Measuring exercise self-efficacy after stroke: validity and reliability of current measures for community-dwelling stroke survivors.

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Introduction:

- Many stroke survivors are highly inactive
- Low self-efficacy is considered an important factor
- Tools used to measure self-efficacy haven't been tested for use in the stroke population.

Aims:

To evaluate the test-retest reliability and construct validity of three self-efficacy scales for use with stroke survivors.

Table 1. Participant characteristics and activity information (n=51)

Participant characteristics and activity information	
Female, n = (%)	23 (45)
Age (years), mean (SD)	74 (11)
Time post stroke (months), median (IQR)	22 (13.5 - 36)
Frenchay Activity Index, mean (SD) [score range 0 – 45]	28 (9)
Barthel Index, median (IQR) [score range 0 – 100]	100 (95 - 100)
Charlson Comorbidity Index, median (IQR) [score range 0 – 37	5 (4 - 5)
Stroke location, n = (%)	
Left cerebral hemisphere	18 (35)
Right cerebral hemisphere	15 (29)
Frontal lobe	1 (2)
Cerebellum	9 (18)
Unsure	8 (16)
Daily steps taken, median (IQR)	4664 (2303 - 8063)
Daily time spent walking (minutes) median (IQR)	71 (48 - 104)

SD Standard Deviation, IQR Interquartile Range

Data collection site: Donvale Rehabilitation Hospital

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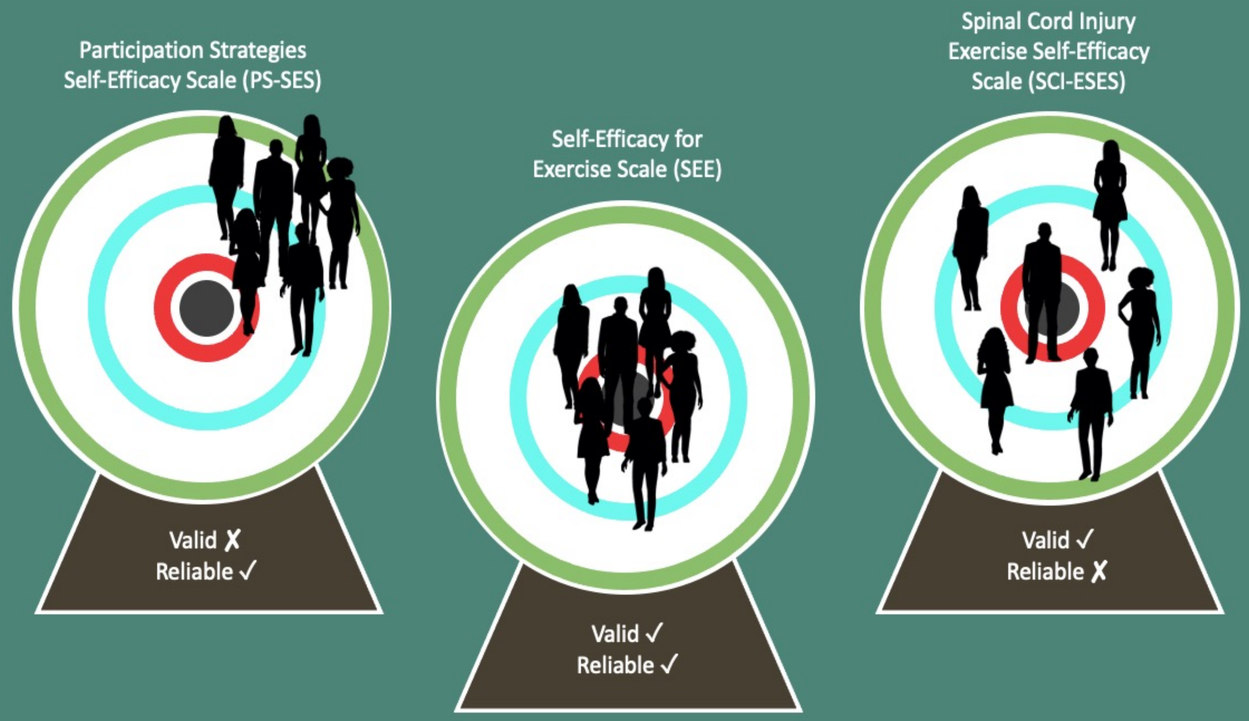
The Self-efficacy for Exercise Scale (SEE) is valid and reliable for measuring average change of self-efficacy over time in people post stroke.



Methods:

- Repeated-measures design
- 51 community-dwelling stroke survivors
- 3 self-efficacy scales completed on 2 occasions, 7 days apart
- Construct validity: 8 a-priori hypotheses tested
- Test-retest reliability: intraclass correlation coefficients and Bland-Altman analysis.

Results:

Test-retest reliability for the SEE and PS-SES was adequate for measuring average change over time in groups, however all 3 assessments showed high variation in individuals' scores across the two assessment timepoints.

Construct validity (table 2) was achieved for the SEE and SCI-ESES (75% of hypotheses) while the PS-SES did not achieve the threshold (50% of hypotheses).

The SEE and SCI-ESES were related to higher activity levels, greater functional participation, self-reported physical activity levels, and engagement in work or volunteering activities.

Conclusions:.

The findings of the current study recommended the SEE for use in showing average change over time in groups of stroke survivors.

Table 2. Hypotheses accepted / rejected

Hypothesis	SEE	PS-SES	SCI-ESES
1. Self-efficacy scores will discriminate between full community walkers (≥7500 steps/day) and those who are not.	✓	✓	✓
2. There will be a high or very high positive correlation (r ≥ 0.50) between Frenchay Activities Index score and all self-efficacy measures.	✓	✗	✓
3. There will be at least a moderate difference (SMD ≥ 0.50) between self-efficacy scores of people who reported being regularly active pre-stroke (≥2hours/week), and those who did not.	✗	✗	✓
4. There will be at least a moderate difference (SDM ≥ 0.50) between self-efficacy scores of people who report being regular physical activity post-stroke (≥2 hours/week, n = 32) and those who do not.	✓	✓	✓
5. The scores of the 3 self-efficacy measures will be highly correlated to each other (r ≥ 0.70).			
SEE		✓	✓
PS-SES	✓		✗
SCI-ESES	✓	✗	
6. The SEE and SCI-ESES will be more highly correlated than the PS-SES and SEE, or the PS-SES and the SCI-ESES.		✓	
7. There will be at least a moderate difference (SMD ≥ 0.50) between self-efficacy scores of participants who are currently working or volunteering and those who are not.	✓	✓	✓
8. There will be at least a moderate negative correlation (r ≥ 0.50) between Charlson Co-morbidities Index scores and exercise self-efficacy.	✗	✗	✗
Final construct validity score (% of hypotheses achieved):	75%	50%	75%

✓= Hypothesis accepted, X = rejected

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