2ND INTERNATIONAL CONFERENCE OM SAFER FALLING FOR OLDER PEOPLE THROUGH JUDO.

ADAPTED UTILITARIAN JUDO
Japan, 12-13 Dicember 2024

Research Group: Research in Physical Activity, Quality of Life, and Physical Education

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ADAPTED UTILITARIAN JUDO

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Global Consensus Statement

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

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"(…) adaptation form of Judo which, on the foundations of Kodokan Judo, develops specific adapted motor skills that allow integrating norms and habits of life to contribute to the well-being of the older adult, providing **autonomy in personal, domestic, and social contexts**".

(DelCastillo-Andrés et al., 2016)

RESEARCH ON FALLS COMPETENCE BASED ON THE JUA PROGRAMME IN ADULT-ELDERLY PERSONS IN MAINTENANCE EXERCICE PROGRAM

02. Aims

General Objective

Evaluate and implement the effects of a fall teaching workshop based on the JUA program within maintenance gymnastics classes for older adults.

Specific Objectives

- **Measure fall competence using the Strömqvist-Bååthe Test, EVALUATING SELF-EFFICACY, MOTOR SKILLS, AND FALL TECHNIQUE in a sample of older adults after a fall teaching workshop based on the JUA program.**

- **Measure physical performance using the Short Physical Performance Battery Test, EVALUATING BALANCE, GAIT SPEED, AND LOWER LIMB STRENGTH in a sample of older adults after a fall teaching workshop based on the JUA program.**

03. Design and methodology
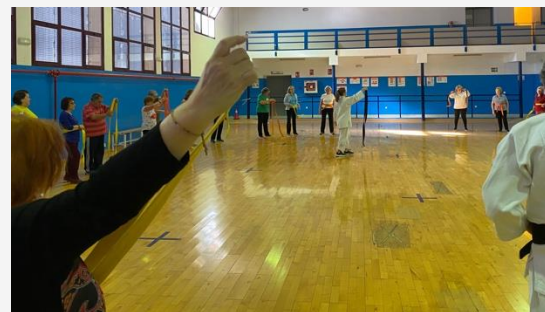
| Variable	EG (n=22)	CG (n=23)
Age	63 - 90 years (75.77 ± 7.12)	61 - 83 years (75.96 ± 5.09)
BMI	26.60-44.55 kg/m² (35.07 ± 4.71)	26.24-43.37 kg/m² (33 ± 3.98)
Muscle mass	15.3%-33.1% (22.23 ± 4.17%)	16.1%-29.1% (21.14 ± 3.82%)
Civil status	17.4% widowed and alone 26.1% married and accompanied	20.8% widowed and alone 12.5% widowed and accompanied
Occupation	21.7% housewife 8.7% retired teachers/modists Commercial, nurse and cleaner	58.3% housewife Teachers and cleaner

03. Design and methodology
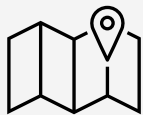
Tiro de Línea Sports Centre, Seville

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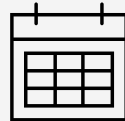
March to May 2024

12 sessions3 per week

60 minutes

Measurements
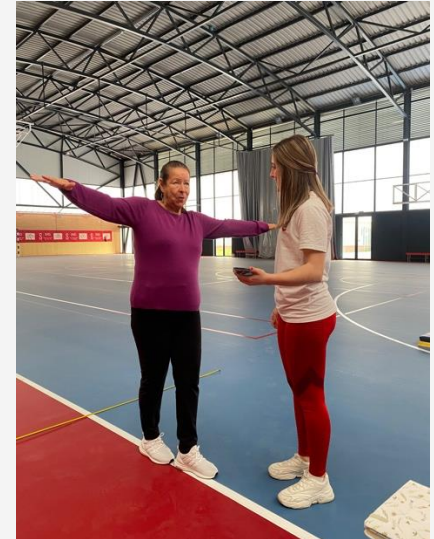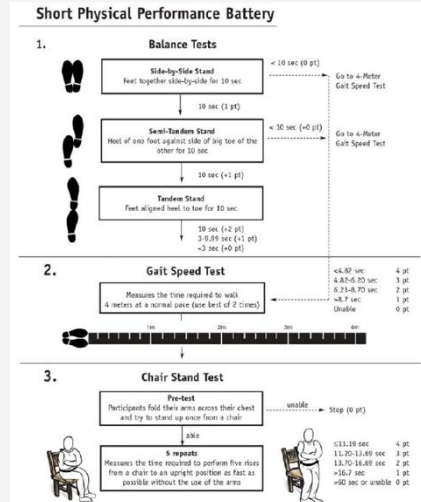
03. Design and methodology

Physical Performance: Short Physical Performance Battery (SPPB Test)

- ○ **Balance: Three positions (feet together, semi-tandem, tandem)**
- ○ **Gait Speed: Time to walk 4 meters**
- ○ **Lower Limb Strength: Sit and stand from a chair five times consecutively**

Scoring: Each test is scored from 0 to 4 points (de Fátima Ribeiro Silva et al., 2021).

03. Design and methodology

Falling competition: Strömqvist-Båthe Test (SBFC)

- **Self-efficacy**
- **The subject is asked, 'How confident are you...?' The answer determines whether the test is performed. This procedure is followed in both the backward (CA) and sideways (CL) fall.**
- **Motor skills and fall technique**
- **Once the subject has demonstrated self-efficacy, the test proceeds. The CA and CL are assessed**

✓Scoring: Each test is graded from 0 to 4 points.

(Arkkukangas et al., 2022)

04. Results and Discussion

Variable	EG					CG				
	Pre-Test		Post-Test			Pre-Test		Post-Test		
	$\bar{x}$ (DS)	Min-Máx	$\bar{x}$ (DS)	Min-Máx	p-valor	$\bar{x}$ (DS)	Min-Máx	$\bar{x}$ (DS)	Min-Máx	p-valor
Balance	1,82 (0,58)	0-2	1,95 (0,21)	1-2	,276	1,74 (0,44)	1-2	1,78 (0,42)	1-2	,655
Gait speed	4,00 (0,00)	4-4	4,00 (0,00)	4-4	1,000	3,96 (0,20)	3-4	4,00 (0,00)	4-4	,317
Lower limb strength	3,32 (1,04)	1-4	3,86 (0,46)	2-4	,010	3,09 (1,16)	1-4	3,74 (0,54)	2-4	,008
Motor skills and backward falling technique	0,91 (0,75)	0-2	2,64 (1,62)	0-4	<,001	0,96 (1,10)	0-4	0,48 (0,593)	0-4	,053
Motor skills and Lateral Falling technique	1,05 (0,89)	0-3	2,64 (1,62)	0-4	<,001	0,70 (1,02)	0-4	0,41 (0,50)	0-1	,131

Nota: $\bar{x}$ = media, DS= desviación típica, p<0.05 en la prueba Wilcoxon, CA= Caída hacia atrás, CL= Caída hacia delante.

SPPB

Variable	GE			GC		
	Pre-Test N (%)	*Post-Test N (%)*	p-valor	Pre-Test N (%)	Post-Test N (%)	p-valor
BALANCE						
0= <3.0 sec or does not try	2 (8,7)	-		-	-	
1=3.0 a 9.99 sec	-	1 (4,3)	,276	17 (70,8)	18 (75,0)	,655
2= 10 a 15 sec	20 (87,0)	21 (91,3)		6 (25,0)	5 (20,8)	
GAIT SPEED						
3= 4,82 a 6,20 sec	-	-	1,000	1 (4,2)		,317
4= <4,82	22 (95,7)	22 (95,7)		22 (91,17)	23 (95,8)	
GET UP AND SIT DOWN						
1= 16.7 a 60 sec	2 (8,7)	-		4 (16,7)	-	
2= 13.7 a 16.69 sec	3 (13,0)	1 (4,3)	,010	2 (8,3)	1 (4,2)	,008
3= 11.2 a 13.69 sec	3 (13,0)	1 (4,3)		5 (20,8)	4 (16,7)	
4= ≤11.19	14 (60,9)	20 (87,0)		12 (50,0)	18 (75,0)	

Note: N = subjects, p<0.05 Wilcoxon´s in the test.

Falling Competence (SBCT): SELF-EFFICIENCY

How sure are you of...?

EG: 56,5% to 73,9%
CG: 37,5%

EG : 8,7% to 60,9%
CG : 4,2%

EG : 4,3% to 56,5%
CG : 4,2%

"Strömqvist - Bathe Test" - measuring Falling Competence - Sideways:

1a) How confident are you laying down on your side, lift your head and roll from side to side?

- ☐ YES, SURE (go to 1b)
- ☐ UNSURE (stop test)
- ☐ NO/REFUSES (stop test)

1b) Performs the exercise - Lays down on the side, can lift head and roll from side to side.

- ☐ Successful (go to 2a)
- ☐ Cannot get down on the mat (stop test)
- ☐ Cannot lift the head off the mat (stop test)
- ☐ Cannot roll from side to side (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 sideways?

- ☐ YES, SURE (go to 2b)
- ☐ UNSURE (stop test)
- ☐ NO/REFUSES (stop test)

2b) Performs the exercise - Falls sideways from sitting down (legs forward) no instruction given:

- ☐ Successful (go to 3a)
- ☐ Puts down hand/hands (stop test)
- ☐ Does not hold up head (stop test)
- ☐ Falls on stomach (stop test)
- ☐ Hits the shoulder (stop test)
- ☐ Falls flat on the back (stop test)
- ☐ Other injury prone maneuver: (describe)_____ (stop test)

3a) How confident are you falling sideways from a squatting or one kneeling position (one knee up)?

- ☐ YES, SURE (go to 3b)
- ☐ UNSURE (stop test)
- ☐ NO/REFUSES (stop test)

3b) Falls sideways from squatting or kneeling position, no instruction given:

- ☐ Successful (go to 4a)
- ☐ Puts down hand/hands (stop test)
- ☐ Does not hold up the head (stop test)
- ☐ Falls on the stomach (stop test)
- ☐ Hits the shoulder (stop test)
- ☐ Falls flat on the back (stop test)
- ☐ Other injury prone maneuver: (describe)_____ (stop test)

4a) How confident are you falling sideways from a standing up position?

- ☐ YES, SURE (go to 4b)
- ☐ UNSURE (stop test)
- ☐ NO/REFUSES (stop test)

4b) Stands up and falls sideways, no instruction is given:

- ☐ Successful (=4p)
- ☐ Puts down hand/hands (stop test)
- ☐ Does not hold up the head (stop test)
- ☐ Falls on the stomach (stop test)
- ☐ Hits the shoulder (stop test)
- ☐ Falls flat on the back (stop test)
- ☐ Does not bend leg/s and lower center of gravity (stop test)
- ☐ Other injury prone maneuver: (describe)_____ (stop test)

POINTS BACKWARD FALL_____

Scale:

0 point = Fails exercise 1a = Refuses, unsure or cannot lay down on the floor and rise independently or fails 1b.

1 point = Successful Exercise 1b = Can successfully lay down on the floor and rise independently but fails 2a or 2b.

2 points = Successful Exercise 2b = Can successfully fall backwards from sitting down on the floor but fails 3a or 3b

3 points = Successful Exercise 3b = Can successfully fall backwards from a squatting position but fails 4a or 4b.

4 points = Can successfully fall backwards from a standing position without any harmful maneuver (exercise 4b).

"Strömqvist-Baäthe Test" for measuring Falling Competence Backwards, Sideways & Forward: Copyright: K. Strömqvist Bathe & M. Tonkonogi,

University of Dalarna, developed 2018 - 2019. English translation May 2023.

Tests may be used free of charge by trained test leaders with the acknowledgement of the correct test name as well as simple registration of the use by e-mail to: ksb@du.se stating: when and how the test will be used as well as name of point of contact, e-mail and name of institution/club/company

MOTOR SKILLS AND FALLING TECHNIQUE (SBCT)

MOTOR SKILLS AND FALLING TECHNIQUE (SBCT)

Variable	EG				CG			
	Pre-Test *N* (%)		Post-Test *N* (%)		Pre-Test *N* (%)		Post-Test *N* (%)	
	Sí	No	Sí	No	Sí	No	Sí	No
1b_CA	15 (65,2)	5 (21,7)	17 (73,9)	-	13 (54,2)	-	9 (37,5)	2 (8,3)
2b_CA	5 (21,7)	8 (34,8)	17 (73,9)	-	6 (25,0)	3 (12,5)	1 (4,2)	8 (33,3)
3b_CA	20 (87,0)	2 (8,7)	14 (60,9)	-	2 (8,3)	-	-	1 (4,2)
4b_CA	-	-	10 (43,5)	3 (13,0)	1 (4,2)	-	-	-
1b_CL	15 (65,2)	3 (13,0)	17 (73,9)	-	10 (41,7)	1 (4,2)	8 (33,3)	3 (12,5)
2b_CL	7 (30,4)	5 (21,7)	17 (73,9)	-	7 (29,2)	3 (12,5)	-	8 (33,3)
3b_CL	1 (4,3)	1 (4,3)	14 (60,9)	1 (4,3)	1 (4,2)	-	-	-
4b_CL	-	-	10 (43,5)	3 (13,0)	1 (4,2)	-	-	-

Note: 1bCA= Lies on back, lifts head off mat, places arms to the side and then rises again from the floor without assistance. 2bCA= Falls backwards after sitting (legs forward) without instructions given. 3bCA= Falls backwards after squatting down (no instructions given). 4bCA= Falls backwards from standing (no instructions given). 1bCL= Lies on side, may lift head and roll from side to side. 2bCL= Falls sideways from sitting (legs forward) without instructions. 3bCL= Falls sideways from a squatting or kneeling position, without given instructions. 4bCL= Rises and falls sideways, no instructions given.

06. Conclusion

Improvements in balance and lower body strength

Significant improvement in fall competence

Effective intervention for fall prevention

ACKNOWLEDGEMENTS :

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