ISRCTN19035046 https://doi.org/10.1186/ISRCTN19035046

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

Submission date 02/09/2025	**Recruitment status** No longer recruiting	[_] Prospectively registered [X] Protocol
Registration date 03/09/2025	**Overall study status** Completed	[_] Statistical analysis plan [_] Results
Last Edited 03/09/2025	**Condition category** Other	[_] Individual participant data [_] 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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Additional identifiers

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

Primary study design
Interventional

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

Study type(s)
Prevention, Quality of life, Efficacy

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

Key secondary outcome(s)
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

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

Healthy volunteers allowed
No

Age group
Senior

Lower age limit
65 Weeks

Upper age limit
89 Weeks

Sex
All

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
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Sponsor information

Organisation
National Taipei University of Technology

ROR
https://ror.org/00cn92c09

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

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?
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Protocol file			03/09/2025	No	No