

# The effect of Baduanjin on the insomnia of older adults: A systematic review and meta-analysis

Chengdong<sup>1,2</sup>, Bassema Abufarsakh<sup>2</sup>, Chizimuzo T.C. Okoli<sup>2</sup>, Xiangeng Zhang<sup>1</sup>

<sup>1</sup> Chengdu University of Traditional Chinese Medicine, <sup>2</sup> University of Kentucky College of nursing

**Eastern State Hospital**

MANAGED BY UK HEALTHCARE

## BACKGROUND

- Insomnia is extremely common among older adults<sup>1</sup>.
- It has serious negative impacts on their physical and mental health, social activities, and quality of life<sup>2,3</sup>.
- Baduanjin is a traditional Chinese exercise involving flowing movements, breath control, and strengthening to improve health and well-being.
- Baduanjin offers a safe, simple, and effective complementary method to alleviate insomnia<sup>4,5</sup>.
- There is a lack of systematic evaluations on the effectiveness of Baduanjin for insomnia among elderly.

## RESEARCH QUESTIONS

- Does Baduanjin improve the total and dimension scores of the Pittsburgh Sleep Quality Index (PSQI) among adults aged 60 years or older?
- What is the effective duration of Baduanjin for treating insomnia in the elderly?

## METHODS AND MATERIALS

- Four Chinese and four English databases were searched respectively.
- The inclusion criteria of the eligible study were: participants were older adults (i.e., over 60 years of age) and met the diagnostic criteria required for insomnia (i.e., PSQI score  $\geq 5$ ); 2) the intervention group included Baduanjin or conventional interventions combined with Baduanjin, 3) the control group does not include an intervention or includes conventional treatment as usual different from Baduanjin, 4) outcome measurements included the PSQI score, 5) the study design utilized a randomized controlled trial (RCT), and 6) the articles were written in English or Chinese.
- The exclusion criteria were: 1) conference papers, reviews, theses, non-human research, 2) did not report PSQI score or did not report outcome measures, 3) Baduanjin as an adjunctive therapy, and 4) no accurate description of the intervention techniques in the control group and the intervention group.

## RESULTS

- Participants (N=789) of ten RCT<sup>6-15</sup> studies were included.
- The meta-analysis showed that Baduanjin was effective for older adults with insomnia as measured by the PSQI [WMD = -2.20, 95%CI (-2.87, -1.74), P=0.000]. (See Fig.1)
- 12 weeks or more of treatment effect was superior to less than 12 weeks. (See Fig.2)
- There were significant differences in all dimensions of the PSQI between experimental and control groups. (See Table 1)

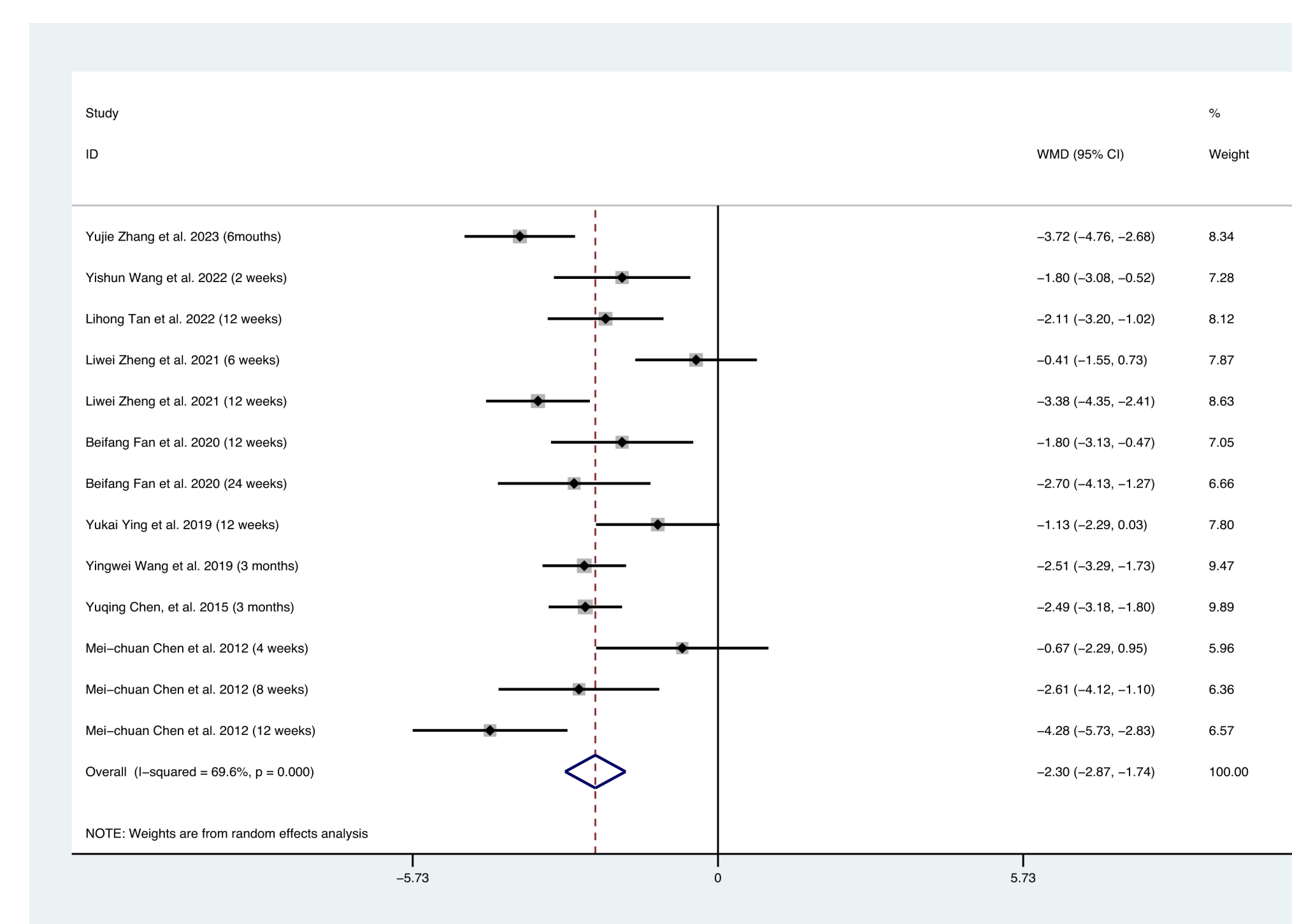


Fig 1 Forest plot of total scores of PSQI at different assessment points (N=9)

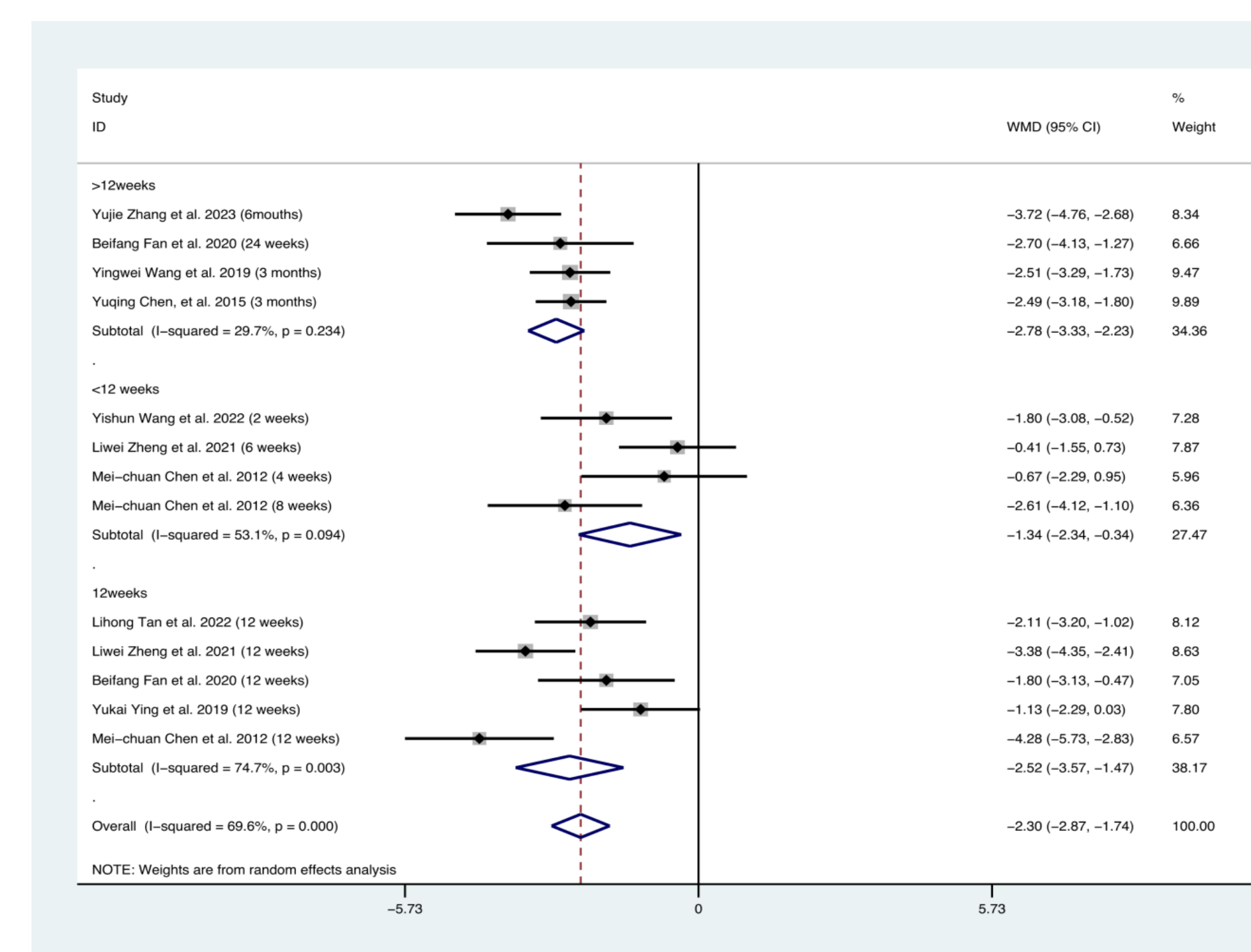


Fig 1 Forest plot of total scores of PSQI comparing <12 weeks VS 12 weeks VS >12 weeks (n=9)

Table 1 Differences in dimensions of the PSQI

Outcomes	WMD 95%CI	I <sup>2</sup> (%)	P
Sleep quality	-0.45 (-0.55,-0.34)	43.0	0.000
Time to sleep	-0.51 (-0.71,-0.31)	63.4	0.000
Sleep duration	-0.49 (-0.59,-0.39)	36.9	0.000
Sleep efficiency	-0.59 (-0.84, -0.33)	69.7	0.000
Sleep disorders	-0.19 (-0.32, -0.07)	51.1	0.003
Sleep medications	-0.37 (-0.61,-0.13)	83.1	0.002
Daytime dysfunction	-0.36 (-0.47,-0.24)	0.0	0.000

Cai et al. 2023, Wang et al. 2022, Wang et al. 2019, Chen, et al. 2015, Chen et al. 2012

## CONCLUSION

- The results of this meta-analysis suggest that Baduanjin improves insomnia in older adults
- Prolonged Baduanjin exercise duration (12 weeks or longer) is more effective than shorter durations in improving sleep outcomes.
- The methodological quality of the included studies was moderate, and there is a need to use blinding, clarify the specific intervention protocols, and optimize the objective evaluation indexes in future studies.
- Optimal Baduanjin intensity, duration and frequency for older populations with insomnia are needed in future studies to provide scientific references for this complementary intervention in clinical practice.

## References



Scan me!