

# SUPPLEMENTARY MATERIALS

## 1. Supplemental Methods

The search strategy was conducted on August 11, 2022.

### Pubmed:

#1: ("heart failure"[Title/Abstract] OR "cardiac failure"[Title/Abstract] OR "heart decompensation"[Title/Abstract] OR "myocardial failure"[Title/Abstract] OR "congestive heart failure"[Title/Abstract]) AND (clinicaltrial[Filter] OR randomizedcontrolledtrial[Filter])

#2: ("tai chi"[Title/Abstract] OR "taiji"[Title/Abstract] OR "qigong"[Title/Abstract] OR "liuzijue"[Title/Abstract] OR "wuqinxi"[Title/Abstract] OR "yijinjing"[Title/Abstract] OR "baduanjin"[Title/Abstract] OR "traditional exercise"[Title/Abstract] OR "chinese traditional exercise"[Title/Abstract] OR ("raditional"[All Fields] AND "chinese exercise"[Title/Abstract]) OR "chinese exercise"[Title/Abstract] OR "kung fu"[Title/Abstract]) AND (clinicaltrial[Filter] OR randomizedcontrolledtrial[Filter])

#1 AND #2

### Web of Science:

#1:(((TS=(heart failure)) OR TS=(Cardiac Failure)) OR TS=(Heart Decompensation)) OR TS=(Myocardial Failure)) OR TS=(Congestive Heart Failure) AND (DT=("CLINICAL TRIAL"))

#2: ((((((((((TI=(tai chi)) OR TI=(taiji)) OR TI=(qigong)) OR TI=(liuzijue)) OR

TI=(wuqinxi)) OR TI=(yijinjing)) OR TI=(baduanjin)) OR TI=('traditional exercise')) OR TI=('Chinese traditional exercise')) OR TI=('Chinese exercise'))  
OR TI=(kung fu)) AND (DT==("CLINICAL TRIAL"))

#1 AND #2

### **Embase:**

#1: ('heart failure':ab,ti OR 'cardiac failure':ab,ti OR 'heart decompensation':ab,ti OR 'myocardial failure':ab,ti OR 'congestive heart failure':ab,ti) AND ([controlled clinical trial]/lim OR [randomized controlled trial]/lim)

#2: ('tai chi':ab,ti OR taiji:ab,ti OR qigong:ab,ti OR liuzijue:ab,ti OR wuqinxi:ab,ti OR yijinjing:ab,ti OR baduanjin:ab,ti OR 'traditional exercise':ab,ti OR 'Chinese traditional exercise':ab,ti OR 'Chinese exercise':ab,ti OR 'kung fu ':ab,ti AND ([controlled clinical trial]/lim OR [randomized controlled trial]/lim)

#1 AND #2

### **Cochrane library:**

#1: (tai chi):ti,ab,kw OR (taiji):ti,ab,kw OR (qigong):ti,ab,kw OR (liuzijue):ti,ab,kw OR (wuqinxi):ti,ab,kw (Word variations have been searched)

#2: (yijinjing):ti,ab,kw OR (baduanjin):ti,ab,kw OR (kung fu):ti,ab,kw OR ("chinese traditional exercise"):ti,ab,kw OR ("chinese exercise"):ti,ab,kw

#3: #1 OR #2

#4: ("heart failure"):ti,ab,kw OR ("cardiac failure"):ti,ab,kw OR ("heart decompensation"):ti,ab,kw OR ("myocardial failure"):ti,ab,kw OR ("congestive heart failure"):ti,ab,kw

#5: #3 AND #4

**CNKI, Chongqing VIP, Wanfang Databases:**

（心力衰竭 OR 心衰） AND （太极 OR 气功 OR 六字诀 OR 五禽戏 OR 八段锦 OR 易筋经 OR 功夫 OR 中国传统运动）

2. Supplementary Tables

Table S1. Characteristics of selected studies.

Author,  Year	Region	Age, years.		Sample size		HF etiology	Types of TCE (time/ frequency)	Control (time/ frequency)	Basic management	Durati		Outcome indicators
		mean ± SD		NYHA	(drop out)					on,		
				class						month		
		TCE	CTL		TCE					CTL	s	
Wei D  2003	China	60.5±NA		II–IV	30	40	NA	Tai Chi (NA/7 times weekly)	-	TDs	3	LVEF
Yeh GY  2004	US	66±1	61±1	I–IV	15	15	Idiopathic dilated, ischemic, alcohol- related, hypertensive,	Tai Chi (60 min/twice weekly)	-	TDs; dietary, exercise advice	3	6MWD; BNP; MLHFQ; peak VO2; biomarkers

						peripartum,							
						adriamycin-induced							
Barrow		68.4	67.9±		32	33				TDs; standard medical			
DM	UK			II–III			NA	Tai Chi+Qigong (55 mins/twice weekly)	-		4	MLHFQ; Exercise capacity (ISWD); SCL-90	
		±NA	NA		(7)	(6)				supervision			
2007													
		64.2											
Yeh GY			54.7±										
	US	±16.		I–III	8	10	NA	Tai Chi (60 min/twice weekly)	-	TDs; dietary, exercise advice	3	6MWD; MLHFQ	
2008			11.8										
		2											
							Idiopathic dilated,						
		52.4											
Yao CD			51.7±				hypertensive,						
	China	±6.3		II	80	70		Tai Chi (30 min/≥5 times weekly)	-	TDs; lifestyle guidance	6	6MWD; MLHFQ; LVEF; LVEDd	
2010			7.26				coronary						
		2											
							atherosclerotic						

[illegible]

[illegible]





		59.4	59.1									
Zheng L					11							
	China	5±7.	0±9.1	II–III	8 (1)	NA	Six tips (30-40 min/7 times weekly)	-	TDs	3	6MWD; NT-proNP; MLHFQ; LVEF	
2017					(2)							
		20	0									
		71.4	69.0									
Chen DM					39	41						
	Taiwan	4±13	8±13.	I–II		NA	Baduanjin (35 min/3 times weekly)	Usual care (NA/NA)	-	3	MLHFQ; Piper Fatigue Scale	
2018					(9)	(8)						
		.65	48									
Deng XJ		64.7	67.2±		57	56						
	China			I-III		Myocardial infarction	Tai Chi (40-60 min/5 times weekly)	-	TDs; daily exercise	6	6MWD; NT-proBNP; LVEF; HAMD	
2018		±4.2	4.9		(2)	(0)						
Hägglun												
		75.6	75.5±		25	20					NT-proBNP; Multidimensional Fatigue	
d L	Sweden			II–III		NA	Tai Chi (60 min/twice weekly)	-	-	4		
		±NA	NA		(5)	(6)					Inventory; Short Physical Performance Battery	
2018												
Lu HL		69.0	68.6±						TDs; walking training (NA/14			
	China			III–IV	40	40	NA	Baduanjin (30 min/ 14 times weekly)	-		12	MLHFQ
2019		±6.8	7.6						times weekly)			





Ke JH	China	65.3										
		67.8										
		3±N	II–III	30	30	NA	Baduanjin (60min/5 times weekly)	-	TDs	6	LVEF; LVESV; LVEDV; biomarkers	
2020		0±NA										
		A										
Yao LY	China	56.8										
		56.2										
		0±6.	NA	25	25	NA	Baduanjin (NA/NA)	-	TDS; dietary, mental advice	3	MLHFQ; LVEF; LVEDd; LVESd	
2020		0±6.3										
		1										
Yu ML	China	67.7	68.3±		100	100					6MWD; BNP; MLHFQ; LVEF; aldosterone;	
				II–III			Myocardial infarction	Tai Chi (20 min/14 times weekly)	-	TDs; dietary, mental advice	6	readmission rate; mortality rate; grade of
		±5.8	6.4		(3)	(6)					cardiac function	
Zhou B	China	62.1	62.0								MLHFQ; LVEF; LVEDd; LVESd; HAMD;	
		7±5.	3±6.3	II–III	52	51	NA	Tai Chi (20–40 min/5 times weekly)	-	TDs; health, dietary advice	3	
												HAMA; SDS; PSQI
2020		28	1									



Zhou YX 2021		57.8	58.4										
	China	7±	1±4.5	II–III	50	50	Myocardial infarction	Baduanjin (30min/14 times weekly)	-	TDs; dietary, mental advice	3	6MWD; MLHFQ; LVEF; LVEDd; LVESd	
		4.61	2										

TCE: traditional Chinese exercises; CTL: control; SD: standard deviation; NYHA: New York Heart Association; LVEF: left ventricular ejection fraction; HF: heart failure TD: therapeutic drugs (prescribed according to heart failure management guideline); 6MWD: 6-minute walking distance; BNP: B-type natriuretic peptide; NT-proBNP: N-terminal pro-B-type natriuretic peptide; MLHFQ: Minnesota Living with Heart Failure Questionnaire; peak VO<sub>2</sub>: peak oxygen consumption; ISWD: incremental shuttle walk test; LVEDd: left ventricular end-diastolic dimension; BDI: Beck depression inventory; LVESd: left ventricular end-systolic diameter; E/A: the ratio value of peak systolic velocity in early diastolic phase by peak systolic velocity in late diastolic phase; SF-36: 36-Item Short Form; ADL: daily life ability scale; LVESV: left ventricular end-systolic volume; LVEDV: left ventricular end-diastolic volume; HAMD: Hamilton depression scale; HAMA: Hamilton anxiety scale; SDS: self-depression rating scale; PSQI: Pittsburgh after treatment Sleep Quality Index; NA: not available.

**Table S2.** The baseline and final values of the TCE group in selected studies.

Author,  Year	6MWD (m±SD)		LVEF (%±SD)		MLHFQ (±SD)		Peak VO2 (mL/kg/min±SD)		NTpro-BNP (pg/mL±SD)		BNP (pg/mL±SD)	
	baseline	final	baseline	final	baseline	final	baseline	final	baseline	final	baseline	final
Wei D 2003	NA	NA	45.42±2. 62	53.90±4. 68	NA	NA	NA	NA	NA	NA	NA	NA
Yeh GY 2004	327±106	412±116	24±7	NA	43±21	26±23	10.5±3	11.4±3	NA	NA	329±377	281±385
Barrow DM 2007	NA	NA	NA	NA	33	18.1	NA	NA	NA	NA	0.235±NA	NA
Yeh GY 2008	change: 76±52		25 ± 6	NA	change: -17±14		NA	NA	NA	NA	NA	NA

Yao CD			30.85±9.	48.63±9.	51.6±18.	32.6±14.						
	374±81	554±94					NA	NA	NA	NA	NA	NA
2010			78	37	4	5						
Caminiti G												
	214.9±32	291.5±46	33.6±9	NA	NA	NA	NA	NA	136.4 ± 31	99.7 ± 22	NA	NA
2011												
Yeh GY												
	391±NA	426±NA	28.3±8.0	NA	NA	NA	11.9±NA	13.0±NA	NA	NA	102±NA	92±NA
2011												
Yeh GY												
	335.4±174	404.2±190	62±9	62±9	32.8±18	28.7±16	14.5±7	15.2±6	NA	NA	98±85	98±116
2013												
Li CF 2015		409.6±89.									345.6±93.	215.3±79.
	302.6±84.9		NA	NA	NA	NA	NA	NA	NA	NA		
		2									6	9
Sang L1	312.	439. 7±80.	36. 4±3.	56. 2±3.	43. 8±1.	32. 7±1.						
							NA	NA	NA	NA	NA	NA
2015	2±130. 9	2	0	8	6	9						



Sang L2												31.8 ± 3.
2015	NA	NA	35.4±3.1	55.4±3.3	NA	NA	NA	NA	NA	NA	67.3±9.2	8
Yang XJ	322.67±12	409.67±13									345.60±29	245.33±24
2015	4.97	9.22	NA	NA	NA	NA	NA	NA	NA	NA	3.63	9.91
Yu J 2015	NA	412.56±13										
		8.26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zhou HM	209.14±13	341.38±12										
2015	3.95	1.79	≤40%	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pan XF		415.0±38.									432.0±57.	223.0±29.
2016	371.0±26.0	0	32.4±7.2	36.3±9.3	NA	NA	NA	NA	NA	NA	0	0
Xiong XH		512.5±50.							4632.3±892.	1329.4±567.		
2016	316.8±42.3	2	40.2±5.3	48.9±5.8	35.8±1.7	11.2±1.8	NA	NA	8	3	NA	NA

Yan XF		413.58±15										249.51±22
	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	
2016		3.54										9.34
Yuan LH					46.00±1.	37.71±2.						
	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA
2016					91	37						
Li RL 2017	189.21±21.	550.60±40			68.62±1	41.72±1						
			NA	NA			NA	NA	NA	NA	NA	NA
	42	.51			0.25	1.46						
Zheng L	370.00±77.	445.77±46	51.80±4.	58.78±1	38.00±8.	17.33±1.			1618.27±217			
							NA	NA		715±964.23	NA	NA
2017	04	.67	36	2.81	42	87			6.07			
Chen DM			60.44±1		22.97±1	15.40±1						
	NA	NA		NA			NA	NA	NA	NA	NA	NA
2018			3.35		7.86	1.74						
Deng XJ	261.2	558.5	42.7	49.0					3904.0±772.			
					NA	NA	NA	NA		851.0 ±180.4	NA	NA
2018	±52.9	±67.1	±6.1	±5.4					4			

Hägglund L					39.4±22.							
2018	393±NA	NA	NA	NA	6	NA	NA	NA	4479±7309	3279 ± 3448	NA	NA
Lu HL 2019	NA	NA	NA	NA	28.40±2.	9.96±2.1						
					42	8	NA	NA	NA	NA	NA	NA
Pan W 2019	126. 16 27.	368.	40.26±5.	48.					4632. 38 ±	1328. 46 ±		
	95	45±59. 71	38	97±5. 61	NA	NA	NA	NA			NA	NA
									859. 47	534. 79		
Redwine LS	285.90 ±	236.52±N										
2019	109.42	A	44± 13	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xu M 2019	163.85±27.	576.43±64			78.56±6.	42.31±3.						
	49	.92	NA	NA	93	48	NA	NA	NA	NA	NA	NA
Yu D 2019	291.95±31.	398.57±41	42.33±4.	51.91±5.			721.03±7	901.56±9				
	09	.90	69	52	NA	NA	5.44	2.83	NA	NA	NA	NA

		384.9±84.									325.5±133	161.5±80.
Yu T 2019 a	313.3±86.3	2	31.5±8.6	40.4±7.9	NA	NA	NA	NA	NA	NA	.4	2
		398.4±88.									334.5±137	138.7±63.
Yu T 2019 b	316.6±89.0	7	30.8±8.8	42.4±9.2	NA	NA	NA	NA	NA	NA	.0	2
Zhou H	189.69±36.	568.58±46										
			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2019	78	.47										
Jiao YL	216.79±50.	330.65±40	40.21±7.	57.25±8.	5.69±7.1	15.25±1			1143.47±264	791.74±145.		
							NA	NA			NA	NA
2020	05	.42	29	45	6	0.04			.47	27		
Ke JH 2020	NA	NA	46.8±4.2	51.6±2.7	NA	NA	NA	NA	NA	NA	NA	NA
Yao LY				50.34±1								
	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA
2020				2.88								
		350.9±41.				54.8±10.					462.7±35.	259.3±10.
Yu ML 2020	182.7±39.3		46.4±3.2	54.2±6.7	80.5±9.5		NA	NA	NA	NA		
		0				3					8	6

Zhou B			41.19±4.	52.06±5.	45.60±3.	36.67±2.						
	NA	NA					NA	NA	NA	NA	NA	NA
2020			63	10	14	11						
Deng LM											896.33±21	85.48±12.
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
2021											.99	47
Kang ZL	258.98±18.	336.36±36	39.93±3.	50.33±6.	76.03±1	55.03±9.			698.83±83.9	409.89±80.9		
							NA	NA			NA	NA
2021	33	.80	98	39	2.28	09			8	9		
Yang HX	422.09±64.	465.79±91	51.81±3.	52.43±2.					917.47±202.	876.02±81.1		
					NA	NA	NA	NA			NA	NA
2021	55	.33	15	58					62	0		
Ye L 2021	NA	NA	NA	NA	42.18±8.	31.39±7.	16.15±1.	18.89±1.				
					75	21	81	63	NA	NA	NA	NA
Zhou YX	360.85±21.	498.52±47	41.25±1	51.24±1								
					NA	NA	NA	NA	NA	NA	NA	NA
2021	64	.58	1.41	2.04								

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NA: not available.



**Table S3.** The baseline and final values of the control group in selected studies.

Author, Year	6MWD (m±SD)		LVEF (%±SD)		MLHFQ (±SD)		Peak VO2 (mL/kg/min±SD)		NTpro-BNP (pg/mL±SD)		BNP (pg/mL±SD)	
	baseline	final	baseline	final	baseline	final	baseline	final	baseline	final	baseline	final
Wei D 2003	NA	NA	46.28±3.08	45.20±2.38	NA	NA	NA	NA	NA	NA	NA	NA
Yeh GY 2004	340±117	289±165	22±8	NA	44±20	52±25	11.1±6	10.4±6	NA	NA	285±340	375±429
Barrow DM 2007	NA	NA	NA	NA	34	31.6	NA	NA	NA	NA	0.239±NA	NA
Yeh GY 2008	change: -33±85		23 ± 9	NA	change: 7±10		NA	NA	NA	NA	NA	NA

Yao CD			30.22±9.	39.62±7.	52.2±17.	45.4±12.						
	371±87	461±102					NA	NA	NA	NA	NA	NA
2010			32	28	3	2						
Caminiti G												
	219.2±23	272.0±33	32.8±12	NA	NA	NA	NA	NA	134.5 ± 28	111.7 ± 24	NA	NA
2011												
Yeh GY												
	392±NA	394±NA	29.8±7.3	NA	NA	NA	13.5±NA	13.0±NA	NA	NA	106±NA	119±NA
2011												
Yeh GY												
	349.7±216	360.1±205	65±8	64±7	42.0±30	28.6±25	13.1±5	13.0±4	NA	NA	72±85	107±99
2013												
	301.0±88.	334.8±84.									336.0±93.	272.4±87.
Li CF 2015			NA	NA	NA	NA	NA	NA	NA	NA		
	8	5									2	9
Sang L1	343.	405.	37. 0±2.	41. 8±3.	43. 2±1.	40. 3±1.						
							NA	NA	NA	NA	NA	NA
2015	8±135	6±110. 6	8	7	5	4						



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Yan XF		322.12±12										382.16±27
	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	
2016		8.36										9.52
Yuan LH					46.28±1.	43.04±2.						
	NA	NA	NA	NA			NA	NA	NA	NA	NA	NA
2016					53	15						
Li RL 2017	191.30±32	368.71±32			67.87±1	59.38±1						
			NA	NA			NA	NA	NA	NA	NA	NA
	.17	.24			1.44	2.61						
Zheng L	304.50±89	352.8±85.	48.60±7.	64.24±1	45.00±1	38.00±1			1307.62±169	955.7±1187.		
							NA	NA			NA	NA
2017	.67	02	54	7.64	2.23	1.57			3.28	5		
Chen DM			56.68±1		19.21±1	20.33±1						
	NA	NA		NA			NA	NA	NA	NA	NA	NA
2018			7.56		3.47	2.35						
Deng XJ	275.1	430.8	41.0	46.0					3651.0	1583.8		
					NA	NA	NA	NA			NA	NA
2018	±47.2	±57.6	±5.4	±5.2					±557.9	±221.9		

Hägglund L					45.2±24.							
2018	358±NA	NA	NA	NA	3	NA	NA	NA	3379±7332	2736 ± 2594	NA	NA
Lu HL 2019	NA	NA	NA	NA	28.56±2. 12	11.16±2. 26	NA	NA	NA	NA	NA	NA
Pan W 2019	130. 69±30. 52	327. 92±62. 33	41.58±5. 43	43. 97±5. 78	NA	NA	NA	NA	4687. 42 ± 893. 34	1685. 47 ± 549. 21	NA	NA
Redwine LS	308.15±02	245.66±N										
2019	.41	A	46± 12	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xu M 2019	170.46±30 .55	467.81±57 .22	NA	NA	75.64±7. 02	51.46±5. 17	NA	NA	NA	NA	NA	NA
Yu D 2019	292.44±30 .78	349.13±36 .33	42.41±4. 71	46.77±5. 03	NA	NA	721.22±7 5.17	812.34±8 2.05	NA	NA	NA	NA

Yu T 2019 a	309.7±84.	365.3±75.										314.5±121	191.2±80.
	7	7	32.2±8.4	38.8±8.2	NA	NA	NA	NA	NA	NA	NA	.7	6
Yu T 2019 b	309.7±84.	365.3±75.										314.5±121	191.2±80.
	7	7	32.2±8.4	38.8±8.2	NA	NA	NA	NA	NA	NA	NA	.7	6
Zhou H	193.34±32	367.47±48											
2019	.53	.59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jiao YL	220.58±47	291.62±31	40.25±8.	49.23±7.	35.72±7.	25.21±4.				1138.31±278	793.74±144.		
							NA	NA				NA	NA
2020	.98	.68	26	12	13	69				.54	68		
Ke JH 2020	NA	NA	48.5±4.0	49.6±1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
Yao LY				42.40±1									
	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA
2020				2.66									
Yu ML 2020	184.2±36.	286.7±34.			80.6±10.	68.5±12.						460.3±36.	312.7±34.
	6	9	46.5±4.5	50.6±5.4			NA	NA	NA	NA	NA	8	5

Zhou B			41.07±5.	48.72±4.	45.78±3.	41.08±2.							
	NA	NA					NA	NA	NA	NA	NA	NA	
2020			38	88	59	19							
Deng LM												895.48±22	98.75±11.
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA			
2021												.57	65
Kang ZL	263.36±16	316.30±30	40.33±3.	46.89±5.	72.98±1	62.80±8.				682.69±69.9	463.80±93.8		
							NA	NA				NA	NA
2021	.36	.98	66	93	1.59	86				8	8		
Yang HX	400.53±69	420.47±79	50.95±2.	51.99±2.						923.11±223.	932.23±155.		
					NA	NA	NA	NA				NA	NA
2021	.18	.09	69	52						07	85		
Ye L 2021	NA	NA	NA	NA	43.45±8.	40.98±8.	16.23±1.	16.31±1.					
					92	77	72	95		NA	NA	NA	NA
Zhou YX	354.52±20	421.65±40	43.86±1	45.71±1									
					NA	NA	NA	NA		NA	NA	NA	NA
2021	.76	.65	4.84	4.25									

NA: not available.

**Table S4. The characteristics of each type of TCE.**

	Characteristics	Benefits
Tai Chi	<p>Tai Chi is a type of low-intensity aerobic exercise characterized by gentle movements designed to dissipate force throughout the body while the subject changes pose, Tai Chi features gentle, coordinated and smooth movements of the body, stressing constantly shifting of body weight between two legs with both knees slightly flexed. Tai chi has been estimated to equal about 2-4 metabolic equivalents, comparable with mild-moderate aerobic exercise.</p>	<p>Tai chi can strengthen the joints, modulate pressure receptors in the aortic arch and carotid sinus. It has shown benefits in improving health-related fitness, balance, mental control, cardiorespiratory function, muscle strength of lower extremities.</p>

Qigong	Qigong is an umbrella term covering a spectrum of mind-body exercises, such as Dao-Yin-Shu (physical and breathing exercise), Wuqinxi, Baduanjin, and Yijining.	By using slow and gentle physical movements and synchronizing breath with meditation, it can coordinate breathing, stretch body, relax muscles, and regulate attention and consciousness.
Baduanjin	Baduanjin, a type of aerobic Qigong exercises with simple, slow and relaxing movements, consists of eight set of actions including support heaven with both hands, dragon sprays water with force, big bird spreads its wings, lift window to look at the moon on the left, descend to earth with force, beautiful maiden twists her waist to the right, extend shoulders to bring hands together and dragon claws to	Baduanjin can reduce oxygen consumption of myocardial by regulating the vital energy of collateral channels and organs in the body, relieving the cardiac load, and improving the body's ability to transport and utilize oxygen in blood circulation. It can inhibit the formation of free radicals, improve vascular elasticity, and reduce blood viscosity to ensure the normal flow of blood.

	the left.	
Yijinjing	Yijinjing focus on the center of the body mass, shift of garment, moderate knee flexion, extension and rotation movement, and coupled with breathing exercises, generally at the movement of knee flexion with inhalation. It emphasizes the combination of symmetrical physical postures, meditative mind, and breathing techniques in a harmonious manner.	With simplified patterns and directions, Yijinjing is easy to practice with few limitations. Yijinjing can improve physiological function, and movement disorders mental health as well as enhance organs function and immunity ability.
Wuqinxi	Wuqinxi imitates the movement and breathing patterns of five animals (tigers, deer, bears, monkeys, and birds) and emphasizes the integration of body, breath,	Through muscle activity around the hip and ankles, Wuqinxi can dredge systemic blood circulation.

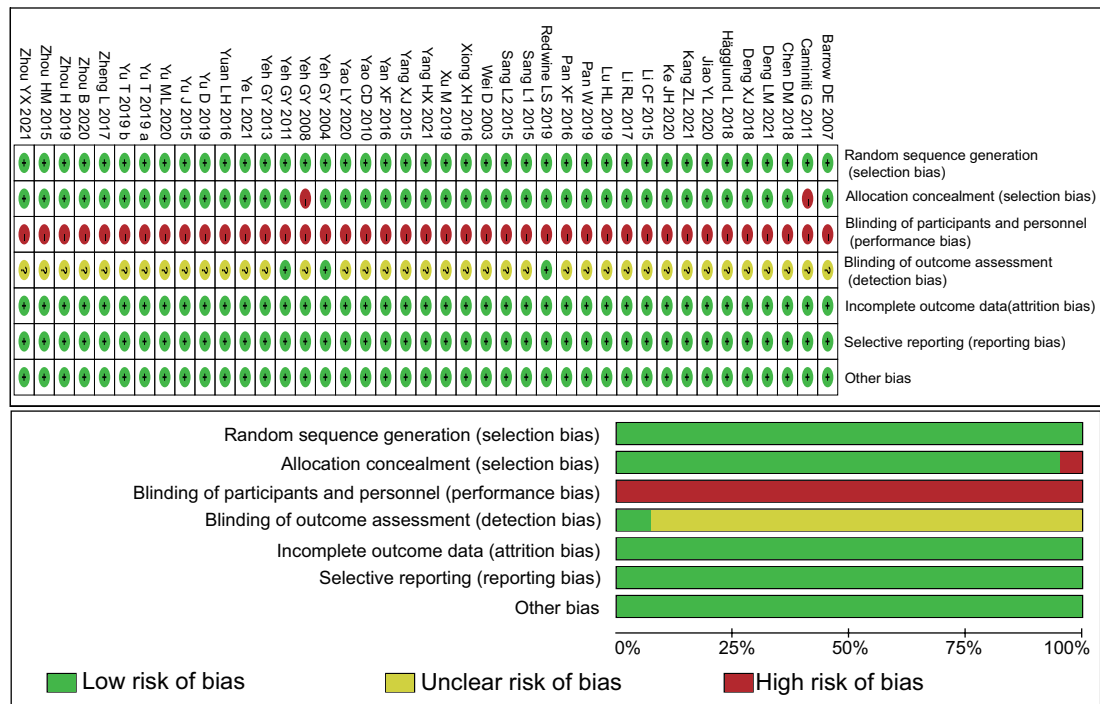


	and mind.	
Liuzijue	Liuzijue consists of a combination of respiratory patterns that involves abdominal breathing and pursed lip breathing. Six sounds (Xu, He, Hue, Si, Tap and Xi) are produced with different body movements.	Liuzijue's type of breathing slows the expiratory flow rate, which especially facilitates gas exchange in patients with chronic obstructive pulmonary diseases.

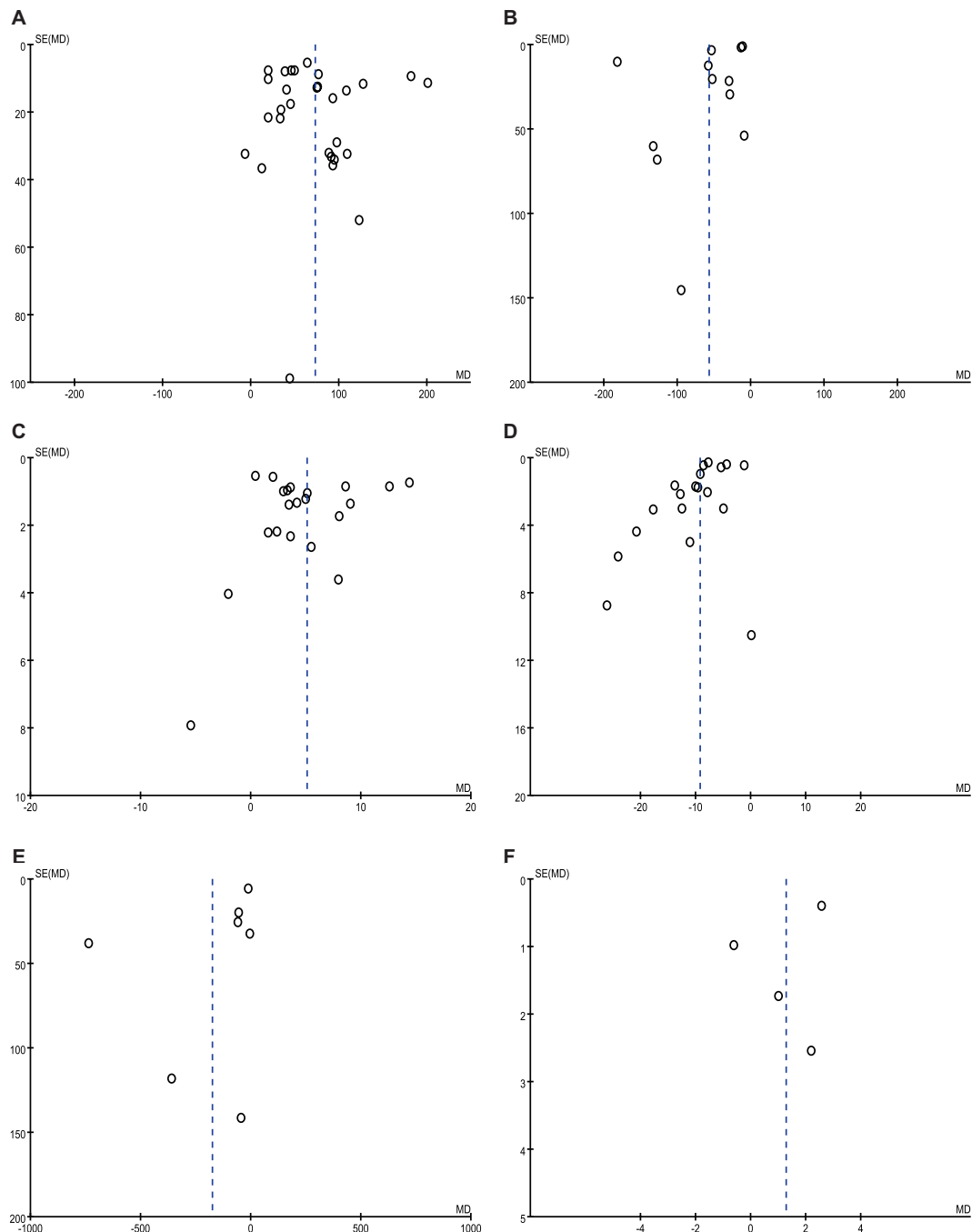
TCE: traditional Chinese exercise

3. Supplementary Figures

Figure S1. Risk of bias assessment of included studies.



**Figure S2.** Publication bias of all the outcomes. **(A)** 6-minute walk distance (6MWD), **(B)** B-type natriuretic peptide (BNP), **(C)** left ventricular ejection fraction (LVEF); **(D)** Minnesota Living with Heart Failure Questionnaire (MLHFQ), **(E)** N-terminal pro-B natriuretic peptide (NT-proBNP), **(F)** peak oxygen consumption (peak VO<sub>2</sub>).



**Figure S3.** Sensitivity of all the outcomes. **(A)** 6-minute walk distance (6MWD), **(B)** B-type natriuretic peptide (BNP), **(C)** left ventricular ejection fraction (LVEF);**(D)** Minnesota Living with Heart Failure Questionnaire (MLHFQ), **(E)** N-terminal pro-B natriuretic peptide (NT-proBNP), **(F)** peak oxygen consumption (peak VO2).

