

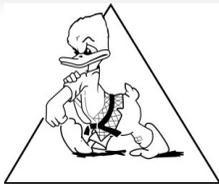
INTERNATIONAL CONFERENCE
SAFE FALLING for OLDER PEOPLE through JUDO

University of **UH** **TOKAI** UNIVERSITY **IJF ACADEMY** **JUDOs** **judoSPACE.com** **DEFiER**

Upskilling Allied Health Professionals & Judo Coaches in Teaching Safe Falling to Older Adults

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Adelaide University Judo Club Inc.



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of ADELAIDE



Proud Partner of Dynamic Balance



The Institute

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The Hospital Research
Foundation Group



Key People

Michael Headland Rokudan
Head Coach, AUJC

Dr Meera Verma PhD Godan
Beginners Coach, AUJC

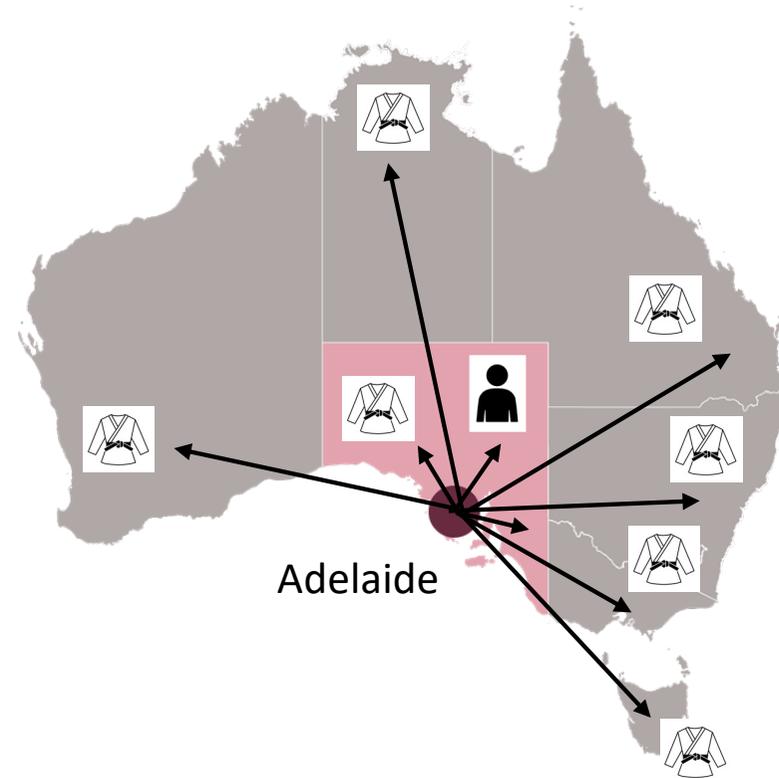
Dr Agathe Daria Jadczyk PhD
Research Fellow | Exercise Professional

Prof Renuka Visvanathan PhD, FRACP, FANZSGM, MBBS
Clinical Director | Gerontologist

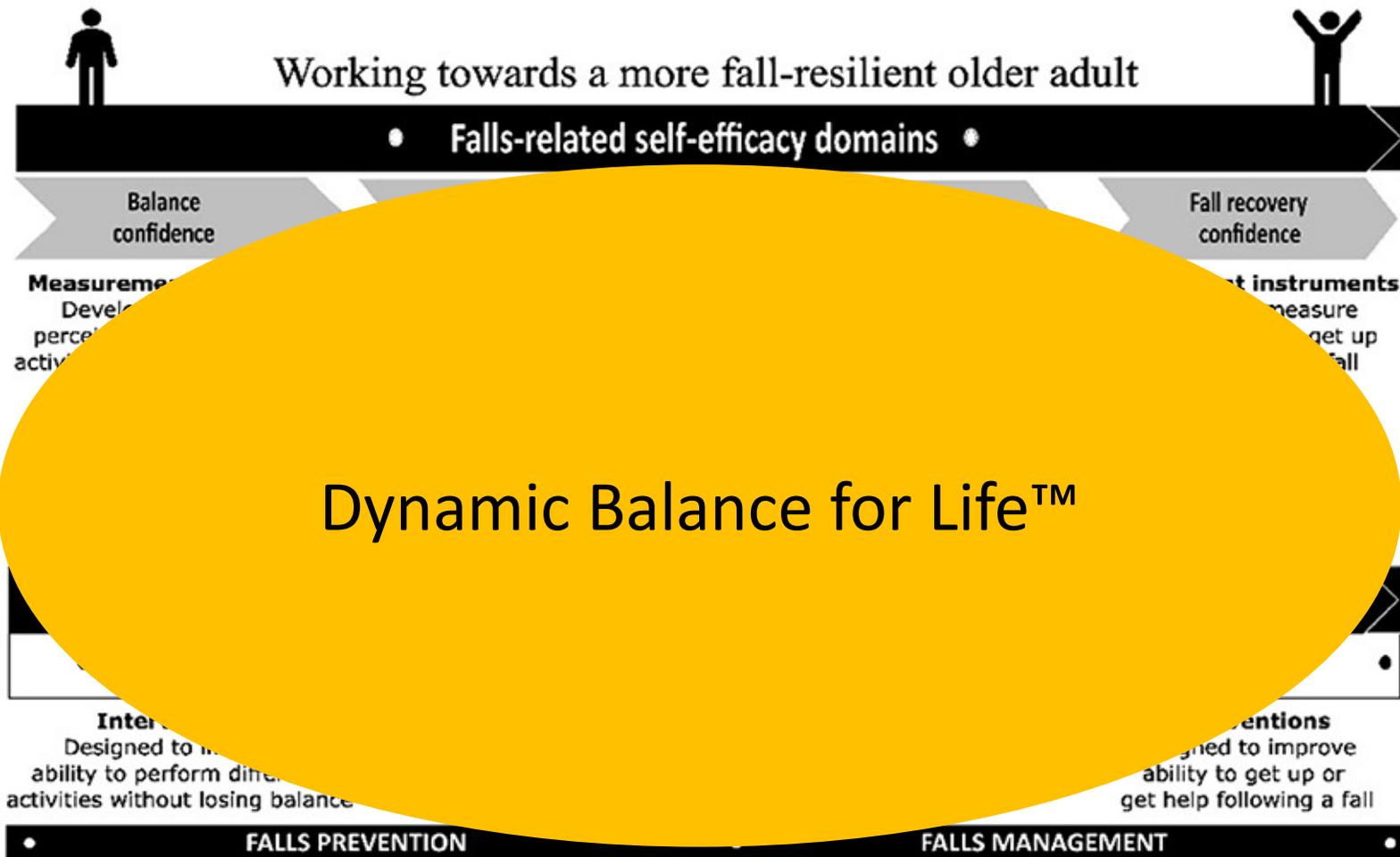
Michael Peachy Shodan
Physiotherapist, Director Homecare Therapies



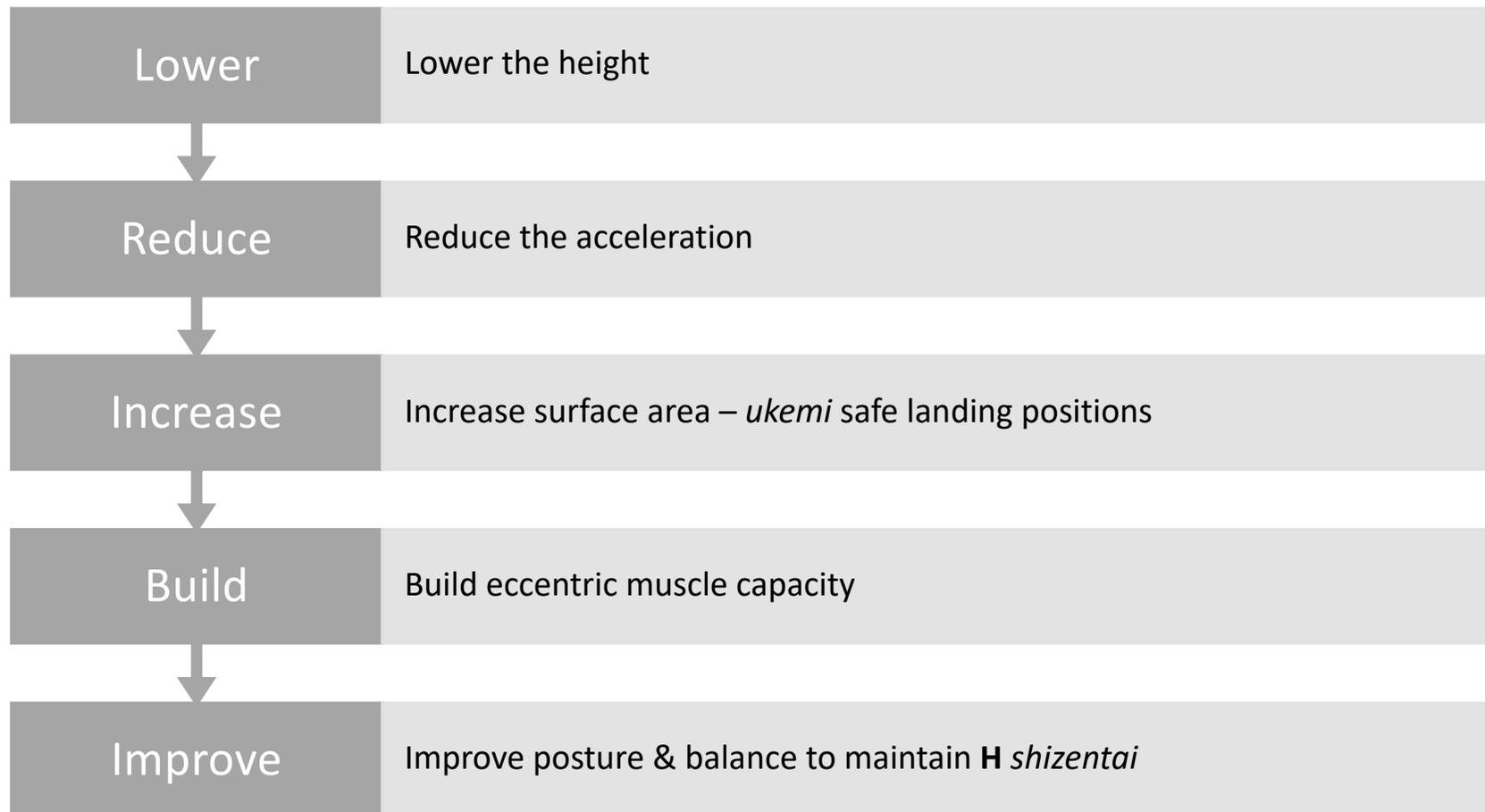
Scaling Safe Falling for Older Adults



Dynamic Balance for Life (DBfL)



Principles of DBfL

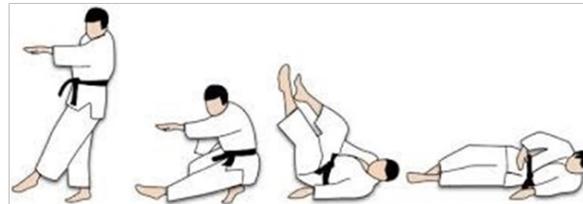


Ukemi - Safe Landing Positions

Backwards



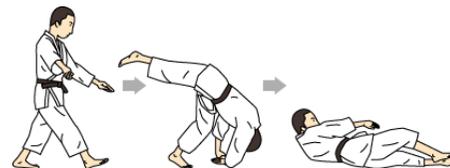
Sideways



Front



Forward Roll



A Judo-Based Exercise Program to Reduce Community-Dwelling Older Adults: A Feasibility Study

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Abstract

OBJECTIVES: This study aimed to explore the feasibility (recruitment, safety and adherence) and the effects of a supervised Judo-based exercise program over eight weeks on balance, physical performance, quality of life, and physical activity (including by frailty status) in older people aged ≥65 years.

DESIGN: Pre-post study.

PARTICIPANTS: A total of 17 participants (mean age 66-87 years; 76.5% female).

INTERVENTION: A Judo-based exercise program weekly for 60 minutes per session over eight weeks.

DOI: 10.1111/ggi.14553

REVIEW ARTICLE

EPIDEMIOLOGY, CLINICAL PRACTICE AND HEALTH

Judo-based exercise programs to improve health outcomes in middle-aged and older adults with no judo experience: A scoping review

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The practice of judo appears to impact positively on physical performance, and flexibility in older people, while also benefiting bone mineral density. This scoping review aimed to map the range, scope and type of relevant outcomes designed for middle-aged and older adults (≥45 years) with experience in judo. Six databases as well as gray literature were searched using a search strategy. Two independent reviewers screened the titles and abstracts, and full-text articles using data extraction tools developed for the purpose. Fifteen original studies were included, comprising 648 participants (mean age 66.5 years). All 15 studies reported significant positive results of ≥1 health-related outcome and bone mineral density seemed to improve only after longer intervention (≥12 months, respectively), while results regarding fear of falling and physical activity were mixed. Five studies showed improvements in fear of falling while four studies showed no change. Similarly, two studies showed improvements in physical activity while three studies showed no change. Five studies reported on safety and deemed their intervention safe (no adverse events), with two studies confirming feasibility. Findings suggest that judo-based exercise programs can positively impact health-related outcomes in middle-aged and older adults. However, studies with small sample sizes and more research is needed to confirm these findings. *Geriatr Gerontol Int* 2023; •••: •••-•••

Keywords: elderly, falls, healthy aging, judo, middle-aged.

The Arts and Sciences of

Evidence & Research

1. Focus Group
2. Scoping Review
3. Pilot Study
4. Global Consensus Statement
5. The Hospital Research Foundation (THRF) Study

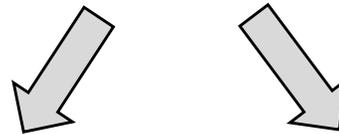
Global Consensus Statement

How Can Judo Contribute to Reducing the Problem of Injurious Falls in Older Adults?

By Mike Callan¹, Charlotte Bird², Slavisa Bradic³, María del Carmen Campos Mesa⁴, Oscar del Castillo Andrés⁵, Maja Sori Doval⁶, Jean-Pierre Dziergwa⁷, Jim Feenan⁸, Michael Headland⁹, Akira Ikumi¹⁰, Kosei Inoue¹¹, Agathe Daria Jadczyk¹², Takeshi Kamitani¹³, Asako Katsumata¹⁴, Hisano Kawahara¹⁵, Nusa Lampe¹⁶, Richard Marsh¹⁷, Katie Mills¹⁸, Kenji Mitsumoto¹⁹, Yasuhiko Moriwaki²⁰, Rustam Orujov²¹, Kristiina Pekkola²², Rashad Rasullu²³, Benoit Séguin²⁴, Akito-shi Sogabe²⁵, Karin Strömqvist Bååthe²⁶, Hitoshi Sugai²⁷, Meera Verma²⁸, Vivian Weerdesteyn²⁹

THRF Safe Falling Study

Upskilling Instructors & Teaching Safe Falling



Train-the-Trainer:

- 10 Allied Health Professionals with no Judo experiences
- 10 Judo Coaches with no experience working with older adults

DBfL Safe Falling Program:

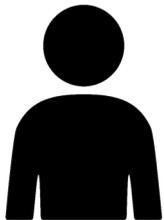
- 40 community-dwelling adults (65+)
- Effects on safe falling, frailty, physical function & balance

THRF Study: Train-The-Trainer

Inclusion Criteria:



Judo Coaches with no experience working with older adults, first degree black-belt (shodan), 2 years' experience coaching beginners, CAF (Coaching Accreditation Framework), at least Judo Assistant Coach certification



Allied Health Professionals working in Aged Care with no experience in Judo, appropriate tertiary qualification, at least 2 years' experience working with older adults

THRF Study: Train-The-Trainer

Intervention:

- 2-day workshop (13 hours) - teaching safe falling & working with older adults
- Practical attendance (8 sessions) - DBfL Safe Falling Program

Assessments:

1. Perceived Competence & Importance in teaching safe falling to older adults
2. Objective Knowledge in teaching safe falling to older adults
3. Safe Falling Skills (Strömqvist-Bååthe SBFC Test - English Version)

Timepoints:

- T1 (before 2-day workshop)
- T2 (after 2-day workshop)
- T3 (after practical sessions)

THRF Study: Train-The-Trainer

Day 1 - Workshop (6 hours):

- Need for intervention & exercise with older adults
- Physics of falling
- 4 fall scenarios (i.e. backwards, sideways, front & roll)
- Strength, balance, trip recovery & stable postures (shizentai & taisabaki)
- Floor transfer & crawling techniques
- Micro progression stages of DBfL ukemi & worksheets
- Equipment required (dojo, nursing homes, home visits)



THRF Study: Train-The-Trainer

Day 2 - Workshop (7 hours):

- Teaching & practicing: modified Ushiro ukemi
 modified Yoko ukemi
 modified Mae ukemi
 modified Mae mawari ukemi
- Eligibility criteria for participants & clients
- Review of DBfL Train-the-Trainer materials, website & videos



THRF Study: Train-The-Trainer

Practical Sessions:

- Attending 8-Week DBfL Safe Falling Program

THRF Study: Assessments

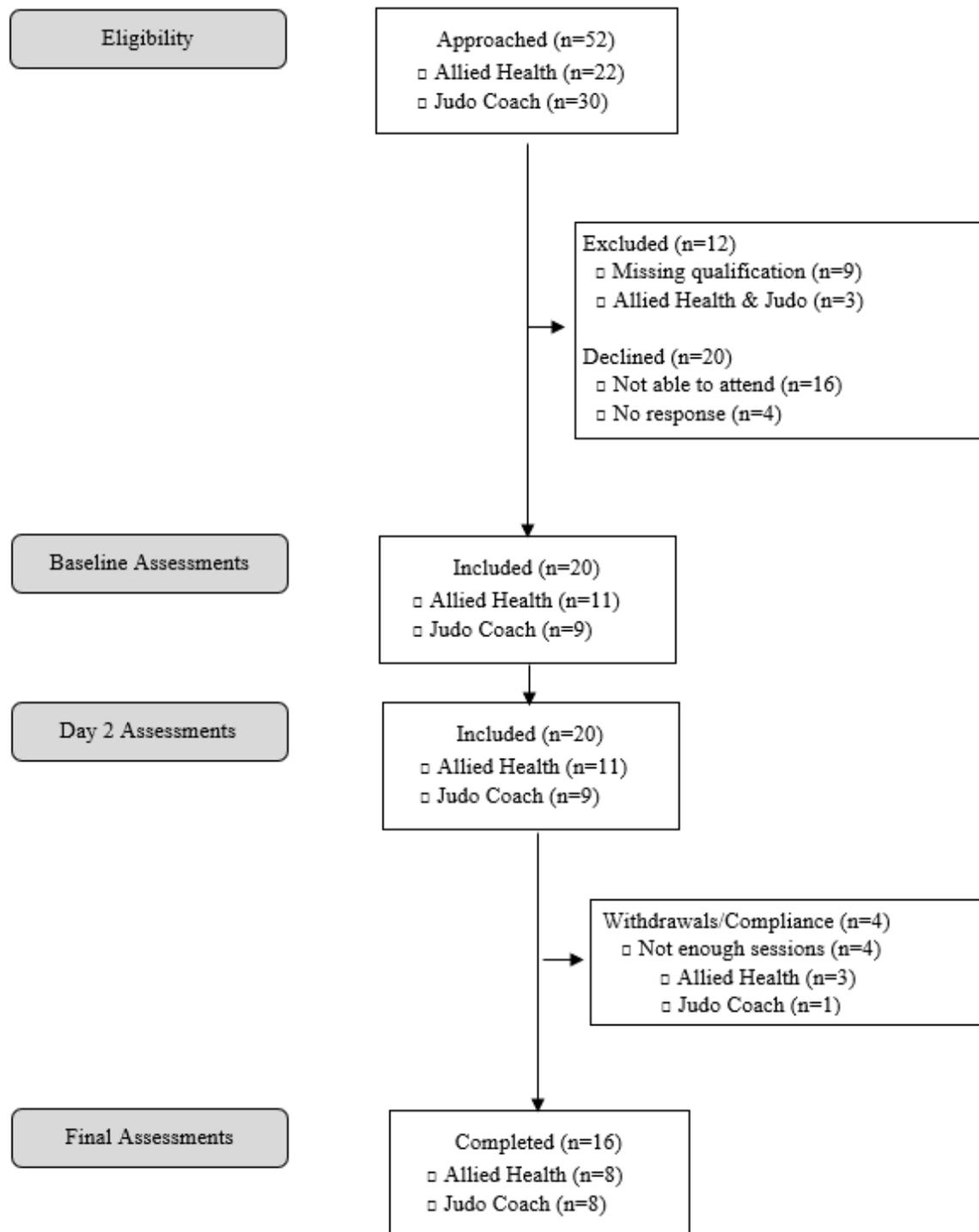
On a scale from 1 to 6 (1 = not competent to 6 = very competent), please rate your competence on each of the following skills:

Perceived Competence of Skill	Not Competent			Very Competent		
	1	2	3	4	5	6
1. Explaining to an older person the forces involved in a damaging fall						
2. Explaining to an older person the mitigation elements to reduce the impact of the fall (i.e. 3 key points)						
3. Explaining to an older person how to increase the surface area of a fall to reduce impact on an individual joint						
4. Explaining to an older person the 4 key directions/scenario of a serious fall						
5. Teaching an older person how to protect their head in the event of a fall						
6. Teaching an older person how to protect their hip in the event of a fall						
7. Teaching an older person how to protect their upper body - shoulder, elbow and wrist in the event of a fall						
8. Teaching an older person how to land safely from a backwards fall to minimise the impact from the fall						
9. Teaching an older person how to how to land safely from a sideways fall to minimise the impact from the fall						
10. Teaching an older person how to how to land safely from a front trip to minimise the impact from the fall						
11. Teaching an older person how to how to roll forwards from a front/side fall and land safely						
12. Teaching an older person how to move on the ground to a point of assistance						
13. Teaching an older person how to get up from the ground (or ask about stable postures)						

1. By the age of 80 men and women have a loss of bone mass in the range of
 - a. 5 to 10%
 - b. 15 to 45%
 - c. 50 to 80%
2. Which of the following statements apply to older adults (True or false):
 - a. Movement slows down and becomes more limited
 - b. Walking pattern (gait) becomes slower and shorter, walking becomes unsteady
 - c. Older people get tired more easily and have less energy
 - d. Strength (loss of muscle mass and quality), endurance and balance decreases
 - e. None of the above
 - f. All the above
3. Why does Frailty in older adults increase their risk of negative outcomes?
 - a. Frail elderly are more easily exhausted
 - b. A minor illness or fall can precipitate them into dependence
 - c. Frail elderly are overweight
4. Multi-component judo-based exercise programs may be helpful because (tick all answers that apply)
 - a. Resistance training improves muscle strength and mass, and addresses a significant problem - the age-related loss of muscle mass
 - b. Aerobic exercise increases blood flow to the heart, reduces the risk of heart attack or stroke, and boosts overall health
 - c. Balance helps to minimise the risk of falls and fractures
 - d. Flexibility training increases walking speed and step length, resulting in improved gait quality
5. The factors/forces that affect the impact on the body of an inadvertent fall include
 - a. Head height from the floor
 - b. Acceleration, speed of the fall
 - c. Surface area of the contact points
 - d. Eccentric muscle strength (resistance)
 - e. Ability to prevent a fall
6. List three key principles of dynamic balance
 - a. _____
 - b. _____
 - c. _____
7. When falling backwards, intentionally or unintentionally, it is critical to protect
 - a. Head, by keeping the chin on the chest
 - b. Wrists, elbows and shoulders, by extending the arms outwards
 - c. Decelerating and rolling backwards until shoulders make contact with the surface
8. When doing a backward or sideways *ukemi*, which part of the body touches the mat last
 - a. Hands
 - b. Back
 - c. Shoulders
9. If falling sideways, you can go to the mat safely with a *yoko ukemi*, no matter which foot is in front
 - a. True
 - b. False
10. If you trip forwards, the most important way to complete a safe *mae/ukemi* requires you to
 - a. Safely discard whatever you are carrying
 - b. Raise your hands rapidly to protect your face
 - c. Lower yourself as close to the ground as possible before using your forearms to protect your face

“Strömquist - Båathe Test” - Measuring Falling Competence - Backwards:

- 1a) **How confident are you laying down on your back and lift your head from the mat (tuck chin in) and put your arms beside you (palms down) and then stand up again?**
 YES, SURE (go to 1b) UNSURE (stop test) NO/REFUSES (stop test)
- 1b) **Test-participant does the exercise – Lays down on the back, lifts the head of the mat and lays arms beside and then stands up again from the floor without help.**
 Successful (go to 2a) Cannot lift the head off the mat (stop test)
 Cannot get down on the mat (stop test) Cannot get up from the mat independently (stop test)
- 2a) **How confident are you sitting down on your buttocks (legs forward) and fall backward?**
 YES, SURE (go to 2b) UNSURE (stop test) NO/REFUSES (stop test)
- 2b) **Performs the exercise – Falls backward from sitting (legs forward) no instruction given:**
 Successful (go to 3a) Not rolling up with legs (stop test) Puts down hand/hands (stop test)
 Puts down elbow/lower arm/s (stop test) Does not hold up the head (stop test)
 Other injury prone maneuver: _____(stop test)
- 3a) **How confident are you falling backwards from a squatting position?**
 YES, SURE (go to 3b) UNSURE (stop test) NO/REFUSES (stop test)
- 3b) **Performs the exercise – Falls backward from squatting (no instruction given)**
 Successful (go to 4a) Not rolling up with legs (stop test)
 Puts down hand/hands (stop test)
 Puts down elbow/lower arm/s (stop test) Not holding up head (stop test)
 Other maneuver which could be harmful: _____(stop test)
- 4a) **How confident are you falling backwards from a standing position?**
 YES, SURE (go to 4b) UNSURE (stop test) NO/REFUSES (stop test)
- 4b) **Performs the exercise – Falls backward from standing (no instruction given)**
 Successful (=4p) Does not bend knees (stop test) Not rolling up with legs (stop test)
 Puts down hand/hands (stop test) Puts down elbow/lower arm (stop test)
 Does not hold up head (stop test) “Crawling” instead of rolling backwards (stop test)
 Other injury prone maneuver: (describe) _____(stop test)



THRF Study: Train-The-Trainer

Mean age 50.44 ± 11.36 years (range 30–69 years) 37.5% (n=6) female



Judo Coaches (n=8)



Allied Health Professionals (n=8)

n=5 Physiotherapists n=3 Exercise Physiologists

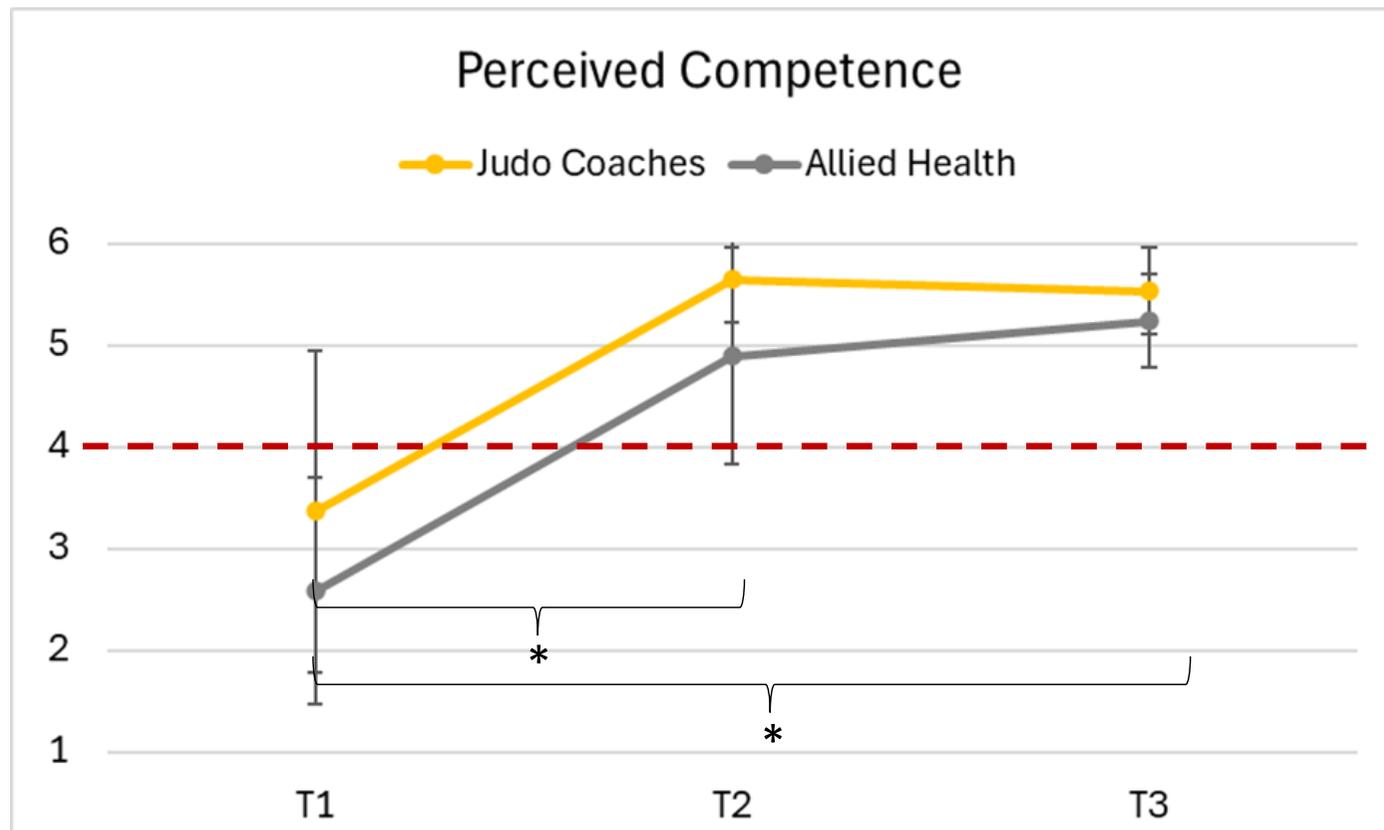
THRF Study: Train-The-Trainer

Withdrawals & Compliance

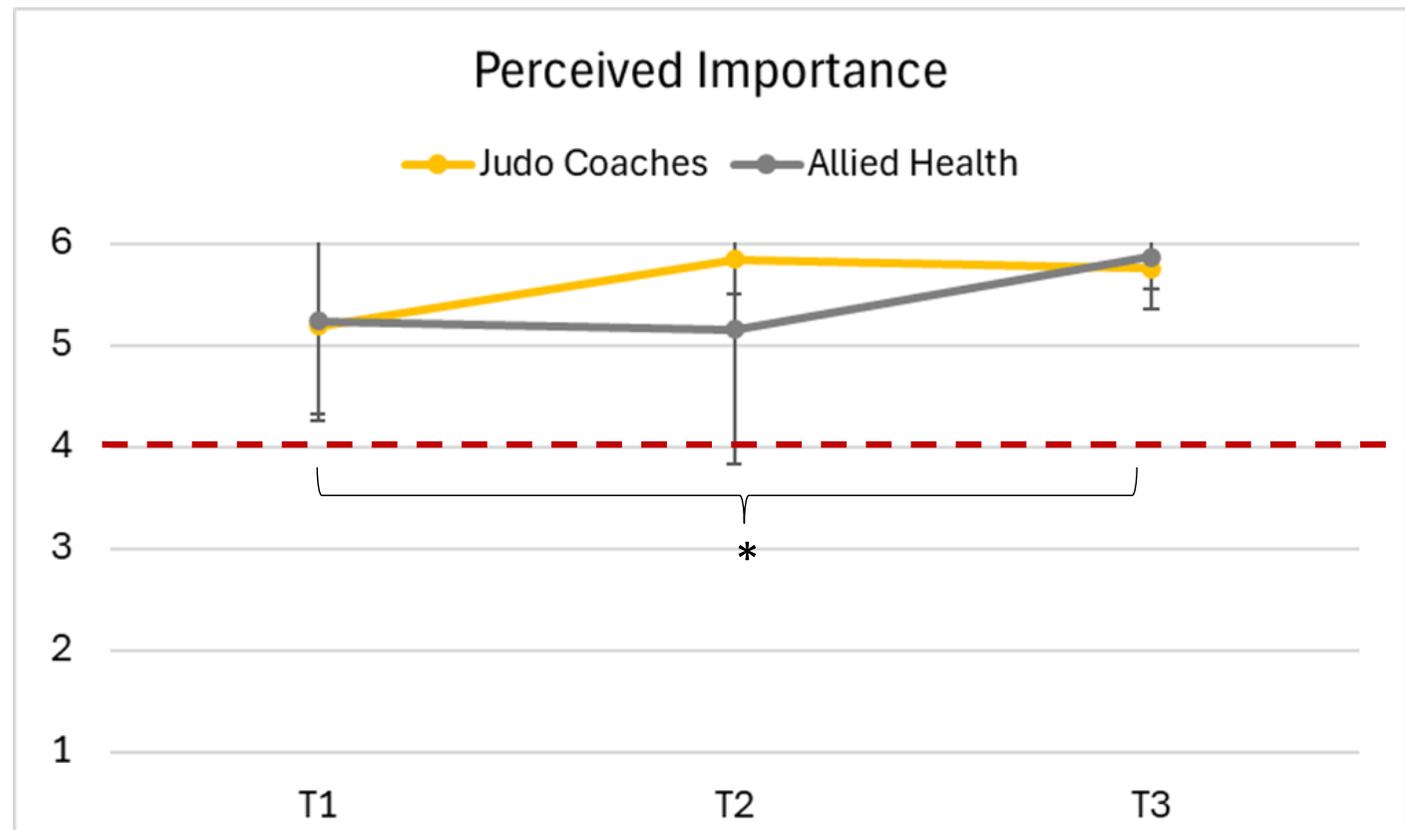
- No withdrawals - 3 Allied Health & 1 Judo Coach <70% practical sessions
- Total attendance:

2-day workshop	100%
Practical sessions	>75.0%
- Majority (n=10) attended all 8 practical sessions

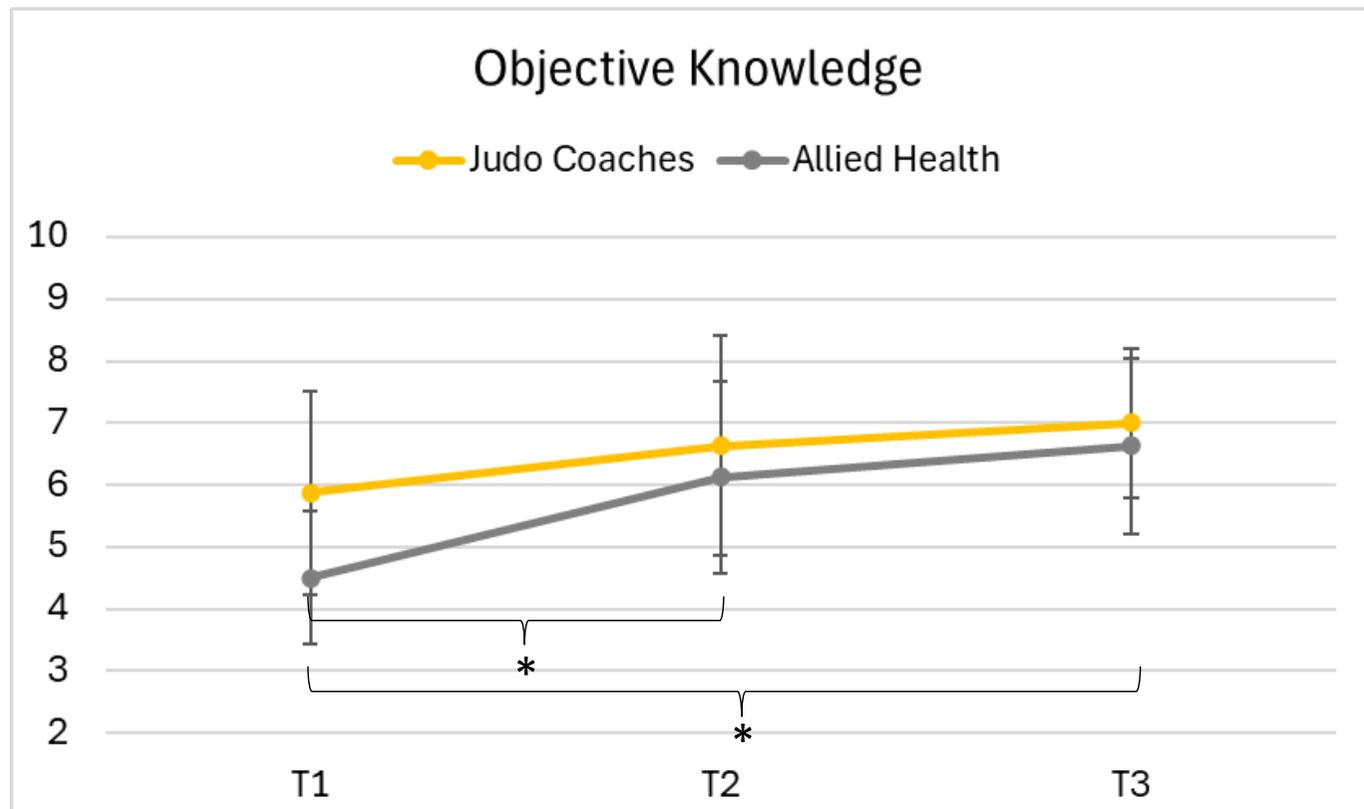
THRF Study: Train-The-Trainer



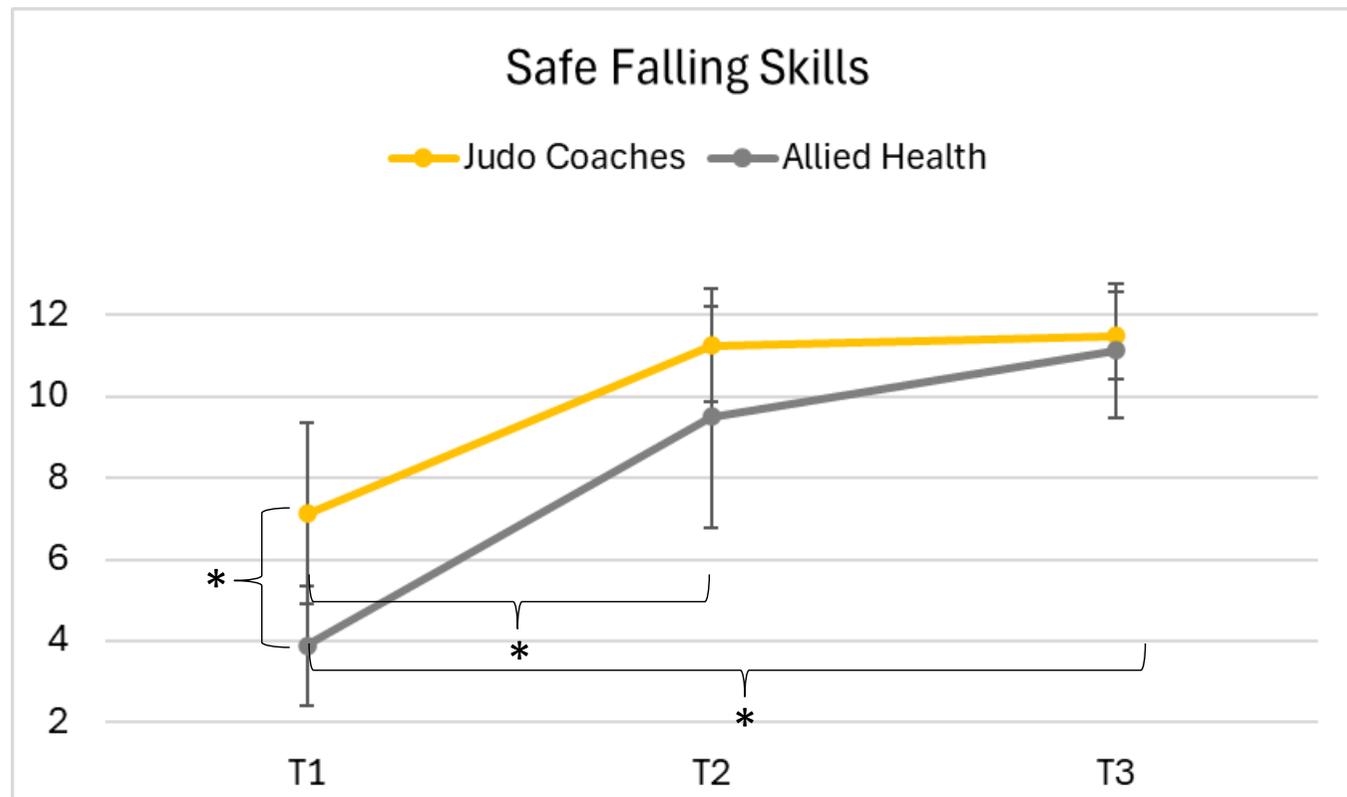
THRF Study: Train-The-Trainer



THRF Study: Train-The-Trainer



THRF Study: Train-The-Trainer



THRF Study: Train-The-Trainer

Significant improvements after the 2-day workshop:

- Perceived competence
- Objective knowledge
- Safe falling skills

Perceived importance:

- high at T1
- becoming significant only at T3

Most gains seen after 2-day workshop:

- Improvements maintained but not increasing after practical sessions

Group differences:

- Safe falling skills higher in Judo Coaches at T1 → reflecting prior Judo experience
- Allied Health Professionals closing gap at T2 & T3 reaching comparable safe falling skills

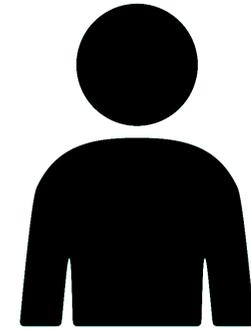
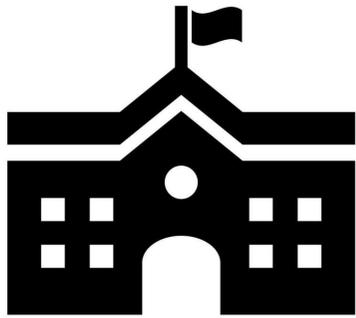


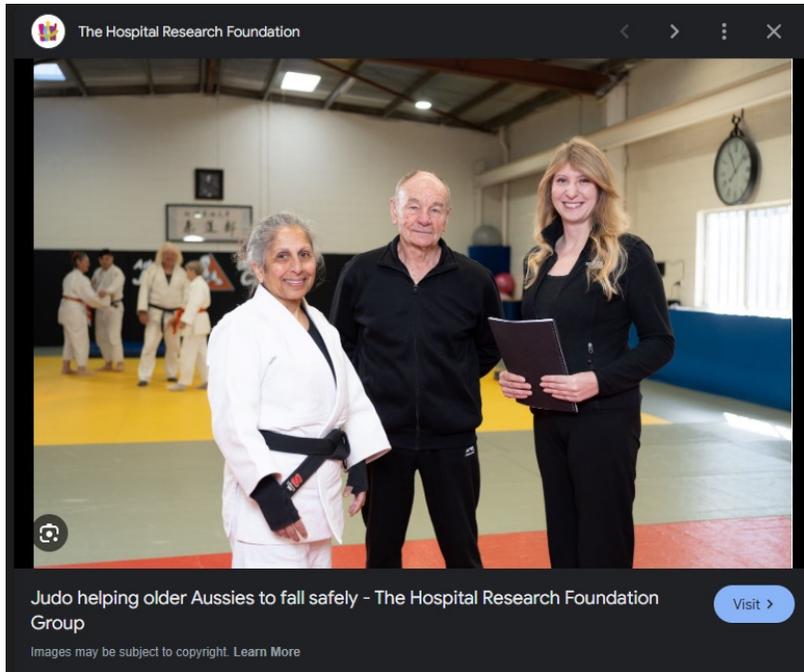
Total Train-
The-Trainer
(n=79)

n=57 
n=22 

Running DBfL:
n=25 
n=9 

Next Steps





“Besides safe landing skills, we’re also looking at outcomes like physical function, balance, strength, fear of falling and quality of life, so we’re actually closing the gap between falls prevention and how to come up from the ground.”



Knowing how to properly receive a throwing technique so the player can avoid injury is a key pillar of judo, with safe landing techniques focused on protecting the head, neck, shoulders, and hips.



Media & News

SA Health: [Using judo to reduce falls and frailty risk in older people | Translating Research](#)

THRF: [Judo helping older Aussies to fall safely - The Hospital Research Foundation Group](#)

[Could judo help older Aussies fall safely?](#)

['Ageing Well' projects share in almost \\$1 million - The Hospital Research Foundation Group](#)

Channel 10: [Channel 10 Dynamic Balance Adelaide University Judo Club 2024](#)

Channel 9: <https://www.facebook.com/share/v/1aKQ3LxuVZ/?mibextid=wwXlfr>

Channel 7: [Facebook](#)

Uni Adelaide: [A matter of life or death | Lumen | University of Adelaide](#)

Adelaide University Judo Club: [AUJC - Dynamic Balance For Life](#)
[Dynamic Balance for Life](#)



Thank You



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