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Upskilling Allied Health Professionals and Judo Coaches to Teach Safe Falling Skills to Older Adults: A Train-the-Trainer Intervention

Agathe Daria Jadczak[1] | Meera Verma[2] | Michael Headland[2] | Renuka Visvanathan[1,3]

[1]Adelaide Geriatrics Training and Research With Aged Care (G-TRAC), School of Medicine, College of Health, Adelaide University, Adelaide, South Australia, Australia | [2]Adelaide University Judo Club, Adelaide, South Australia, Australia | [3]Aged and Extended Care Services (Geriatric Medicine), The Queen Elizabeth Hospital, Central Adelaide Local Health Network, Adelaide, South Australia, Australia

Correspondence: Agathe Daria Jadczak (agathedaria.jadczak@adelaide.edu.au)

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ABSTRACT

Objectives: Learning safe falling skills, adapted from judo, is a promising strategy to reduce the risk of falls and fall-related injuries in older adults. This study aimed to upskill allied health professionals and judo coaches to teach safe falling skills to community-dwelling older adults.

Methods: A Train-the-Trainer program including a 2-day workshop (13 h) on teaching safe falling and how to work with older adults, followed by weekly attendance at an 8-week judo-based safe falling program for older adults to provide practical teaching experience. Outcomes included perceived competence and importance in teaching safe falling (6-point Likert Scale), objective knowledge (10 multiple-choice questions) and trainees' own safe falling skills (Strömqvist–Bååthe Falling Competence (SBFC) Test) assessed at three time points: pre-workshop (T1), post-workshop (T2) and post 8-week practical sessions (T3).

Results: Sixteen trainees (eight allied health professionals and eight judo coaches) participated (median age 50 years [IQR: 42–61], 38% female). Perceived competence, objective knowledge and safe falling skills improved significantly after the workshop (T2, $p < 0.05$) and remained high after the practical sessions (T3) when compared to T1. Perceived importance improved after the full Train-the-Trainer program (T3, $p = 0.02$). Judo coaches scored higher overall in safe falling ($p = 0.01$) than allied health professionals, but both groups demonstrated similar improvements over time ($p = 0.08$).

Conclusions: Improvements in perceived competence, knowledge and safe falling were observed among allied health professionals and judo coaches, with most gains occurring after the 2-day workshop. This Train-the-Trainer program may support broader implementation of safe falling training across community and clinical settings.

1 | Introduction

Falls are a leading cause of injury and loss of independence among older adults [1]. There is strong evidence that exercise and fall prevention programs can reduce the risk of falls in older adults [2, 3]. However, only a small number of programs specifically focus on what to do during a fall and how to minimise harm and injury when a fall occurs [4–6]. Safe falling techniques, adapted from the sport of judo, have emerged as a promising strategy to augment falls injury prevention programs [7]. These techniques have been modified to teach older adults how to land safely to reduce injury from falling [7].

Previous research has demonstrated that judo-based safe falling programs can be delivered safely and effectively to older adults up to 87 years of age, even if they do not have prior judo experience

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[4, 5]. These programs not only increased strength, balance and mobility [4] but also improved safe falling skills [5, 6, 8]. In addition, a Dutch study examined a 5-week judo-based safe falling obstacle program (the Nijmegen Falls Prevention Program) and reported a 46% reduction in fall incidence, suggesting that such programs can also impact on fall incidence [9], with our previous research showing benefits also for frailty risk [4]. Despite these positive outcomes, relatively few studies have investigated strategies to upskill judo coaches to teach older adults, and diversify the disciplines of instructors who can teach safe falling, important if safe falling programs are to be implemented more widely [8]. Upskilling a larger number of instructors would enable more older adults to benefit from these programs while potentially reducing injury severity and the associated burden on the healthcare system [7].

A Train-the-Trainer program was developed, in collaboration with two experienced judo coaches, a physiotherapist and a researcher, to address this gap by upskilling allied health professionals with no experience in judo and judo coaches with no experience working with older adults.

The aim of this study was to investigate the effect of participation in our newly developed Train-the-Trainer program on trainees' perceived importance and competence in teaching safe falling to older adults, their objective knowledge and trainees' own safe falling skills.

2 | Methods

2.1 | Study Design

The study used a pre-/post-design with repeated measures conducted at three time points (T1: pre-workshop, T2: post-workshop, T3: post 8-week practical sessions) between June 2024 and July 2025. Ethics approval was obtained from the Adelaide University Human Research Ethics Committee (H-2024-057). The trial was registered with the Australian New Zealand Clinical Trials Registry (ACTRN12624000619549) prior to trainee enrolment. The study was conducted at the Adelaide University Judo Club (AUJC) in Thebarton, Adelaide, South Australia.

2.2 | Consumer Advisory Group

A consumer advisory group (CAG) including one former research participant, two community-representative older adults, one judo coach and two physiotherapists was engaged during this study. The CAG met twice per year to guide the development of this study and helped with promotion to ensure recruitment, data interpretation, manuscript development and planning dissemination strategies.

2.3 | Participants

Two professional groups were included.

Judo coaches were eligible if they reported no experience working with older adults, held a minimum of first-degree black belt (shodan), had at least 2 years of experience coaching beginners and held a CAF (Coaching Accreditation Framework) Judo Assistant Coach certification as a minimum.

Allied health professionals (i.e., physiotherapists, exercise physiologists or occupational therapists) were eligible if they worked in aged care, had an appropriate tertiary qualification and at least 2 years' experience working with older adults.

2.4 | Recruitment

Recruitment was conducted between May 2024 and May 2025. Allied health professionals were recruited using a study flyer distributed in various aged care organisations, whereas judo coaches were recruited through the network of judo clubs in South Australia and interstate.

Trainees who expressed interest were contacted via phone by the research team, who screened for eligibility and answered any questions. A participant information sheet (PIS) and consent form were then sent via email to eligible and interested trainees. Trainees were enrolled if they met all eligibility criteria and provided written informed consent prior to study start.

2.5 | Intervention

The Train-the-Trainer program included a 2-day workshop (total of 13 h) with focus on working with older adults and teaching safe falling, followed by weekly attendance at an 8-week judo-based safe falling program for older adults (i.e., eight sessions) to provide practical teaching experience. Details of the Train-the-Trainer program are provided in File S1. Both professional groups attended at the same time.

Practical sessions were conducted on tatami mats under the supervision of experienced Dynamic Balance for Life (DBfL) instructors. Older adults provided medical clearance prior to participation, and safe falling skills were taught using a micro-progression approach with an approximately 4:1 participant-to-instructor ratio. Trainees observed program delivery, participant progression and instructor teaching strategies, while assisting instructors where appropriate. No adverse events were reported.

Interstate judo coaches had the option of attending the practical sessions virtually via a live video link, whereas all trainees attended the 2-day workshop in person.

2.6 | Measures

Baseline data including age, sex, professional group (i.e., allied health professional or judo coach) and experience in working with older adults or teaching judo were collected. Assessments were conducted by an experienced researcher and included:

Perceived importance and competence in teaching safe falling to older adults assessed across 13 skills using a 6-point Likert Scale (1 = not important/competent, 6 = very important/competent) (File S2). The scale was adapted from the Exercise and Physical Activity Competence Questionnaire (EPACQ), previously used

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to self-assess fundamental competencies related to exercise prescription among medical trainees [10]. Items were modified to include skills related to teaching safe falling to older adults while keeping the original 6-point Likert scale. Consistent with the original EPACQ, a mean score of ≥ 4 was considered as perceived competence or importance. Internal consistency of the adapted scales showed Cronbach's alpha of 0.970 for perceived competence and 0.969 for perceived importance.

Objective knowledge of teaching safe falling skills to older adults using 10 multiple choice questions (File S3). Each correctly answered question was awarded one point, resulting in a total score ranging from 0 to 10, with higher scores indicating greater objective knowledge. Questions were developed and reviewed by the Train-the-Trainer instructor team to ensure alignment with the program content.

The Strömqvist–Bååthe Falling Competence (SBFC) Test [11] is a newly developed tool designed to evaluate safe falling skills in both beginners and advanced trainees. The test assesses three falling directions (i.e., backwards, sideways, front) on a 0–4 scale per direction (total score range 0–12) with higher scores indicating better safe falling skills [6, 11]. The SBFC test was conducted on tatami mats by the same assessor (ADJ) at T1, T2 and T3. The first author (ADJ) is a researcher, accredited exercise scientist and accredited DBfL instructor who was trained in administrating the SBFC test by one of the test developers. Inter-rater and intra-rater reliability were not formally assessed. There was no blinding to assessment time points.

An open-ended question at T2 and T3 asked trainees which Train-the-Trainer segments were most useful in building confidence to teach safe falling to older adults.

All assessments at T1 and T2 were conducted in person. At T3, five trainees (interstate judo coaches) completed the competence and importance survey and objective knowledge test via email on the day and prior to their assessment. During the SBFC test, instructions were read aloud and trainees' safe falling skills were observed and scored live via Zoom, with assessment conducted in their dojos on tatami mats following the same assessment protocol and scoring criteria as in-person assessments.

2.7 | Compliance

Trainees were deemed to be compliant and were included in the analyses if they attended the 2-day workshop in person, and at least 70% of the weekly required practical sessions (i.e., six out of eight sessions) either virtually or in person. This compliance threshold was prespecified prior to study commencement.

2.8 | Statistical Methods

Descriptive data are presented as median and interquartile range (IQR), and as frequencies and percentages for categorical variables at each time point. Independent *t*-tests were used to examine differences between judo coaches and allied health professionals at baseline and in terms of compliance (i.e., number of practical sessions attended). Independent *t*-tests were also used to assess differences in outcomes between virtual and in-person attendance of the practical sessions for the overall sample. For the subgroup of judo coaches, a Mann–Whitney *U* test was used to assess differences between in-person and virtual attendees.

Linear mixed-effects models were used to examine changes in individual outcomes over time while accounting for repeated measures within trainees. Fixed effects included time point (T1, T2, T3), professional group (allied health professional or judo coach) and the interaction between time point and professional group. Repeated observations were clustered within trainees (ID) using an unstructured covariance matrix. Parameters were estimated using restricted maximum likelihood (REML) with Satterthwaite approximation for degrees of freedom. Pairwise comparisons of estimated marginal means were performed using the least significant difference (LSD) adjustment. No outcome data were missing for trainees included in the analyses. Assumptions of normality of residuals and homoscedasticity were found to be upheld on inspection of histograms and scatter plots.

The statistical software SPSS version 29 (IBM Corporation. Armonk, NY) was used. The level of statistical significance was set at $p < 0.05$.

Responses to the open-ended questions were analysed using inductive content analysis [12]. All 16 trainees provided responses at T2, and 15 trainees provided responses at T3. Participants provided written responses as part of the survey, which were then entered by a research assistant into the study database exactly as written. One researcher (ADJ) reviewed all responses, generated initial codes and grouped these into higher order categories. As coding was conducted by a single researcher, inter-coder disagreement resolution was not applicable. Findings were reported descriptively.

3 | Results

3.1 | Recruitment

Of the 52 individuals who expressed interest (22 allied health professionals and 30 judo coaches), 20 opted out (39%): four did not respond (8%) and 16 (31%) were unable to attend either the 2-day workshop or the eight weekly practical sessions (Figure 1). An additional 12 individuals (23%) were excluded as they did not meet the eligibility criteria. Of these, five allied health professionals did not meet the minimum 2 years' experience working with older adults ($n = 2$) or had previous judo experience ($n = 3$), while four judo coaches had either experience working with older adults ($n = 1$) or did not hold a minimum first-degree black belt (shodan) ($n = 3$). Three were both practising allied health professionals and judo coaches, resulting in 20 trainees taking part in this study (11 allied health professionals and 9 judo coaches).

3.2 | Compliance

All 20 trainees completed the 2-day workshop. However, four trainees (three allied health professionals and one judo coach)

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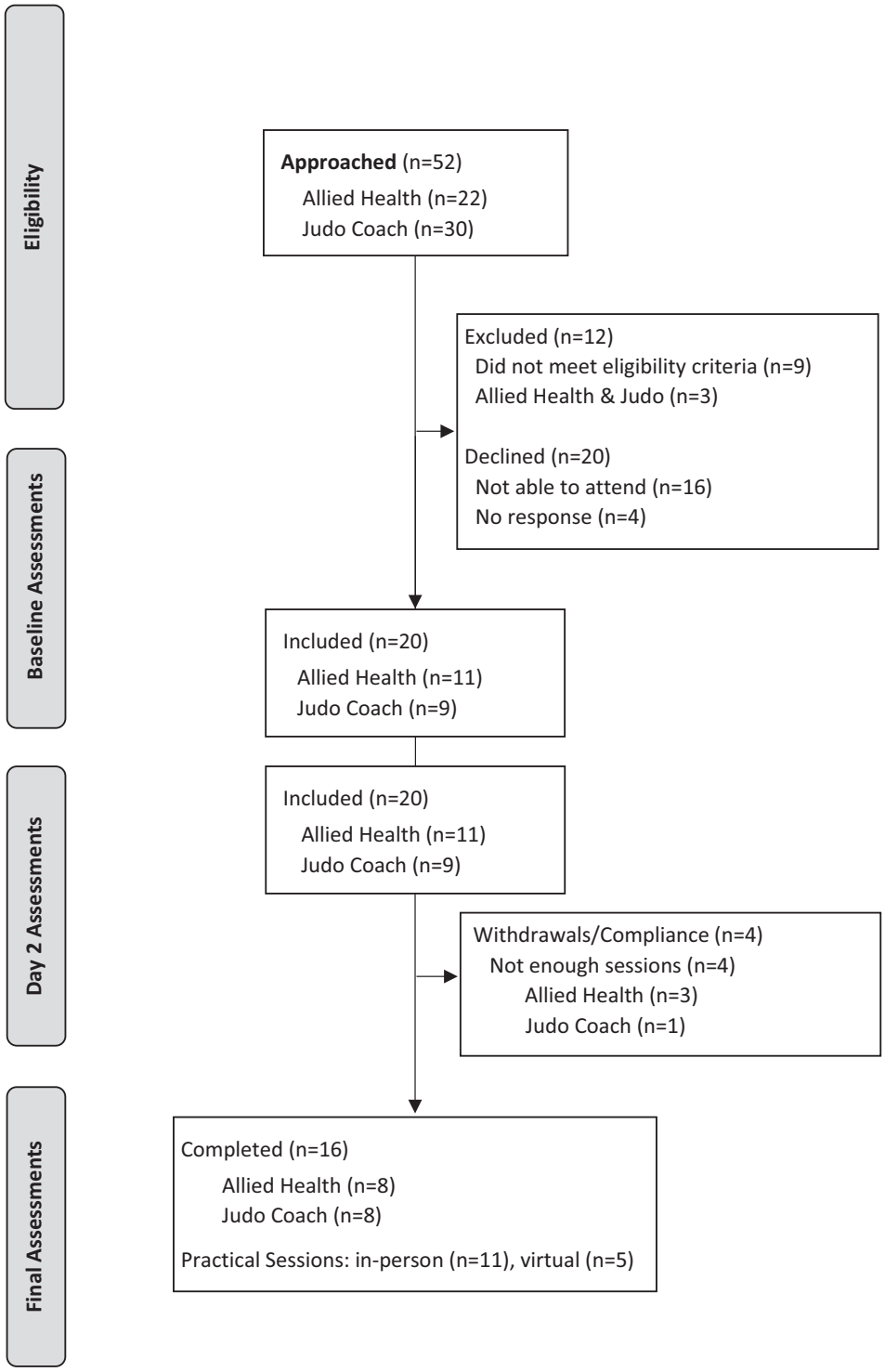


FIGURE 1 | Flow diagram.

were non-compliant and were excluded from the analyses, as they attended < 70% of the required practical sessions during the 8-week judo-based safe falling program (less than six of eight sessions). Of the remaining 16 trainees, 10 (63%) attended all eight practical sessions, whereas the other six (38%) attended 6–7 sessions. Six of the eight judo coaches were from interstate and attended the practical sessions virtually, whereas all eight allied health professionals attended the sessions in person. There were no withdrawals.

3.3 | Participants

A total of 16 trainees (eight allied health professionals and eight judo coaches) were included in the analyses (median age 50 years [IQR: 42–61], 38% female). All judo coaches had experience teaching beginners, ranging from 1 year ($n = 1$) to 3 or more years ($n = 7$). Among allied health professionals ($n = 8$), five were physiotherapists and three were exercise physiologists. All had been practising for 3 or more years with at least 2 years'

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experience working with older adults (seven had 3 or more years' experience).

No baseline differences were found between allied health professionals and judo coaches in age ($p = 0.06$), perceived importance ($p = 0.92$), perceived competence ($p = 0.27$), objective knowledge ($p = 0.07$) or number of practical sessions attended ($p = 0.71$). However, baseline safe falling skills differed ($p = 0.004$), with judo coaches (7.13, 95% CI 5.26, 8.99) scoring higher than allied health professionals (3.88, 95% CI 2.66, 5.09).

No differences were found between in-person versus virtual attendance of the practical sessions ($p > 0.05$) for any of the outcomes at T3, for both the overall sample and judo coaches only.

3.4 | Outcome Measures

3.4.1 | Perceived Importance

Perceived importance changed significantly over time ($p = 0.02$) with overall mean scores increased from 5.22 (T1: 95% CI 4.75, 5.61) to 5.50 (T2: 95% CI 4.97, 5.89) and 5.81 (T3: 95% CI 5.62, 5.96), indicating high perceived importance from the start of the Train-the-Trainer program (mean score ≥ 4). Pairwise comparisons showed a significant increase from T1 to T3 ($p = 0.01$), whereas the increase from T1 to T2 ($p = 0.06$) and T2 to T3 ($p = 0.21$) was not significant (Table 1).

Both allied health professionals and judo coaches showed similar levels and changes across all time points, with no significant main effect of group ($p = 0.60$) or group and time interaction ($p = 0.06$) (Tables 1 and 2).

Allied health professionals' scores changed from 5.24 (T1: 95% CI 4.54, 5.75) to 5.16 (T2: 95% CI 4.22, 5.86) and 5.87 (T3: 95% CI 5.63, 6.00), while judo coaches' scores changed from 5.19 (T1: 95% CI 4.56, 5.70) to 5.85 (T2: 95% CI 5.60, 6.00) and 5.76 (T3: 95% CI 5.47, 5.96) (Figure 2).

3.4.2 | Perceived Competence

Perceived competence changed significantly over time ($p < 0.001$), with overall mean scores increasing from 2.98 (T1: 95% CI 2.24, 3.71) to 5.28 (T2: 95% CI 4.81, 5.75) and 5.39 (T3: 95% CI 5.15, 5.63), indicating that perceived competence reached an acceptable threshold (mean score ≥ 4) following the 2-day workshop (T2) and was maintained through the practical sessions (T3). Pairwise comparisons confirmed that scores were significantly higher at T2 and T3 compared to T1 (both $p < 0.001$), while there was no significant difference between T2 and T3 ($p = 0.51$) (Table 1).

Both allied health professionals and judo coaches showed similar levels and changes across all time points, with no significant main effect of group ($p = 0.11$) or group and time interaction ($p = 0.38$) (Tables 1 and 2).

Allied health professionals' scores increased from 2.59 (T1: 95% CI 1.66, 3.51) to 4.90 (T2: 95% CI 4.01, 5.80) and 5.24 (T3: 95% CI 4.85, 5.63).

For judo coaches, scores increased from 3.37 (T1: 95% CI 2.04, 4.69) to 5.65 (T2: 95% CI 5.30, 6.01), and 5.54 (T3: 95% CI 5.19, 5.89) (Figure 2).

3.4.3 | Objective Knowledge

Objective knowledge changed significantly over time ($p < 0.001$), with overall mean scores rising from 5.19 at T1 (95% CI 4.38, 5.99) to 6.38 at T2 (95% CI 5.51, 7.24) and 6.81 at T3 (95% CI 6.13, 7.49). A significant increase was observed

TABLE 1 | Post hoc comparisons of outcome measures across time points.

Outcome	Comparison	Mean difference	95% CI	*p*
Perceived competence	T1–T2	−2.30	−2.98, −1.63	< 0.001*
	T1–T3	−2.41	−3.08, −1.75	< 0.001*
	T2–T3	−0.11	−0.46, 0.24	0.51
Perceived importance	T1–T2	−0.29	−0.59, 0.02	0.06
	T1–T3	−0.60	−1.03, −0.16	0.01*
	T2–T3	−0.31	−0.80, 0.19	0.21
Objective knowledge	T1–T2	−1.19	−1.96, −0.41	0.005*
	T1–T3	−1.63	−2.48, −0.77	0.001*
	T2–T3	−0.44	−1.55, 0.67	0.41
Safe falling skills	T1–T2	−4.88	−6.31, −3.44	< 0.001*
	T1–T3	−5.81	−7.14, −4.49	< 0.001*
	T2–T3	−0.94	−1.97, 0.09	0.07

Abbreviation: CI, confidence interval.
*Significant.

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TABLE 2 | Outcome measures by professional group at T1, T2 and T3.

Outcome		Judo coaches ($n=8$)		Allied health ($n=8$)		
		Mean	95% CI	Mean	95% CI	*p*
Perceived competence	T1	3.37	2.04–4.69	2.59	1.66–3.51	0.27
	T2	5.65	5.30–6.01	4.90	4.01–5.80	0.09
	T3	5.54	5.19–5.89	5.24	4.85–5.63	0.20
Perceived importance	T1	5.19	4.47–5.92	5.24	4.43–6.05	0.92
	T2	5.85	5.56–6.14	5.16	4.05–6.28	0.18
	T3	5.76	5.43–6.09	5.87	5.60–6.13	0.57
Objective knowledge	T1	5.88	4.50–7.25	4.50	3.61–5.39	0.07
	T2	6.63	5.15–8.10	6.13	4.83–7.42	0.56
	T3	7.00	6.00–8.00	6.63	5.45–7.80	0.58
Safe falling skills	T1	7.13	5.26–8.99	3.88	2.66–5.09	0.004*
	T2	11.25	10.09–12.00	9.50	7.22–11.78	0.13
	T3	11.50	10.61–12.00	11.13	9.75–12.00	0.60

Note: p values represent between-group comparisons (judo coaches vs. allied health professionals) at each time point.
Abbreviations: CI, confidence interval; *n*, number.
*Significant.

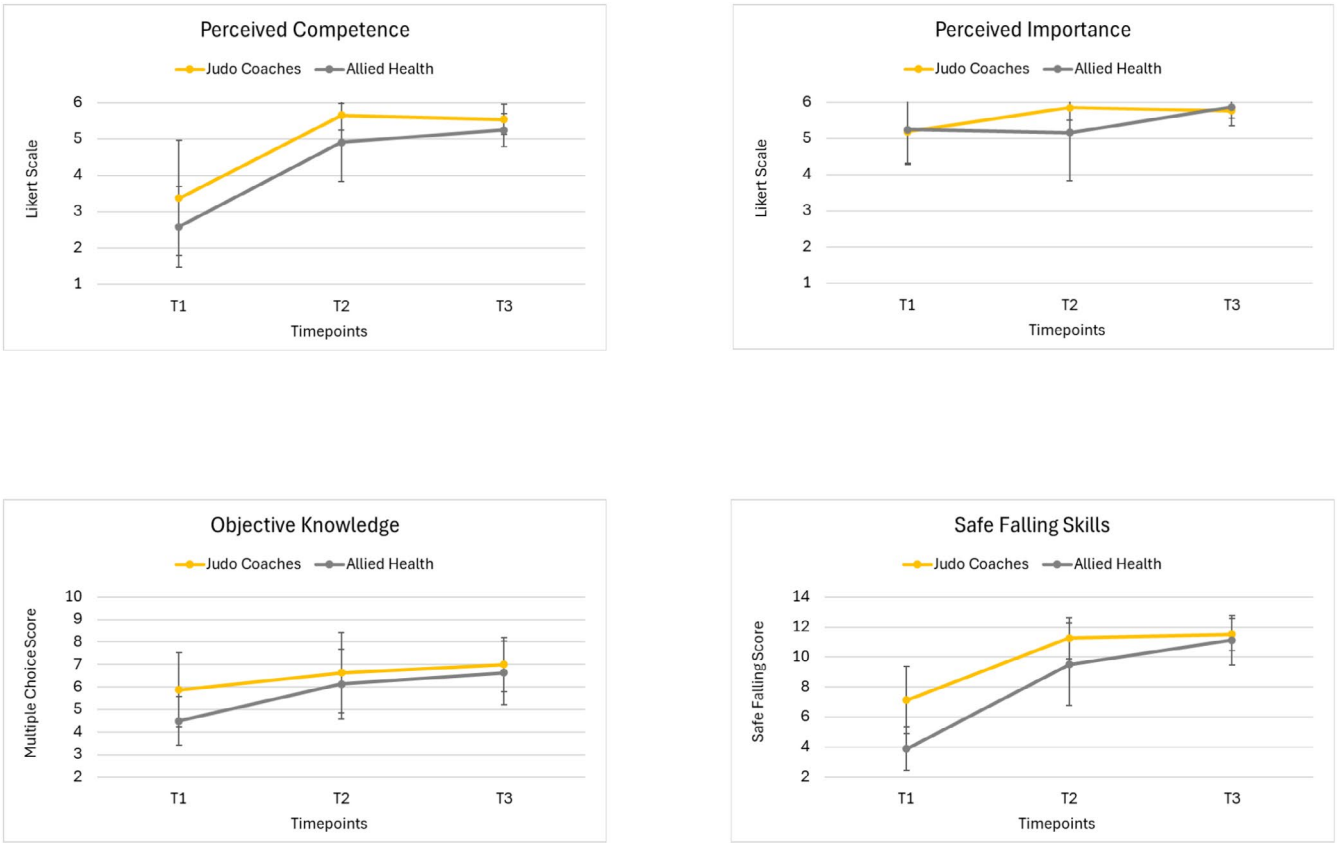


FIGURE 2 | Estimated marginal means and 95% confidence intervals for outcome measures at T1, T2 and T3 by professional group. Exact means and confidence intervals are reported in Tables 1 and 2.

from T1 to T2 ($p=0.005$) and from T1 to T3 ($p=0.001$). The change between T2 and T3 was not significant ($p=0.41$) (Table 1).

Neither the main effect of group ($p=0.18$) nor the group and time interaction ($p=0.28$) was significant, indicating similar levels and changes across both groups across all time points (Tables 1 and 2).

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Allied health professionals' objective knowledge scores went from 4.50 at T1 (95% CI 3.61, 5.39) to 6.13 at T2 (95% CI 4.83, 7.42) and 6.63 at T3 (95% CI 5.45, 7.80).

Judo coaches' scores increased from 5.88 at T1 (95% CI 4.50, 7.25) to 6.63 at T2 (95% CI 5.15, 8.10) and 7.00 at T3 (95% CI 6.00, 8.00) (Figure 2).

3.4.4 | Safe Falling Skills

Safe falling scores changed significantly over time ($p < 0.001$), increasing from 5.50 at T1 (95% CI 4.18, 6.82) to 10.38 at T2 (95% CI 9.16, 11.59) and 11.31 at T3 (95% CI 10.59, 12.00).

Scores were significantly higher at both T2 and T3 compared to T1 (both $p < 0.001$), while the increase from T2 to T3 was not statistically significant ($p = 0.07$), suggesting most improvements in safe falling skills happened following the 2-day workshop.

A significant main effect of group was observed ($p = 0.01$), with judo coaches recording higher safe falling scores overall, including at baseline ($p = 0.004$) when compared to allied health professionals. The interaction between time and group, however, was not statistically significant ($p = 0.08$) indicating similar improvements for both groups over time (Tables 1 and 2).

Allied health professionals' safe falling scores increased from 3.88 at T1 (95% CI 2.66, 5.09) to 9.50 at T2 (95% CI 7.22, 11.78) and 11.13 at T3 (95% CI 9.75, 12.00).

Judo coaches improved from 7.13 at T1 (95% CI 5.26, 8.99) to 11.25 at T2 (95% CI 10.09, 12.00) and 11.50 at T3 (95% CI 10.61, 12.00) (Figure 2).

3.5 | Open-Ended Question

Both allied health professionals ($n = 4$) and judo coaches ($n = 5$) most frequently highlighted the practical components, including practising their own safe falling skills and working through micro-progressions as useful for building confidence in teaching safe falling to older adults.

Judo coaches ($n = 4$) specifically valued understanding the differences between sport judo and safe falling for older adults, with one judo coach noting the importance of the 'principle of reducing height from fall, speed, direction and severity of a fall' (Judo Coach, T2). Judo coaches emphasised the need to modify safe falling techniques and found the early practical sessions (Session 1–3) helpful for shifting away from traditional 'judo coach thinking' to focus on slowing down falls. Clear teaching keywords and concepts (e.g., the 'elevator' concept) were especially appreciated by virtual attendees ($n = 4$) with some judo coaches ($n = 2$) noting benefits of attending in person.

Allied health professionals valued the structured breakdowns of each fall ($n = 4$), practising safe falling techniques themselves ($n = 3$) and opportunities to practise teaching ($n = 2$) during the 8-week safe falling program. Most allied health professionals ($n = 4$) appreciated the intensive training, repeated practice and observing older adults' improvements, with one allied health professional stating, 'watching participants improve was significant and motivating and made me feel confident to teach it' (Allied Health Professional, T3). Two allied health professionals expressed ongoing uncertainty about their teaching readiness at T3, indicating a need for further practical sessions, which was not reported by judo coaches.

4 | Discussion

While previous studies have explored Train-the-Trainer approaches for safe falling programs, research evaluating the upskilling of allied health professionals and judo coaches to teach judo-based safe falling skills to community-dwelling older adults remains limited. Improvements in perceived importance, perceived competence, objective knowledge and trainees' own safe falling skills were observed, with most gains occurring right after the 2-day workshop and maintained during the practical sessions. Judo coaches started with higher safe falling skills than allied health professionals. No differences were observed between those attending practical sessions in person versus virtually for any outcome.

Even a relatively short, intensive 2-day workshop was followed by improvements in trainees' ability to teach safe falling skills to older adults, with ongoing practical experience important for reinforcing both competence and skills, whether sessions were attended face-to-face or online.

Open-ended responses showed judo coaches built confidence mainly by adapting sport judo concepts for older adults, including modifying safe falling techniques and gaining practical teaching experience, particularly during the early sessions. Allied health professionals, on the other hand, valued structured progressions, clear teaching strategies and practice time. Two still felt they needed more practical sessions before being fully teaching-ready.

These results are consistent with prior literature showing that structured training of 4-16 h can improve instructors' knowledge, attitudes and skills related to delivering fall prevention programs in healthcare settings [13]. Given the novel nature of judo-based safe falling programs, our study extends the literature by demonstrating that both allied health professionals and judo coaches can be successfully upskilled to teach safe falling skills to older adults. Similar approaches have been reported in the Swedish FallFitness program, which trained older exercise leaders using a 3-day workshop combined with weekly consultations during program delivery [8], as well as by Ciaccioni et al. [14, 15], who identified a need for additional education to support judo coaches working with older adults and developed a structured online educational program for this population. Together, these findings show the potential to train a broader professional workforce and support the value of structured instructor training for safe falling programs. The findings of Ciaccioni et al. [14, 15] also align with our qualitative findings, where judo coaches reported gaining confidence through a better understanding of how safe falling training for older adults differs from traditional sport judo.

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We found no differences between allied health professionals and judo coaches for perceived competence, perceived importance or objective knowledge at any time point, suggesting that both groups benefited similarly from the Train-the-Trainer program. As expected, judo coaches demonstrated higher safe falling skill levels throughout, likely reflecting prior experience. However, allied health professionals showed clear improvements over time, reducing the gap between the groups by the end of the program, suggesting that the program content was accessible across both professional groups. Despite these improvements, allied health professionals' scores remained somewhat lower than those of judo coaches, and their qualitative feedback indicated that additional practical training could help build teaching confidence and skills. This aligns with previous evidence that educational interventions work best when the content aligns with trainees' starting skills and their clinical setting [13].

When comparing outcomes between trainees who attended practical sessions in person and those who participated virtually, no differences were found. This raises the possibility that at least some components of the Train-the-Trainer program could be delivered remotely, particularly for trainees who already have some familiarity with *ukemi*, such as judo coaches. However, because virtual attendance was only available to interstate judo coaches, comparisons between attendance modes should be interpreted with caution. Still, trainees' feedback made clear that hands-on, in-person sessions offer a quality of learning that is hard to replicate remotely [16]. For allied health professionals specifically, and trainees with no prior experience in *ukemi*, one practical strategy could be partnering with local judo clubs or coaches to support the practical side of their training.

Nevertheless, further research is required to determine whether virtual formats are sufficient, especially given the greater need for practical experience reported by allied health professionals.

Overall, the Train-the-Trainer program appears feasible and effective in upskilling professionals to deliver safe falling training to older adults. Importantly, this study extends the literature by focussing on trainees' outcomes and building workforce capacity to deliver safe falling training to older adults. As the evidence base for judo-based safe falling interventions keeps growing [17], having more trained instructors available could support broader implementation and complement existing falls prevention programs targeting falls and related injuries in older adults [18].

However, some areas for improvement were identified. Allied health professionals may particularly benefit from extra practical sessions to build their skills and confidence in teaching, which may improve translation into clinical practice.

4.1 | Limitations

A limitation of this study was that practical sessions were conducted in the late morning, which limited attendance for some trainees due to work commitments, as reflected by three allied health professionals becoming non-compliant. Future studies should consider offering sessions at more flexible times and further exploring virtual delivery. Virtual attendance was only available to interstate judo coaches, and therefore, comparisons between virtual and in-person attendance, which were not randomised, should be interpreted with caution. Another limitation was the relatively small sample size ($n = 16$), which may limit the generalisability of the findings. In addition, causal interpretation was not possible given the lack of a control group, and as participation was voluntary, trainees may have been particularly motivated or interested in safe falling training. Although prior judo experience for allied health professionals was screened for, experience in other martial arts or movement disciplines was not systematically collected. Safe falling scores approached the maximum possible score at T2 and T3, particularly among judo coaches, suggesting a potential ceiling effect. The follow-up period was limited to 8 weeks and does not provide information on longer term retention. Further research is needed to determine whether improvements in trainee outcomes translate into benefits for older adults.

5 | Conclusions

This study demonstrated improvements in perceived competence, objective knowledge and safe falling skills in both allied health professionals and judo coaches, with most improvements observed after the initial 2-day workshop. By increasing instructor capacity, this program has the potential to support wider implementation of safe falling training for older adults in both community and clinical settings, and may complement existing strategies to reduce falls and fall-related injuries in older adults. Further research is required to examine long-term outcomes, including the impact of instructor training on program delivery and participant outcomes, as well as the role of virtual training in supporting broader dissemination.

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Ethics Statement

This study received ethics approval from the Adelaide University Human Research Ethics Committee (H-2024-057).

Conflicts of Interest

A.D.J. delivered a 1-h theoretical segment on exercising safely with older adults during the 2-day workshop. Apart from this, A.D.J. was not involved in delivering the Train-the-Trainer program. A.D.J. distributed the questionnaires and assessed trainees' safe falling skills at T1, T2 and

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T3. M.V. and M.H., both judo coaches at the Adelaide University Judo Club (AUJC), were involved in delivering all other segments of the 2-day workshop as well as the practical sessions during the 8-week judo-based safe falling program. M.H. and M.V. were not involved in assessing or scoring trainees. R.V. has no conflicts of interest to declare.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **File S1:** Train-the-Trainer program details following the TIDieR (Template for Intervention Description and Replication) Checklist. **File S2:** Perceived competence and importance Likert scale questionnaire. **File S3:** Objective Knowledge Multiple Choice Questionnaire.

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