The effects of Tai Chi on well-being in Parkinson's disease: A synthesis of systematic reviews

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Introduction

The application of Tai Chi for management of Parkinson's Disease (PD) has been assessed in a number of systematic reviews.

The current study aims to synthesise the results from systematic reviews regarding the effects of Tai Chi on well-being in PD.

Review Selection

IDENTIFICATION

k=27 reviews from database search

k=21 reviews (duplicates removed)

SCREENING

k=21 titles/abstracts screened by both authors

k=7 excluded with reasons:
- *k*=6 non-systematic reviews
- *k*=1 primary study

ELIGIBILITY

k=14 full-text reviews assessed by both authors

k=4 excluded with reasons:
- *k*=4 non-systematic reviews

INCLUDED

k=10 systematic reviews in qualitative synthesis

Review Characteristics

Review	Review quality[a]	Primary studies (RCTs)	*n* patients[b]	Tai Chi duration (weeks)
Lee et al., 2008	8	7 (3)	130	8-16
Sumec et al., 2015	3	5 (5)	361	10-24
Cwiekala-Lewis et al., 2017	7	11 (7)	506	1-24
Wu et al., 2017	4	1 (0)	23	8
Ni et al., 2014	9	9 (9)	409	4-24
Yang et al., 2014	9	8 (7)	470	4-24
Yang et al., 2015	9	11 (10)	573	4-24
Zhou et al., 2015	9	9 (9)	569	4-24
Kwok et al., 2016	8	4 (4)	159	8-52
Song et al., 2017	6	13 (9)	619	5-24

Note. [a]Review quality was acceptable to high (AMSTAR mean=7, range: 3-9); [b]Illness severity: Hoehn and Yahr Staging (mean: 2, range: 1-4); all patients in all studies on stable doses of antiparkisonian medication. AMSTAR, Assessment of Multiple Systematic Reviews scale (0-11 points); RCT, randomised controlled trial.

Review Outcomes (Qualitative Synthesis)

Motor symptoms	• Consistently reduced
Balance	• Consistently improved
Mobility	• Some improvements or no effects
Non-motor symptoms	• Some improvements or no effects

Outcome Measures

Motor symptoms	• Unified Parkinson's Disease Rating Scale (UPDRS)
Balance	• Berg Balance Scale (BBS) • Timed Up & Go (TUG) • Functional Reach Test (FRT)
Mobility	• Six-Minute Walk Test (6-MWT) • Gait velocity • Step length
Non-motor symptoms	• Quality of Life (QoL) • Activities of Daily Living (ADL)

Review Outcomes (Quantitative Synthesis)

Meta-analysis motor symptoms	Control group	*n* patients		Pooled mean effects *D* or *d* (95% *CI*)	Primary studies
		Tai Chi	Control		
Ni et al., 2014[a]	Any	132	194	-4.34 (-6.67, -2.01)*	6
Yang et al., 2014	Non-active	85	77	-.57 (-1.11, -.04)*	5
	Active	129	188	-.54 (-1.21, .12)	5
Yang et al., 2015	Non-active+med	85	77	-.57 (-1.11, -.04)*	5
	Active+med	117	179	-.78 (-1.46, -.10)*	4
Zhou et al., 2015	Any	196	251	-.75 (-1.22, -.28)*	7
Kwok et al., 2016	Non-active	63	57	-.37 (-1.31, .57)	3

Note. Motor symptom severity was reduced after Tai Chi vs. control conditions with moderate to large pooled effect sizes (*indicates statistically significant reductions).
[a]Unstandardised pooled mean difference, Cohen's *D*
med, antiparkinsonian medication

References

Cwiekala-Lewis KJ, et al. (2017) *J Bodyw Mov Ther* 21(2):414-421; Kwok JY, et al. (2016*) Complement Ther Med* 29:121-131; Lee MS, et al. (2008) *Parkinsonism Relat Disord* 14(8):589-594; Ni X, et al. (2014*) PloS One* 9(6):e99377; Song R, et al. (2017) *Parkinsonism Relat Disord* 41:3-13; Sumec R, et al. (2015*) Behav Neurol* 2015:620674; Wu PL, et al. (2017) *PloS One* 12(7):e0181515; Yang Y, et al. (2014) *PloS One* 9(7):e102942; Yang Y, et al. (2015*) PloS One* 10(4):e0122469; Zhou J, et al. (2015) *Evid Based Complement Alternat Med* 2015:593263

Discussion

All reviews suggest that Tai Chi may improve well-being in PD by reducing motor symptom severity and improving balance.

However, the magnitude of these benefits remains unclear due to incomplete blinding or randomisation, heterogeneous control conditions and outcome assessment methods.