

Effect of Home-Based Reablement Services in Taiwan's National 10-Year Long-Term Care Plan Version 2.0 : Taking Physical Therapy for Example

Shi-Han Chen¹, Hsiu-Hsin Tsai^{2,3}, Hsiao-Wei Yu⁴, Chih-Ming Chen⁵, Po-Ching Huang^{5,6}, Pay-Shin Lin^{1,7,8*}

1. Master Degree Program in Healthcare Industry, College of Medicine, Chang Gung University
2. School of Nursing, College of Medicine, Chang Gung University, Taoyuan, Taiwan
3. Department of Psychiatry, Chang Gung Memorial Hospital at Linkou, Taoyuan, Taiwan
4. Department of Gerontology and Health Care Management, Chang Gung University of Science and Technology, Taoyuan, Taiwan
5. Taipei Society of Physical Therapists, Taipei, Taiwan
6. AJWK Physical Therapy Clinic, Taipei, Taiwan
7. Department of Physical Therapy & Graduate Institute of Rehabilitation Science, College of Medicine, Chang Gung University, Taoyuan, Taiwan
8. Healthy Aging Research Center, Chang-Gung University, Taoyuan, Taiwan

*corresponding author



PURPOSE

To compare the effectiveness of different intervention duration of home-based physical therapy reablement services under LTC 2.0.

METHODS

This is a secondary data analysis research. The database contains total subjects who received home reablement service in 2018 (n=757) in one of the Physical Therapists Association in northern Taiwan. This study compares the outcomes of those cases according to the intervention periods: 1-3 months, 4-6 months, and 7-12 months. The outcomes include Functional Activity Limitation (FAL), Postural Assessment Scale for Stroke Patients (PASS), Barthel index (BI) and Timed up & go test (TUG). Besides, sociodemographic data, health status, and intervention frequency are collected. Repeated Measure ANCOVA was used to analyze the effectiveness of reablement by adjusting the baseline data.

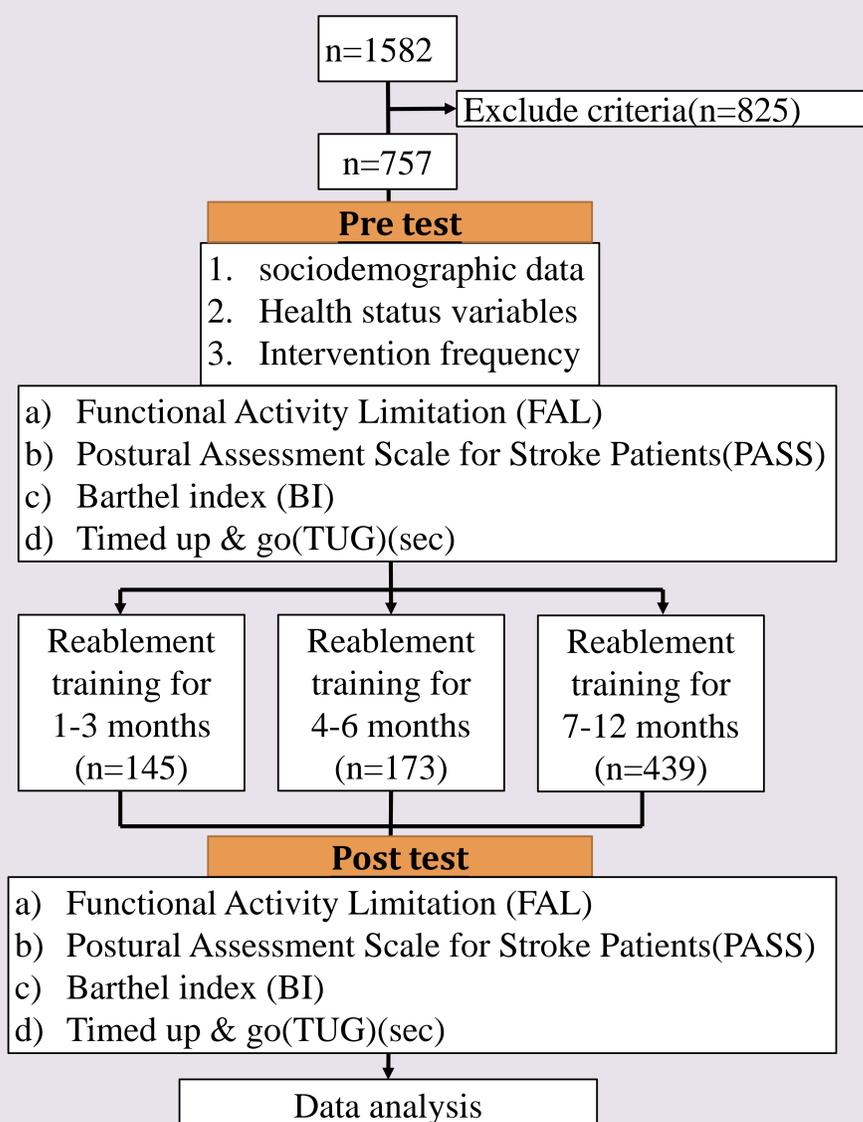


Figure 1. Flowchart of the trial profile

RESULTS

The results show significant interactions in FAL, BI and TUG, but not PASS among the 3 groups after adjusting the pre-test scores. Post hoc analyses show significant improvement of FAL and BI scores in 1-3 month than in 7-12 month group, BI and TUG in 4-6 month than in 7-12 month group.

ACKNOWLEDGEMENTS

This study thanks the Taipei Society of Physical Therapists for providing the home reablement database. This study has been approved by Chang Gung IRB. (No. 202100622B0)

TABLE 1. Participants' baseline demographic data

Variable	Total(N=757)	1-3 months (N=145)	4-6 months (N=173)	7-12 months (N=439)	p
	n(%) / M± SD (min-Max)				
sociodemographic data					
Gender ^a					
male	331(43.7%)	66(45.5%)	81(46.8%)	184(41.9%)	0.485
female	426(56.3%)	79(54.5%)	92(53.2%)	255(58.1%)	
Age(years)	80.03±13.42 (4-104)	79.74±14.45 (5-99)	80.85±13.43 (4-104)	79.80±13.08 (21-102)	0.657
Health status					
Number of diseases	2.25±1.26(0-9)	2.23±1.21(0-6)	2.37±1.27(0-6)	2.21±1.28(0-9)	0.376
Major health condition ^a					
Neurological disease	416(55.0%)	71(49.0%)	83(48.0.7%)	262(59.7%)	0.025
(Multiple choice)					
Dementia	85(11.2%)	25(17.2%)	22(12.7%)	38(8.7%)	
Orthopedic diseases	108(14.3%)	25(17.2%)	24(13.9%)	59(13.4%)	
Additional health conditions	139(18.4%)	22(15.2%)	42(24.3%)	75(17.1%)	
No	9(1.2%)	2(1.4%)	2(1.2%)	5(1.1%)	
muscle tone ^a					
No increase in muscle tone	342(49.9%)	74(57.8%)	86(54.4%)	182(45.6%)	0.024
Muscle tension in any limb	343(50.1%)	54(42.2%)	72(45.6%)	217(54.4%)	
Intervention frequency					
number of times	12.99±11.16 (2-57)	4.59±3.30 (2-21)	9.71±7.07 (2-42)	17.06±12.15 (2-57)	<0.001
Months	6.92±3.23 (1-12)	1.99±0.79(1-3)	5.04±0.79(4-6)	9.29±1.53 (7-12)	<0.001
Time/Months	1.97±1.34 (0.17-8.25)	2.44±1.43 (0.67-8)	1.93±1.39 (0.33-8.25)	1.83±1.26 (0.17-6.75)	<0.001

P-values for one way ANOVA and χ^2 test were applied to test for differences among groups. ^a using χ^2 test.

TABLE 2. Intervention effects were analyzed with Repeated Measure ANCOVA (adjusting the pre-test scores)(n=757)

Variable		1-3 months (N=145)	4-6 months (N=173)	7-12 months (N=439)	F/p			Post hoc test
		M± SD	M± SD	M± SD	†	‡	§	
FAL (0-35)	Pre	14.93±10.50	12.31±10.05	13.65±10.17	5.62**	26.13***	5.62**	1>3
	post	16.32±10.68	13.70±10.83	14.23±10.46				
PASS (0-36)	Pre	10.61±10.82	8.18±9.77	10.45±10.20	2.23	23.85***	2.23	
	post	11.85±11.64	9.32±10.79	11.03±10.64				
BI (0-100)	Pre	30.45±31.71	25.06±27.46	29.09±27.63	4.43*	32.17***	4.43*	1>3,2>3
	post	34.14±33.76	28.61±29.77	30.75±30.76				
TUG(sec)	Pre	43.00±98.05	41.90±56.82	42.64±46.98	3.25*	2.85	3.25*	2>3
	post	41.81±98.21	36.34±33.98	41.85±46.52				

† Differences between groups; ‡ Differences within the group (pre-post); § Interaction time (pre-post) × groups; ¹ 1-3 months group, ² 4-6 months group, ³ 7-12 months group
Abbreviations: M± SD, mean ± Standard deviation; FAL, Functional Activity Limitation; PASS, Postural Assessment Scale for Stroke Patients; BI, Barthel index; TUG, Timed up & go
* $p<0.05$, ** $p<0.01$, *** $p<0.001$

CONCLUSION

Reablement intervention significantly improves functional activities, ADL and mobility. The effects are more obvious within 6 months. The results of this research support the current policy advocacy of an efficient 3-month period of reablement intervention. However, for mobility and ADL, the improvement will be more prominent when the intervention extends to 4-6 months.