.84, 12.50]$ \bullet Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); l ² = 98% -20 -10 0 10 20 Fast for overall effect: Z = 5.40 (P < 0.0001)	Tu yali 2015 Zhou haiyun 2009	22.33	5.1 6.55	72	20.21	67	72	0.5	5.99 [5.57, 4.01] 10.98 [8.82, 13.14]			
Subtotal (95% CI) 192 192 20.1 7.40 [0.56,14.25] Heterogeneity: tau ² = 23.77; chi ² = 37.01, df = 1 (P < 0.00001); l ² = 97% 7.40 [0.56,14.25] Test for overall effect: Z = 2.12 (P = 0.03) 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] • Heterogeneity: Not applicable 1000000000000000000000000000000000000	Zhou haiyun 2009	51.17	0.55	12	20.21	0.7	12).)	10.70 [0.02, 15.14]			
Heterogeneity: $\tan^2 = 23.77$; $\operatorname{chi}^2 = 37.01$, $df = 1$ ($P < 0.00001$); $I^2 = 97\%$ Test for overall effect: $Z = 2.12$ ($P = 0.03$) 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] Heterogeneity: Not applicable Test for overall effect: $Z = 3.39$ ($P = 0.0007$) Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: $\tan^2 = 28.02$; $\operatorname{chi}^2 = 401.10$, $df = 10$ ($P < 0.00001$); $I^2 = 98\%$ Test for overall effect: $Z = 5.40$ ($P < 0.0001$) Test for subgroup differenes: $\operatorname{chi}^2 = 6.18$, $df = 2$ ($P = 0.05$); $I^2 = 67.6\%$ Favours [control] Favours [experimental]	Subtotal (95% CI)			192			192	20.1	7.40 [0.56,14.25]		•	
Test for overall effect: $Z = 2.12 (P = 0.03)$ 2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] • Heterogeneity: Not applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ • • Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% • • Test for overall effect: $Z = 5.40 (P < 0.0001)$ Test for subgroup differenes: chi ² =61.8, df=2 (P = 0.05); I ² = 67.6% • Favours [control] Favours [experimental]	Heterogeneity: $tau^2 = 2$	23.77; ch	$ni^2 = 37.0$	1, <i>df</i> =	1 (P < 0.	00001); 1	$f^2 = 979$	%				
2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] \bullet Heterogeneity: Not applicable Test for overall effect: $Z = 3.39$ ($P = 0.0007$) \bullet \bullet Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] \bullet Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ -20 -10 0 10 20 Test for overall effect: $Z = 5.40$ ($P < 0.0001$) T ² = 67.6% -20 -10 0 10 20 Favours [control] Favours [experimental]	Test for overall effect:	Z = 2.12	(P = 0.0)	3)								
2.1.3 Headacupunture+Rehabilitation VS Rehabilitation Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 $3.83 [1.62, 6.04]$ Subtotal (95% CI) 60 60 9.9 $3.83 [1.62, 6.04]$ Heterogeneity: Not applicable Test for overall effect: $Z = 3.39 (P = 0.0007)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% Test for overall effect: $Z = 5.40 (P < 0.0001)$ Test for subgroup differenes: chi ² =6.18, df=2 (P = 0.05); I ² = 67.6% Favours [control] Favours [experimental]												
2.1.5 Treaded pullitie (Freehabilitation) Shen fanglun 2015 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] \bullet Heterogeneity: Not applicable Test for overall effect: Z = 3.39 (P = 0.0007) \bullet \bullet \bullet Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] \bullet Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% \bullet -20 -10 \bullet Test for overall effect: Z = 5.40 (P < 0.0001)	213 Headacupupture	⊥Rehabi	litation	VS Reh	bilitatio	ND .						
Sheh Tangun 2013 22.53 6.3231 60 18.7 6.0524 60 9.9 3.83 [1.62, 6.04] Subtotal (95% CI) 60 60 9.9 3.83 [1.62, 6.04] • Heterogeneity: Not applicable Test for overall effect: $Z = 3.39$ ($P = 0.0007$) • • Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] • Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ • • • Test for overall effect: $Z = 5.40$ ($P < 0.0001$) $I2 = 67.6\%$ • • • Test for subgroup differenes: chi ² =6.18, df=2 ($P = 0.05$); $I2 = 67.6\%$ • • • • Favours [control] Favours [control] Favours [experimental] •	2.1.5 Headacupulture	- 22 52	(2221		10.7	C 0524	(0)	0.0	2.02 [1.62.6.04]			
Subtotal (95% CI) 60 60 9.9 $3.83 [1.62, 6.04]$ Heterogeneity: Not applicable Test for overall effect: Z = 3.39 (P = 0.0007) Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% -20 -10 0 10 20 Test for overall effect: Z = 5.40 (P < 0.0001)	Snen rangiun 2015	22.53	6.3231	60	18./	6.0524	60	9.9	3.83 [1.62, 6.04]		- - -	
Heterogeneity: Not applicable Test for overall effect: $Z = 3.39 \ (P = 0.0007)$ Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% Test for overall effect: $Z = 5.40 \ (P < 0.0001)$ Test for subgroup differenes: chi ² =6.18, df=2 (P = 0.05); I ² = 67.6% Favours [control] Favours [experimental]	Subtotal (95% CI)			60			60	9.9	3.83 [1.62, 6.04]		♦	
Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% -20 -10 0 10 20 Test for subgroup differenes: chi ² =6.18, df=2 (P = 0.05); I ² = 67.6% -20 -10 0 10 20 Favours [control] Favours [experimental]	Heterogeneity: Not ap	plicable	(D 0.0	007)								
Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 (P < 0.00001); I ² = 98% -20 -10 0 10 20 Test for overall effect: Z = 5.40 (P < 0.0001)	lest for overall effect:	L = 3.39	(P = 0.0)	007)								
Total (95% CI) 832 832 100.0 9.17 [5.84, 12.50] Heterogeneity: tau ² = 28.02; chi ² = 401.10, df = 10 ($P < 0.00001$); $I2 = 98\%$ -20 -10 0 10 20 Test for subgroup differenes: chi ² =6.18, df=2 ($P = 0.05$); $I2 = 67.6\%$ -20 -10 0 10 20 Favours [control] Favours [experimental]												
Heterogeneity: $tau^2 = 28.02$; $chi^2 = 401.10$, $df = 10$ ($P < 0.00001$); $I^2 = 98\%$ Test for overall effect: $Z = 5.40$ ($P < 0.0001$) Test for subgroup differenes: $chi^2 = 6.18$, $df = 2$ ($P = 0.05$); $I^2 = 67.6\%$ -20 -10 0 10 20 Favours [control] Favours [experimental]	Total (95% CI)			832			832	100.0	9.17 [5.84, 12.50]		•	
Test for overall effect: $Z = 5.40 \ (P < 0.0001)$ Test for subgroup differenes: $chi^2 = 6.18$, $df = 2 \ (P = 0.05)$; $I^2 = 67.6\%$ $-20 \ -10 \ 0 \ 10 \ 20$ Favours [control]Favours [experimental]	Heterogeneity: $tau^2 = 1$	28.02; ch	$ni^2 = 401.$	10, <i>df</i> =	= 10 (P <	0.00001); $I^2 = 9$	98%				
Favours [control] Favours [experimental]	Test for overall effect:	Z = 5.40	(P < 0.00) $hi^2 = 4.10$	001)	D - 0.05), 12 - 47	60%		ı د	0 -10 0	10 20	
Favours [control] Favours [experimental]	rest for subgroup diffe	erenes: c	=0.18	, uj=2 (.	r = 0.05), 1 = 0/	.070		-2	-10 U	10 20	
									Favours	[control]	Favours [experimental]	

FIGURE 6: Forest plot (acupuncture plus rehabilitation compared with rehabilitation and its subgroup analysis on FMA).

and control groups, one study [20] compared electroacupuncture plus Western medicine treatment with Western medicine treatment alone, and three studies [21, 29, 40] compared acupuncture plus Western medicine treatment with Western medicine treatment alone. In response to different outcomes, we made the following analysis.



FIGURE 7: Funnel plot (acupuncture plus rehabilitation compared with rehabilitation on FMA).

(1) *FMA*. Four studies [20,21,29,40] used FMA as the outcome indicator in Figure 12, and a total of 438 cases were included. The results showed that acupuncture combined with Western medicine was better than Western medicine alone in improving the motor function of the patient's limbs with MD value of 16.86 (95% CI 15.89–17.84, P < 0.01 $I^2 = 38\%$).

(2) MBI and Subgroup Analysis of Interventions for MBI. Three studies [20,21,40] used MBI as the outcome indicator and included a total of 322 cases in Figure 13. The results showed that the SMD value was 1.51 (95% CI 1.61–1.87, P < 0.01, $I^2 = 75\%$).

Two of them [21,40] were acupuncture combined with Western medicine treatment compared with Western medicine treatment, and the SMD value was 1.37 (95% CI 1.02–1.73, P < 0.01, $I^2 = 69\%$). One of them [20] was the combination of electroacupuncture and Western medicine treatment compared with Western medicine treatment alone. The SMD value was 1.85 (95% CI 1.46–2.24, P < 0.01).

After merging the subgroup analysis data, it suggested that there was still a high degree of heterogeneity (P = 0.02, $I^2 = 75\%$). After sensitivity analysis, it was found that one study [40] was the main source of heterogeneity. The heterogeneity was significantly reduced after removal ($I^2 = 27\%$, P < 0.01).

(3) ND and Subgroup Analysis of Interventions for ND. Three studies [21,29,40] used ND as the outcome indicator, which included a total of 366 cases in Figure 14. Those studies compared acupuncture combined with Western medicine treatment compared with Western medicine treatment alone. The results showed that the MD value was -1.88 (95% CI -2.31 to -1.45, P < 0.01, $I^2 = 90\%$), indicating that acupuncture combined with Western medicine was superior to Western medicine alone in reducing the neurological deficit of patients.

After sensitivity analysis, it was found that Wang yu [40] may be the main source of heterogeneity, and the heterogeneity was slightly reduced after removal ($I^2 = 63\%$, P = 0.1). Meta-regression analysis of publication year and sample size did not find obvious sources of heterogeneity.

(4) *The Effective Rate.* Two studies [20,29] took clinical effectiveness as the outcome indicator in Figure 15 and included

a total of 188 cases. After the data were merged, it was shown that one piece of research data [20] could not be evaluated. After the combined effect size, the OR value was 2.12 (95% CI 1.19–3.76, P = 0.01), and the combination of acupuncture and Western medicine treatment was superior to Western medicine treatment alone in terms of effective numbers.

5. Discussion

5.1. Summary of the Results. In this study, we evaluated the efficacy and safety of acupuncture in the treatment of flaccid paralysis. Compared with the group without acupuncture intervention, the group with acupuncture intervention significantly improved the clinical scores, in terms of motor function, ability of daily living, cognitive function, quality of daily life, neurological deficit, and clinical effective rate, indicating that patients with flaccid hemiplegia could benefit from acupuncture.

This study adopted American Heart Association/ American College of Cardiology Guidelines [47] to evaluate the effectiveness and safety of acupuncture in the treatment of flaccid hemiplegia after stroke. We searched eight Chinese and English databases from their inception to December 2020, and 27 RCTs were reviewed and involved in a metaanalysis. The patients with flaccid hemiplegia after stroke could benefit from acupuncture therapy in terms of motor function (FMA), ability of daily living (MBI), cognitive function (MMSE), quality of daily life (QOL), neurological deficit (ND), and the effective rate. The meta-analysis showed that patients in the acupuncture group had a better quality of life and functional recovery. After the methodological quality assessment, all studies were classified as low quality, and no adverse events were reported in the 27 studies, indicating that acupuncture was safe in the short term, but the long-term safety could not be assessed.

5.2. Comparison with and Description of Similar Studies. Cochrane's comments indicate that although acupuncture appears to be safe, there is no clear evidence that it was beneficial [48]. There was still no significant evidence to support the effectiveness of acupuncture treatment of flaccid

	Ex	perimer	ntal		Control		Weight	Mean Diff	erence	Mean I	Difference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	(%)	IV, Random	95% CI	IV, Rand	om, 95% CI	
Fu ge 2005	69.2667	6.5032	124	68.6444	7.8136	124	8.8	0.62 [-1.17	, 2.41]		+	
Fu yan 2013	73.82	5.2	120	57.56	4.15	120	8.9	16.26 [15.07	, 17.45]		-	
Jiang yuming 2019	82.57	9.65	40	63.76	10.92	40	7.7	18.81 [14.29	, 23.33]			
Liu kejun 2019	69.24	8.91	70	57.32	8.78	70	8.4	11.92 [8.99	14.85]			
Ma mingaxiang 2018	69.4	19.5	98	51.6	11.9	98	7.7	17.80 [13.28	, 22.32]			
Mo yaqing 2019	58.76	5.89	87	49.25	4.88	87	8.9	9.51 7.90,	11.12]		+	
Shen jian 2012	30.2	18	100	21.2	15.6	100	7.6	9.00 [4.33,	13.67			
Wang chunwang 2019	84.17	6.18	80	73.05	6.32	80	8.8	11.12 [9.18	13.06]		-	
Wang lefen 2006	70.31	18.57	146	50.47	17.6	146	7.9	19.84 [15.69	, 23.99]			
Yao wei 2012	44.56	12.56	90	37.89	10.31	90	8.2	6.67 [3.31,	10.03]			
Zhang ningxia 2010	34.75	9.74	80	28.25	12.01	80	8.2	6.50 [3.11	9.89			
Zhu erjian 2018	88.2	3.58	50	78.4	4.28	50	8.9	9.80 [8.25,	11.35]		+	
T-+-1 (050/ CI)			1005			1005	100.00/	11 25 [0 12	14571			
10tal (95% CI)	20.97. Ch	; ² - 261	1085	- 11 (D -	0.00001)	1085	100.0%	11.35 [8.12]	[14.57]		•	
Test for overall effect: 2	Z = 6.90 (P < 0.000	09, <i>aj</i> = 001)	= 11 (P =	0.00001)); 1 = 5	90%		-50	-25	0 25	50
			,						Favours	[control]	Favours [e	experimental
									1 400415	[control]	Tuvouis [e	sperimentarj
	Ex	perimer	ntal		Control		Weight	Mean Diff	erence	Mean I	Difference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	(%)	IV, Random	, 95% CI	IV, Rand	om, 95% CI	
2.2.1 Acupuncture+RE	VS RE											
Fu ge 2005	69.2667	6.5032	124	68.6444	7.8136	124	8.8	0.62 [-1.17	. 2.41]			
Jiang vuming 2019	82.57	9.65	40	63.76	10.92	40	7.7	18.81 14.29	23.33]		-	
Liu kejun 2019	69.24	8.91	70	57.32	8.78	70	8.4	11.92 [8.99	14.85]		+	
Ma mingaxiang 2018	69.4	19.5	98	51.6	11.9	98	7.7	17.80 [13.28	. 22.32]		-	
Mo vaging 2019	58.76	5.89	87	49.25	4.88	87	8.9	9.51 7.90.	11.12]		-	
Shen jian 2012	30.2	18	100	21.2	15.6	100	7.6	9.00 [4.33,	13.67			
Wang chunwang 2019	84.17	6.18	80	73.05	6.32	80	8.8	11.12 [9.18	13.06]		-	
Wang lefen 2006	70.31	18.57	146	50.47	17.6	146	7.9	19.84 [15.69	, 23.99]		-	
Yao wei 2012	44.56	12.56	90	37.89	10.31	90	8.2	6.67 [3.31,	10.03]		+	
Zhang ningxia 2010	34.75	9.74	80	28.25	12.01	80	8.2	6.50 [3.11	9.89		+	
Zhu erjian 2018	88.2	3.58	50	78.4	4.28	50	8.9	9.80 [8.25,	11.35]			
Subtotal (95% CI)			965			965	91.1	10.82 [7.76]	13.88]		•	
Heterogeneity: $Tau^2 = 2$ Test for overall effect: 2	23.97; Ch Z = 6.94 (.	$i^2 = 156.$ P < 0.000	85, <i>df</i> = 001)	= 10 (<i>P</i> =	0.00001)); $I^2 = 9$	94%					
2.2.2 Electric acupunct	ure + RE	VS RE										
Fu van 2013	73 82	52	120	57 56	4 1 5	120	8.9%	16 26 [15 07	17 45]			
Subtotal (95% CI)	75.02	5.2	120	57.50	4.15	120	8.9%	16.26 [15.07	, 17.45] 7, 17.45]		•	
Heterogeneity: Not app Test for overall effect: 2	plicable Z = 26.77	(<i>P</i> < 0.0	0001)									
Total (95% CI)			1085			1085	100.0%	11.35 [8.12	14.57]		•	
Heterogeneity: $tau^2 = 2$ Test for overall effect: 2 Test for subgroup diffe	29.87; chi ² Z = 6.90 (. rences: C	$P^2 = 261.6$ P < 0.000 $hi^2 = 10.000$	9, df = 001) 56, df =	11 (P < 0 = 1 (P = 0	.00001); .001); <i>I</i> ²	$I^2 = 90$	5%	-	100	-50	0 50	100
			-						ravours	TOURTON	ravours e	Aperimental

FIGURE 8: Forest plot (acupuncture plus rehabilitation compared with rehabilitation and its subgroup analysis on MBI).

hemiplegia after stroke in the previous studies. The results of this study provided a summary of the existing evidence regarding the efficacy and safety of acupuncture in patients with flaccid hemiplegia after stroke till December 2020. To the best of our knowledge, we expanded the scope of our search to find that this study is the first systematic review and meta-analysis to evaluate the efficacy and safety of acupuncture on the treatment of flaccid hemiplegia after stroke in the eight literature databases. We found that compared with participants who received only rehabilitation treatment, Western medicine therapy, or blank control, participants who received acupuncture treatment showed a significant improvement in the scores of scales, and the Fugl-Meyer Assessment scale as the main indicator showed that the emerged mean difference was divided into 13.53 (95% CI 11.65–14.41, P < 0.01), 9.84 (95% CI 6.45–13.24, P < 0.01, $I^2 = 98\%$), and 16.86 (95% CI 15.89–17.84, P < 0.01 $I^2 = 38\%$). The results suggested that patients with flaccid hemiplegia



FIGURE 9: Funnel plot (acupuncture plus rehabilitation compared with rehabilitation on MBI).

	Experin	nental	Con	trol	Weight	Odds Ratio	Odds	Ratio	
Study or Subgroup	Events	Total	Events	Total	(%)	M-H, Fixed, 95% CI	M-H, Fixe	ed, 95% CI	
Ge yun 2006	56	60	30	60	26.2	14.00 [4.51, 43.50]			
Mo yanqing 2019	84	87	64	87	28.9	10.06 [2.89, 34.99]		_	
Yao wei 2012	86	90	68	90	39.5	6.96 [2.29, 21.15]			
Zhang ningxia 2010) 80	80	67	80	5.4	32.20 [1.88, 551.76]			
Total (95% CI)		317		317	100.0	11.07 [5.78, 21.21]		•	
Total events	306		229						
Heterogeneity: Chi	$^{2} = 1.40,$	df = 3	(P = 0.7)	1); $I^2 =$	0%		I		
Test for overall effe	ct: $Z = 7$.25 (P	< 0.0000	1)		0.001	0.1	1 10	1000
							Favours [control]	Favours [exp	erimental]

FIGURE 10: Forest plot (acupuncture plus rehabilitation compared with rehabilitation on the effective rate).

	Expe	erime	ntal	С	Contro	ol	Weight	Mean Difference	Mean Di	fference	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	(%)	IV, Random, 95% CI	IV, Randoi	m, 95% CI	
Jiang yuming 2019	70.37	11.67	40	57.28	10.29	40	20.5	13.09 [8.27, 19.91]		-	
Wang lefen 2006	10.3	9.5	146	16.4	9.3	146	25.9	-6.10 [-8.26, -3.94]	-		
Yao wei 2012	11.96	2.95	90	13.39	3.7	90	27.3	-1.33 [-2.31, -0.35]			
Zhang ningxia 2010) 12.98	5.65	80	16.48	6.73	80	26.3	-3.50 [-5.43, -1.57]	-		
Total (95% CI)			356			356	100.0	-0.18 [-4.45, 4.09]		•	
Heterogeneity: Tau	$^{2} = 17.0^{\circ}$	9; Ch	$i^2 = 55$	5.64, df	= 3 (P < 0.0	$(0001); I^2$	= 95%		1	
Test for overall effe	ct: Z = 0	.08 (1	P = 0.9	93)			,,,	-100	-50 0) 50	100
		ì		,				T.	r · · · 11		11
								Favours	[experimental]	Favours [contro	01]
						.1	147. : - 1 . 4	Marris Differences	Mars D	<i>cc</i>	
	Expe	cD			ontro) Т (1	weight	Mean Difference	Mean Di	inerence	
Study or Subgroup	Mean	SD	Iotal	Mean	SD	Iotal	(%)	IV, Random, 95% CI	IV, Randoi	m, 95% CI	
Wang lefen 2006	10.2	0.5			0.0	1.1.4					
	10.5	9.5	146	16.4	9.3	146	31.1	-6.10 [-8.26, -3.94]			
Yao wei 2012	10.5 11.96	9.5 2.95	146 90	16.4 13.29	9.3 3.7	146 90	31.1 36.5	-6.10 [-8.26, -3.94] -1.33 [-2.31, -0.35]			
Yao wei 2012 Zhang ningxia 2010	10.3 11.96) 12.98	9.5 2.95 5.65	146 90 80	16.4 13.29 16.48	9.3 3.7 6.73	146 90 80	31.1 36.5 32.4	-6.10 [-8.26, -3.94] -1.33 [-2.31, -0.35] -3.50 [-5.43, -1.57]			
Yao wei 2012 Zhang ningxia 2010 Total (95% CI)	10.3 11.96) 12.98	9.5 2.95 5.65	146 90 80 316	16.4 13.29 16.48	9.3 3.7 6.73	146 90 80 316	31.1 36.5 32.4 100.0	-6.10 [-8.26, -3.94] -1.33 [-2.31, -0.35] -3.50 [-5.43, -1.57] -3.52 [-6.32, -0.72]	+ + +		
Yao wei 2012 Zhang ningxia 2010 <i>Total (95% CI)</i> Heterogeneity: Tau	10.3 11.96 12.98 $^{2} = 5.35$	9.5 2.95 5.65 ; Chi ²	146 90 80 <i>316</i> $^{2} = 17$	16.4 13.29 16.48	9.3 3.7 6.73 = 2 (P	146 90 80 316 2 = 0.00	31.1 36.5 32.4 100.0 002); I2 =	-6.10 [-8.26, -3.94] -1.33 [-2.31, -0.35] -3.50 [-5.43, -1.57] -3.52 [-6.32, -0.72] 88%	+ + +		
Yao wei 2012 Zhang ningxia 2010 <i>Total (95% CI)</i> Heterogeneity: Tau Test for overall effe	10.3 11.96 12.98 $^{2} = 5.35$ ct: $Z = 2$	9.5 2.95 5.65 ; Chi ² 2.46 (1	146 90 80 <i>316</i> 2 = 17 P = 0.0	16.4 13.29 16.48 16, <i>df</i> =	9.3 3.7 6.73 = 2 (P	$ \begin{array}{r} 146 \\ 90 \\ 80 \\ 316 \\ 7 = 0.00 \end{array} $	31.1 36.5 32.4 100.0 002); I2 =	-6.10 [-8.26, -3.94] -1.33 [-2.31, -0.35] -3.50 [-5.43, -1.57] -3.52 [-6.32, -0.72] 88%20		0 10 20)
Yao wei 2012 Zhang ningxia 2010 <i>Total (95% CI)</i> Heterogeneity: Tau Test for overall effe	10.3 11.96 12.98 $^{2} = 5.35$ ct: $Z = 2$	9.5 2.95 5.65 ; Chi ² 2.46 (1	146 90 80 316 P = 17 P = 0.0	16.4 13.29 16.48 16, <i>df</i> =	9.3 3.7 6.73 = 2 (P	$ \begin{array}{r} 146 \\ 90 \\ 80 \\ 316 \\ P = 0.00 \end{array} $	31.1 36.5 32.4 100.0 002); I2 =	-6.10 [-8.26, -3.94] -1.33 [-2.31, -0.35] -3.50 [-5.43, -1.57] -3.52 [-6.32, -0.72] 88% -20 Favours [10 20 Favours [contro))]]

FIGURE 11: Forest plot (acupuncture plus rehabilitation compared with rehabilitation on ND).

Study or Subgroup	Experimental Mean SD Total	Control Mean SD Total	Weight Mean Difference (%) IV, Fixed, 95% C	ce Mean Difference CI IV, Fixed, 95% CI
Chen buwei 2010 Chu haibo 2017	74.5 9.4 72 81.95 5.26 120	60.8 10.2 72 64.95 3.48 120	9.3 13.70 [10.50, 16.9 74.6 17.00 [15.87, 18.1	90]
He jiyong 2018	81.77 15.44 116	64.33 14.67 116	6.3 17.44 [13.56, 21.3	32]
Wang yu 2017	84.15 14.11 130	65.74 11.36 130	9.8 18.41 [15.30, 21.5	52]
Total (95% CI)	438	438	100.0 16.86 [15.89, 17.8	84]
Heterogeneity: Chi Test for overall effe	$f^{2} = 4.83, df = 3 (P)$ ct: Z = 33.90 (P <	$= 0.18); I^2 = 38\%$ 0.00001)	-	-20 -10 0 10 20
				Favours [control] Favours [experimental]

FIGURE 12: Forest plot (acupuncture plus Western medicine therapy compared with Western medicine therapy on FMA).

Experimental Study or Subgroup Mean SD Total	Control Mean SD Total	Weight Std.Mean Differend (%) IV, Random, 95% (ce Std.Mean Difference CI IV, Random, 95% CI
Chen buwei 201078.916.772Chu haibo 201774.141.24120Wang yu 201776.8114.59130	52.3 11.4 72 63.16 9.85 120 60.55 12.36 130	29.21.85 [1.46, 2.24]34.71.56 [1.27, 1.85]36.11.20 [0.93, 1.46]	+ + +
subTotal (95% CI) 322	322	100.0 1.51 [1.16, 1.87]	•
Heterogeneity: $Tau^2 = 0.07$; $Chi^2 = 8$.	01, $df = 2 (P = 0.02)$); $I^2 = 75\%$ —	
Test for overall effect: $Z = 8.26$ ($P < 0$	0.00001)		-2 -1 0 1 2
			Favours [Control] Favours [Experimental]
Experimental Study or Subgroup Mean SD Total	Control Mean SD Total	Weight Std.Mean Difference (%) IV, Random, 95% (ce Std.Mean Difference CI IV, Random, 95% CI
5.1.1 ACU+MED VS MED Chu haibo 2017 74.14 1.24 120 Wang yu 2017 76.81 14.59 130	63.16 9.85 120 60.55 12.36 120	34.7 1.56 [1.27, 1.85] 36.1 1.20 [0.93, 1.46]	+
Subtotal (95% CI) 250	250	70.8 1.37 [1.02, 1.73]	•
Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 3.2$ Test for overall effect: $Z = 7.63$ ($P < 0.2$	24, <i>df</i> = 1 (<i>P</i> = 0.07) 00001)	; $I^2 = 69\%$	
5.1.2 ELEACU+MED VS MED Chen buwei 2010 78.9 16.7 72	52.3 11.4 72	29.2 1.85 [1.46, 2.24]	
Subtotal (95% CI) 72	72	29.2 1.85 [1.46, 2.24]	•
Heterogeneity: Not applicable Test for overall effect: $Z = 9.25$ ($P < 0$	00001)		
Total (95% CI) 322	322	100.0% 1.51 [1.16, 1.87]	•
Heterogeneity: $tau^2 = 0.07$; $chi^2 = 8.0$ Test for overall effect: $Z = 8.26$ ($P < 0$ Test for subgroup differences: $Chi^2 =$	1, $df = 2 (P = 0.02);$ 00001) 3.14, $df = 1 (P = 0.02);$	$I^2 = 75\%$ 08); $I^2 = 68.1\%$	-2 -1 0 1 2 Favours [control] Favours [Experimental]
Experimental Study or Subgroup Mean SD Total	Control Mean SD Total	Weight Std.Mean Difference (%) IV, Random, 95% C	ce Std.Mean Difference CI IV, Random, 95% CI
Chen buwei 201078.916.772Chu haibo 201774.141.24120	52.3 11.4 72 63.16 9.85 120	39.31.85 [1.46, 2.24]60.71.56 [1.27, 1.85]	
Total (95% CI) 192	192	100.0 1.67 [1.39, 1.95]	
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 1$ Test for overall effect: $Z = 11.76$ ($P =$	37, <i>df</i> = 1 (<i>P</i> = 0.24 0.00001)); I ² = 27%	
			-2 -1 0 1 2

FIGURE 13: Forest plot (acupuncture plus Western medicine therapy compared with Western medicine therapy on MBI).

Favours [Control]

Favours [Experimental]

Study or Subgroup	Exp Mean	erime SD	ental Total	C Mean	Contr SD	ol Total	Weight (%)	Mean Difference IV, Random, 95% CI	Mear IV, Rar	n Diff Idom	ference , 95% CI	
Chu haibo 2017 He jiyong 2018 Wang yu 2017	3.93 1.77 3.45	1.02 0.54 0.97	120 116 130	5.77 3.33 5.71	1.28 0.67 1.23	120 116 130	31.8 35.6 32.6	-1.84 [-2.13, -1.55] -1.56 [-1.72, -1.40] -2.26 [-2.53, -1.99]	+			
Total (95% CI)			366			366	100.0	-1.88 [-2.31, -1.45]	•			
Heterogeneity: Tau Test for overall effe	$1^2 = 0.13$ ect: Z =	3; Chi 8.58	$e^2 = 19$ ($P < 0$.79, <i>df</i> = .00001)	= 2 (F	P < 0.00	$(001); I^2 =$	90% -4	-2	0	2	4
								Favours [experimental]	Favours [co	ontrol]

FIGURE 14: Forest plot (acupuncture plus Western medicine therapy compared with Western medicine therapy on ND).

Study or Subgroup	Experimental		Control		Weight	Odds Ratio	Odds Ratio		
	Lveins	IOtal	Lveins	IOtal	(70)	WI-11, FIXEU, 9570 CI	WI-11, 11X	eu, 95% C1	
Chen buwei 2010	95	72	84	72		Not estimable			
He jiyong 2018	90	116	72	116	100.0	2.12 [1.19, 3.76]			
Total (95% CI)		188		188	100.0	2.12 [1.19, 3.76]			
Total events	185		156						
Heterogeneity: Not applicable									
Test for overall effect: $Z = 2.55 (P = 0.01)$							1		·1
						0.01	0.1	1 1	.0 10
							Favours [Control]	Favours [Experimental]	

FIGURE 15: Forest plot (acupuncture plus Western medicine therapy compared with Western medicine therapy on the effective rate).

after stroke could benefit from acupuncture. The secondary indicators also showed the same tendency.

Compared with three retrospective studies [49-51] of acupuncture therapy on spasticity after stroke that were similarly to flaccid paralysis, published in 2014, 2015, and 2017, respectively. The effect of acupuncture on patients with stroke observed in this study is consistent with the studies published in 2015 and 2017. The study [51] published in 2014 found that acupuncture had no effect on clinical outcome (the modified Ashworth scale, MAS) and physiological indicators (H reflex/M response). The differences in disease stage selection and study design might account for the differences in the effect of acupuncture. The study [50] published in 2015 used MAS as the main evaluation result, and the results showed that acupuncture could significantly reduce spasticity after stroke. The study [49] published in 2017 used MAS as the evaluation index to show that electroacupuncture reduced upper extremity spasm, and the FMA as the evaluation index showed that acupuncture improved overall motor function. At the same time, for lower extremity spasm, acupuncture also showed significant additional effects on lower extremity motor function and activities of daily living. There was no obvious additional effect on upper limb function.

In the past studies on spastic paralysis, most studies used the Fugl-Meyer Assessment scale and the Fugl-Meyer Assessment scale as subjective evaluation indicators, and some studies used H reflex/M response as objective physiological indicators. The studies involved in this study mostly use subjective scales to evaluate the effect of acupuncture, lacking objective physiological indicators. No matter in the

stage of flaccid hemiplegia or spastic paralysis after stroke, most studies used scales related to limb motor function, ability of daily living, and neurological deficits. Due to the selection of partial scales as the outcome indicators, most studies did not use Manual Muscle Test scale combined with modified Ashworth scale to assess the condition of muscle strength and muscle tension, and lacked objective physiological indexes, resulting in imperfect efficacy assessments. The three studies all searched the Chinese and English literature databases, and the Korean-related literature databases were also searched in the study of 2014 and 2015. Although we have searched a large number of different databases, due to language limitations, the databases of countries that conduct more acupuncture trials such as South Korea and Japan had not been searched, which might cause some omissions in clinical trials.

5.3. Limitations of the Results. There were 3 limitations in this study. First, the included 27 studies had methodological flaws and were assessed as being of low quality. However, the reasons for its low quality should be further analyzed in detail. In most studies, the authors did not clearly state the random schemes, blind methods, allocation concealment, and other biases in the research process. Therefore, we could not judge whether the author of the article had not performed these steps, or whether they have been performed but had not been noted in the article. Researchers were unable to make specific judgments on the information due to irregular writing. Second, there was obvious heterogeneity in the scores of the Fugl-Meyer Assessment scale, the modified

Barthel Index scale, and the Neurological Deficit Assessment scale. They were one of the main measurement indicators. In the subgroup analysis, the heterogeneity decreases with the intervention. At the same time, after excluding some studies through the sensitivity analysis, the heterogeneity was reduced. Meta-regression analysis found that sample size was one of the sources of heterogeneity. The diagnostic criteria of flaccid hemiplegia after stroke and the sample size were different, and acupuncture in a variety of forms, the selection of acupoints, acupuncture depth and frequency, amount of acupuncture stimulating, acupuncture operator and outcome indicators evaluation personnel qualification, and practice of the fixed number of years were different. Therefore, it might have a certain influence on the clinical efficacy and evaluation. Because the number of experimental data was not described in the study, the relevant experimental data could not be obtained after contacting the author, and the heterogeneity test of these items could not be completed. Therefore, these might be the source of heterogeneity. Third, the publication bias test was performed on groups of more than 10 studies, considering the existence of publication bias. The results of Egger's test of the Fugl-Meyer Assessment scale and the modified Barthel Index scale were P = 0.058 and P = 0.964, indicating that there was no obvious publication bias. Due to the limited number of trials, our findings should be treated with caution. In addition, all the evaluation indexes included in the studies were subjective judgment indexes such as the Fugl-Meyer Assessment scale and the modified Barthel Index scale, which were easily affected by the experience of clinicians and reviewers. Therefore, the existence of bias was easy to be detected.

Due to these limitations, the results of our study should be interpreted more cautiously. No adverse events were reported in the included 27 studies. Acupuncture treatment did not seem to cause serious adverse events and seemed to be safe in the short term, but its long-term safety was unknown, and we could not find enough evidence to support this view.

5.4. Suggestions for Future Studies. Nowadays, acupuncture has been widely used to treat hemiplegia caused by stroke. When patients with stroke are in a state of hemiplegia, acupuncture can promote the rehabilitation of the patient's muscle strength and muscle tension, and improve the motor function of the limbs, which can effectively prevent the occurrence of various complications [52–57]. However, the current research on acupuncture treatment of stroke is very abundant, and the research on acupuncture's mechanism to improve the motor function of the limbs mainly focuses on the spasticity and recovery period. There are insufficient studies on acupuncture treatment of the flaccid stage after stroke.

According to the available evidence, acupuncture treatment was beneficial to the recovery of patients with flaccid hemiplegia after stroke, although most of the included studies had methodological flaws. It was not yet possible to determine overall that acupuncture was better than other therapies in the treatment of flaccid hemiplegia after stroke. It is recommended that future study should be based on the CONSORT statement and the STRICTA consensus reporting plan and report the details of acupuncture treatment, such as the number of needles used in each treatment unit, specific acupuncture stimulation methods, needle insertion depth, needle response, treatment course, the qualifications of acupuncturist, evaluator, and the number of years of clinical practice, providing a standard and clear treatment plan, which will help to develop a more effective treatment prescription and evaluation system. In addition, it is necessary to expand the sample size, carry out multicenter, high-quality randomized controlled trials to confirm the conclusions, increase observation and follow-up to further clarify the long-term efficacy and safety of acupuncture treatment, and apply acupuncture to patients with flaccid hemiplegia after stroke treatment provides a more reliable clinical basis.

6. Conclusion

The findings in this study suggested that acupuncture as a complementary therapy was effective and short-term safe for patients with poststroke flaccid hemiplegia. However, the methodological deficiencies in previous studies have led to the call for carefully designed larger studies to confirm the potential benefit of acupuncture for patients with poststroke flaccid hemiplegia rehabilitation in future.

Data Availability

All data generated or used during the study are included in the submitted article.

Conflicts of Interest

All authors declare that they have no conflicts of interest.

Authors' Contributions

Yang Tu, TianMin Zhu, and Hui Li conceived the study; Wei Peng, Hui Li, Yang Wang, and TianMin Zhu provided general guidance to draft the protocol. Jun Wang and QingHong Hao designed the search strategy. Yang Tu drafted the manuscript. Yang Tu, TianMin Zhu, Hui Li, Wei Peng, Jun Wang, and QingHong Hao reviewed and revised the manuscript. All the authors have read and approved the final version of the manuscript.

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Supplementary Materials

The search strategy of WOS as an example. (*Supplementary Materials*)

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