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A study of home-based Baduanjin exercise for improving depressive symptoms in older adults

Submission date
14/06/2026

Recruitment status
No longer recruiting

Registration date
26/06/2026

Overall study status
Completed

Last Edited
23/06/2026

Condition category
Mental and Behavioural Disorders

[ ] Prospectively registered
[X] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Depression is common in older adults and can affect mood, sleep, and daily life. This study looks at whether a gentle form of exercise called Baduanjin can help improve symptoms of depression. Baduanjin is a traditional Chinese exercise that uses slow movements, breathing, and focus. The study aims to find out if doing Baduanjin at home for 12 weeks can reduce depressive symptoms compared to receiving health education.

Who can participate?
1. Adults aged 50 years or older
2. People diagnosed with mild to moderate major depressive disorder
3. People with a certain level of depressive symptoms based on a standard assessment
4. People without dementia and with good thinking ability
5. People who have not practised Baduanjin or similar exercises before
6. People on stable antidepressant medication for at least 4 months, if applicable
7. People willing to give informed consent

People cannot take part if they have other serious mental health conditions, severe physical illness, significant cognitive problems, are practising similar exercises, or are taking part in another clinical trial

What does the study involve?
Participants are randomly assigned to one of two groups:
1. Baduanjin exercise group
1.1. Practise Baduanjin at home for 12 weeks
1.2. Exercise 4 times per week for 50 minutes each time
1.3. Sessions include warm-up, main movements, and cool-down
1.4. Receive initial training from a coach and then use videos and written guides at home
1.5. Keep a diary of their exercise and practise for at least 20 minutes daily
2. Health education group
2.1. Take part in a 12-week health education programme
2.2. Attend group sessions and complete home learning activities
2.3. Topics include sleep, nutrition, and general health

All participants are assessed at the start, after 12 weeks, and 1 month later. The study measures changes in depression, as well as anxiety, thinking ability, and some brain-related responses.

What are the possible benefits and risks of participating?
Participants in the exercise group may benefit from improved mood, better physical wellbeing, and reduced depressive symptoms. The health education group may benefit from learning more about managing their health.

Risks are expected to be low. Baduanjin is a gentle and low intensity exercise, but there may be minor risks such as muscle discomfort or tiredness. All participants are monitored, and any unwanted effects are recorded during the study.

Where is the study run from?
The study is run from the North University of China in Taiyuan, China.

When is the study starting and how long is it expected to run for?
The study enrolled participants between 1 January 2025 and 31 December 2025. Each participant takes part for 12 weeks, with an additional follow-up 1 month later. The study was completed on 30 April 2026.

Who is funding the study?
The study is funded by the North University of China, a government organisation.

Who is the main contact?
Dr Zhengfei Cheng, based at the North University of China in Taiyuan, China, 2353664545@qq.com

Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Study information

Scientific Title
Home-based Baduanjin for depressive symptoms and exploratory prefrontal haemodynamic responses in older adults: a pilot randomized controlled study

Acronym
BDJ Depression Pilot

Study objectives
This pilot randomized controlled study aims to evaluate whether a 12-week home-based Baduanjin exercise programme can improve depressive symptoms in older adults with mild-to-moderate major depressive disorder compared with a matched health education intervention. The primary objective is to assess changes in depressive symptoms using the 17-item Hamilton Depression Rating Scale. Secondary objectives are to explore the effects of Baduanjin on anxiety symptoms, cognitive function, and prefrontal haemodynamic responses measured using diffuse correlation spectroscopy.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 01/11/2024, Ethics Committee of North University of China (No. 3 Xueyuan Road, Jiancaoping District, Taiyuan, 030051, China; +86-351-3922165; yzb@nuc.edu.cn), ref: NUC-BME-202411-037

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Blinded (masking used)

Control
Active

Assignment
Parallel

Purpose
Treatment

Study type(s)

Health condition(s) or problem(s) studied
Mild-to-moderate major depressive disorder and depressive symptoms in older adults

Interventions
Participants will be randomly allocated in a 1:1 ratio to either the Baduanjin group or the health education group using a computer-generated randomisation sequence. The randomisation sequence will be generated by an independent researcher who is not involved in participant recruitment, intervention delivery, or outcome assessment. Allocation concealment will be maintained using sequentially numbered, opaque, sealed envelopes. After eligibility confirmation, written informed consent, and baseline assessment, the intervention coordinator

will open the next envelope in sequence and assign the participant to the corresponding group. Outcome assessors will remain blinded to group allocation throughout the study.

Participants in the Baduanjin group will receive a 12-week home-based Baduanjin exercise programme. The programme consists of standard Baduanjin movements combined with breathing regulation and focused attention. Participants will practise four times per week, 50 minutes per session, including 10 minutes of warm-up, 35 minutes of core Baduanjin movements, and 5 minutes of cool-down. During the first 2 weeks, participants will receive weekly group instruction from a professional coach, followed by home practice supported by instructional videos and manuals. Participants will also be asked to complete at least 20 minutes of daily home practice and record their practice in an exercise diary.

Participants in the health education group will receive a 12-week structured health education programme matched to the Baduanjin group in frequency and duration. The content will include nutrition, sleep hygiene, chronic disease management, psychological health, and healthy lifestyle guidance. Participants will attend group-based health education sessions and complete home review activities, including reading or online learning for at least 20 minutes per day.

Outcome assessments will be conducted at baseline, after the 12-week intervention, and at 1 month after completion of the intervention.

Intervention Type
Behavioural

Primary outcome(s)
1. Change in depressive symptoms measured using the 17-item Hamilton Depression Rating Scale (HAMD-17) at baseline, 12 weeks after the intervention, and 1 month after completion of the intervention

Key secondary outcome(s)
1. Anxiety symptoms measured using the Hamilton Anxiety Rating Scale (HAMA) at baseline, 12 weeks after the intervention, and 1 month after completion of the intervention

2. Cognitive function measured using Mini-Mental State Examination (MMSE) at baseline, 12 weeks after the intervention, and 1 month after completion of the intervention

3. Prefrontal relative cerebral blood flow changes measured using diffuse correlation spectroscopy during active tasks, including the verbal fluency task and higher cognitive task. The relative cerebral blood flow change will be calculated as ΔrCBF at baseline, 12 weeks after the intervention, and 1 month after completion of the intervention

4. Recovery slope of prefrontal haemodynamic responses measured using diffuse correlation spectroscopy within 30 seconds after passive challenges, including voluntary breath holding and postural challenge tasks at baseline, 12 weeks after the intervention, and 1 month after completion of the intervention

5. Adherence and safety measured using using practice diaries and recording adverse events at during the 12-week intervention period and at 1-month follow-up after completion of the intervention

Completion date

30/04/2026

Eligibility

Key inclusion criteria
1. Aged 50 years or older
2. Meet the DSM-5 diagnostic criteria for major depressive disorder
3. Have mild-to-moderate depressive symptoms, defined as a HAMD-17 score of 15 or above
4. Have no dementia, defined as an MMSE score of 25 or above
5. Have not previously practised Baduanjin or other mind-body exercises before enrolment
6. If receiving antidepressant medication, the medication regimen must have been stable for at least 4 months before enrolment
7. Able and willing to provide written informed consent

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
50 Years

Upper age limit
100 Years

Sex
All

Total final enrolment
40

Key exclusion criteria
1. History of psychiatric disorders other than major depressive disorder, such as bipolar disorder or schizophrenia
2. Severe or unstable physical disease, such as uncontrolled hypertension, heart failure, or malignant tumours
3. Moderate-to-severe cognitive impairment
4. Participation in other mind-body exercises during the study period, such as Tai Chi, yoga, or Qigong
5. Current participation in another clinical trial

Date of first enrolment
01/01/2025

Date of final enrolment
31/12/2025

Locations

Countries of recruitment
China

Study participating centre
North University of China
No. 3 Xueyuan Road, Jiancaoping District
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030051

Sponsor information

Organisation
North University of China

ROR
https://ror.org/047bp1713

Funder(s)

Funder type

Funder Name
North University of China

Alternative Name(s)
NUC

Funding Body Type
Government organisation

Funding Body Subtype
Local government

Location
China

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file			23/06/2026	No	No