



**Institute for
Musculoskeletal
Health**

A research partnership between Sydney Local Health District and the University of Sydney in musculoskeletal health and physical activity

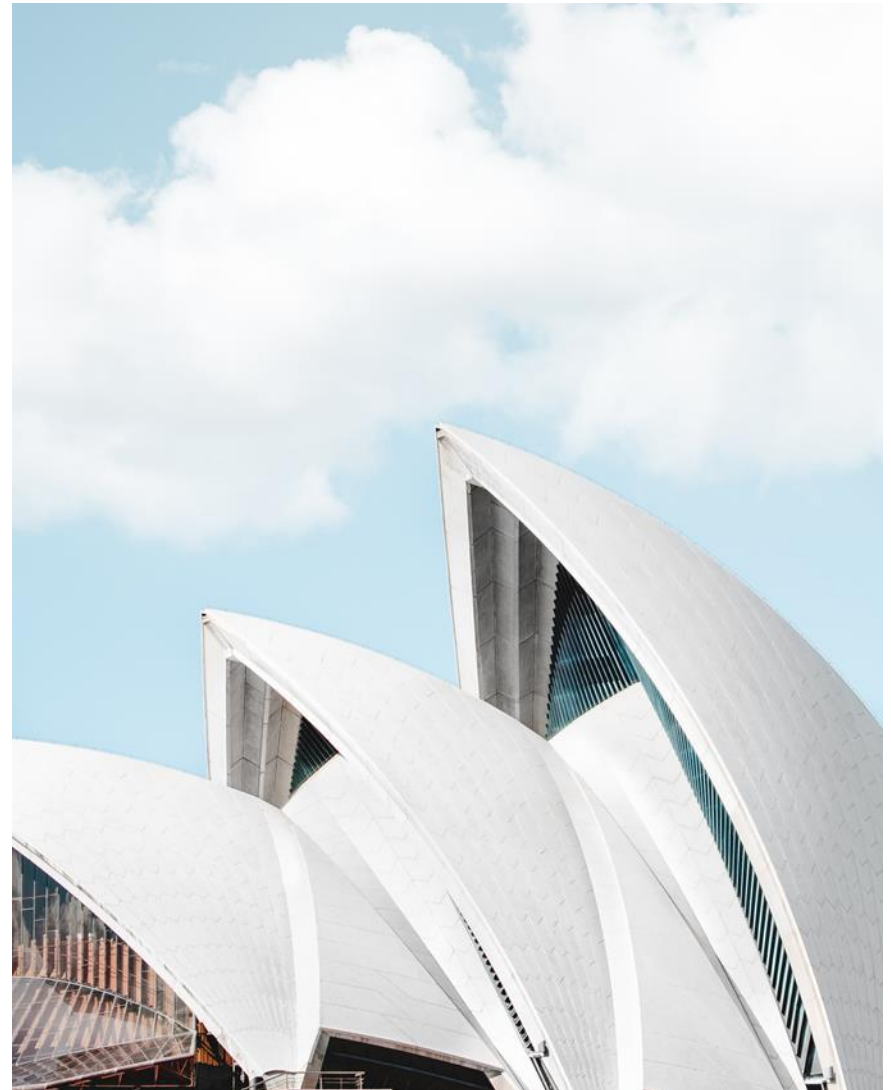
Dosage and predictors of arm practice in a stroke unit primarily providing semi-supervised group practice

Presented by

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Background

- High intensity repetitive task-specific training is important for improving arm outcomes.
- Unclear if or how intensive arm practice is being implemented or how much practice stroke survivors are completing.



Aims

- To describe the amount and type of arm practice completed by stroke survivors in one stroke unit.
- To establish predictors of arm practice dose achieved.



Methods

Design: Inception cohort study.

Participants: 99 consecutive stroke inpatients.

Setting: Stroke Unit, Bankstown Hospital.

Data collection:

Type and amount (repetitions) of arm practice.

Possible predictors of practice dose collected on admission.



Results: Demographics

Characteristic	Mean (SD)	Median (IQR)
Age	75.8 (12.4)	
Males	52 (52.5) (N, %)	
Type of stroke		
Right sided lesion	50 (50.5) (N, %)	
Ischemic	82 (82.8) (N, %)	
Days post-stroke	3.1 (3.9)	0.0 (1.0)
Length of inpatient stay (days)	36.9 (30.0)	28.0 (39.5)
Admission modified Rankin Scale (0-5)	4.4 (0.7)	5.0 (1.0)
Charlson Comorbidity Index	1.4 (1.4)	1.0 (2.0)
Six Item Screener (0-6)	3.7 (2.1)	4.0 (3.0)

Summary of amount/types arm practice completed

Characteristic	Mean (SD)	Median (IQR)	Range
Repetitions/days therapy provided			
Number available therapy days	26.0 (20.3)	20.0 (26.0)	3.0 to 95.0
Number of therapy days	11.1 (13.3)	6.0 (12.0)	0.0 to 63.0
Repetitions completed per day	86.1 (76.5)	68.5 (88.2)	0.0 to 350.5
Type of session provided			
Arm group	7.2 (8.8)	4.0 (9.0)	0.0 to 40.0
Dressing group	2.9 (4.4)	1.0 (4.0)	0.0 to 22.0
Physiotherapy group	1.6 (2.0)	0.0 (2.0)	0.0 to 24.0
1:1 Occupational Therapy	0.9 (1.8)	0.0 (1.0)	0.0 to 8.0
Independent practice	0.1 (0.6)	0.0 (0.0)	0.0 to 5.0
Total sessions provided	12.8 (15.3)	7.0 (15.0)	0.0 to 67.0

Summary of arm repetitions completed

Characteristic	Mean (SD)	Median (IQR)	Range
Repetitions completed by type			
Arm group	105.3 (70.6)	90.0 (85.9)	0.0 to 381.5
Dressing group	14.4 (12.5)	10.5 (15.1)	1.0 to 61.3
Physiotherapy group	108.1 (75.2)	85.0 (98.5)	21.8 to 313.1
1:1 Occupational Therapy	27.6 (40.2)	7.5 (34.5)	1.0 to 155.0
Independent practice	83.3 (35.0)	79.5 (34.8)	50.4 to 120.0
Repetitions/sessions per week			
Repetitions completed per session	72.7 (59.4)	56.9 (72.3)	0.0 to 238.0
Therapy weeks	5.4 (4.1)	4.0 (5.0)	1.0 to 20.0
Sessions completed per week	2.0 (1.5)	1.5 (1.7)	0.0 to 5.6
Repetitions completed per week	195.2 (222.9)	129.9 (248.9)	0.0 to 1168.3

Univariable analysis of the predictors of mean daily arm practice dose

Variable	Effect on daily practice dose mean (95% CI)	R ² %, p-value	Effect on daily practice dose mean (95% CI)	R ² %, p-value
	All participants n=99		No cognitive impairment n=73	
Age (years)	-1.3 (-2.5 to -0.1)	4.7%, 0.03	-1.0 (-2.5 to 0.4)	2.7%, 0.17
Ischemic stroke	30.9 (-9.3 to 71.1)	2.4%, 0.13	36.3 (-15.7 to 88.2)	2.7%, 0.17
Cognitive impairment	-39.5 (-73.4 to -5.6)	2.3%, 0.02	-	-
Admission mRS 5	-37.0 (-67.0 to -7.1)	5.8%, 0.02	-36.2 (-72.9 to -0.52)	5.2%, 0.05
BBT 0	-	-	32.4 (-9.9 to 74.6)	3.2%, 0.13

Multivariable analysis of the predictors of mean daily arm practice dose

Variable	Effect on daily practice dose mean (95% CI)	p-value	Effect on daily practice dose mean (95% CI)	p-value
	All participants n=99		No cognitive impairment n=73	
Age	-1.3 (-2.4 to -0.06)	0.04	-	-
Cognitive impairment	-34.9 (-68.6 to -1.2)	0.03	-	-
Admission mRS 5	-	-	-48.4 (-85.7 to -11.2)	0.01
BBT 0	-	-	48.3 (5.8 to 90.8)	0.03

Conclusions

- The amount of arm practice completed varied widely.
- Arm therapy was not provided every day.
- Semi supervised groups primary delivery mode.
- Dose can be predicted by age, cognitive impairment, stroke severity and inability to grasp/release.
- Strategies needed to increase intensity of therapy and opportunities for arm practice.

Published reference

Vratsistas-Curto, A., Sherrington, C., & McCluskey, A. (2019). Dosage and predictors of arm practice during inpatient stroke rehabilitation: an inception cohort study. *Disability and Rehabilitation*, (15), 1-8.





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