

Craft-based interventions to improve motor and cognitive health in older adults

Submission date 02/09/2025	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
Registration date 03/09/2025	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 03/09/2025	Condition category Other	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

Plain English summary of protocol

Background and study aims

As societies around the world rapidly age, healthcare costs rise and maintaining older adults' health and daily living independence becomes increasingly important. One key challenge is finding ways to slow functional decline while supporting physical and cognitive abilities. This study explored how creative activities, specifically bamboo weaving, could improve fine motor skills and visual-motor integration (VMI) in older adults.

Who can participate?

Healthy older adult volunteers aged 65 to 75.

What does the study involve?

Participants were divided into three groups, A, B, and C, each targeting 30 individuals. The study was conducted at a research facility suitable for group-based craft interventions. Participants attended sessions in a controlled environment with the necessary materials and support from the research team. Participants attended structured bamboo weaving sessions of varying difficulty according to their assigned group. The program was designed to provide engaging and creative challenges to enhance hand dexterity and coordination. Before and after the intervention, participants completed assessments including the Purdue Pegboard Test (PPT) for fine motor skills, visual-motor integration (VMI) tests, visual perception (VP) tests, and motor coordination (MC) tests.

What are the possible benefits and risks of participating?

Participation may improve hand dexterity, visual-motor integration, and coordination, which could support daily functioning and independence. Risks are expected to be minimal and primarily related to normal physical activity, such as withdrawal due to sudden physical discomfort. No adverse events are expected to be directly linked to the intervention itself.

Where is the study run from?

Cultural Heritage Park, Ministry of Culture, Taiwan.

When is the study starting and how long is it expected to run for?

June 2023 to June 2024.

Who is funding the study?

This study was investigator-initiated and primarily self-funded. The National Taipei University of Technology and the National Taichung University of Science and Technology provided institutional support in the form of facilities and administrative assistance, but no dedicated external research funding was received.

Who is the main contact?

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Contact information

Type(s)

Principal Investigator

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Additional identifiers

EudraCT/CTIS number

Nil known

IRAS number**ClinicalTrials.gov number**

Nil known

Secondary identifying numbers

Nil known

Study information

Scientific Title

A randomized controlled trial to evaluate the effects of craft-based therapeutic interventions (weaving programs of different complexity) on visual-motor integration, functional ability, and psychosocial well-being in older adults in Taiwan

Acronym

Craft4Aging

Study objectives

Participation of older adults in craft weaving activities of varying levels of difficulty is expected to improve visual-motor integration, enhance daily functional performance, and promote psychosocial well-being.

Ethics approval required

Ethics approval required

Ethics approval(s)

Approved 28/06/2023, Central Regional Research Ethics Committee China Medical University (No. 83, Xueshi Rd., North Dist., Taichung City, 404018, Taiwan; +04-22052121#11941; rrec@mail.cmu.edu.tw), ref: CRREC-112-048

Study design

Randomized controlled three-parallel-arm single-centre open-label study

Primary study design

Interventional

Secondary study design

Randomised parallel trial

Study setting(s)

School, Workplace

Study type(s)

Prevention, Quality of life, Efficacy

Participant information sheet

Participant information can be found at: <https://reurl.cc/lYn1p6>

Health condition(s) or problem(s) studied

Aging-related functional decline / geriatric health

Interventions

Participants were randomly allocated to one of the three intervention groups (cross-weaving, hexagonal weaving, and pinwheel weaving) using a computer-generated random number sequence, with a 1:1:1 allocation ratio. Randomisation was conducted by an independent researcher who was not involved in participant recruitment or outcome assessment, to minimise allocation bias.

The following interventions were undertaken:

Group A: Cross-weaving (low complexity) program, 4 weeks, 2 sessions per week, 60 min/session.

Group B: Hexagonal weaving (medium complexity) program, 4 weeks, 2 sessions per week, 60 min/session.

Group C: Pinwheel weaving (high complexity) program, 4 weeks, 2 sessions per week, 60 min/session.

Intervention Type

Behavioural

Primary outcome measure

Visual-motor integration, measured using the Beery VMI test, at baseline and post-intervention (4 weeks).

Secondary outcome measures

1. Daily functional ability, measured using the Barthel Index, at baseline and post-intervention
2. Psychosocial well-being, measured using the WHO-5 Well-Being Index, at baseline and post-intervention

Overall study start date

01/06/2023

Completion date

27/06/2024

Eligibility

Key inclusion criteria

1. Age ≥ 65 years
2. Living in community or day-care centres in Taiwan
3. Able to provide informed consent

Participant type(s)

Healthy volunteer, Resident

Age group

Senior

Lower age limit

65 Weeks

Upper age limit

89 Weeks

Sex

Both

Target number of participants

90 (30 per group)

Total final enrolment

87

Key exclusion criteria

1. Severe cognitive impairment (MMSE < 18)
2. Major physical disability preventing handicraft participation
3. Unstable medical conditions

Date of first enrolment

01/08/2023

Date of final enrolment

31/12/2023

Locations

Countries of recruitment

Taiwan

Study participating centre

Cultural Heritage Park, Ministry of Culture

No. 362, Sec. 3, Fuxing Rd., South Dist.

Taichung City

Taiwan

402001

Sponsor information

Organisation

National Taipei University of Technology

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No. 1, Sec. 3, Zhongxiao E. Rd., Da'an Dist.

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Sponsor type

University/education

Website

<https://dc.ntut.edu.tw/>

ROR

<https://ror.org/00cn92c09>

Funder(s)

Funder type

Other

Funder Name

Investigator initiated and funded

Results and Publications

Publication and dissemination plan

Study results are currently under peer review for publication in BMC Complementary Medicine and Therapies and may be disseminated through academic conferences and peer-reviewed journals.

Intention to publish date

31/12/2025

Individual participant data (IPD) sharing plan

Individual participant data will be made available as a supplement to the study publication, with all data anonymized to protect participant privacy.

IPD sharing plan summary

Published as a supplement to the results publication

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol file			03/09/2025	No	No