
Improving Toileting Ability among Elders Living in Long- Term care facilities in Taiwan

Shih-Ling Kuo, MS, RN (presenter)

Su-Hsien Chang, PhD, RN, MSN*

Ching-Len Yu, PhD

Background

- Since 1993, Taiwan reached the World Health Organization's (WHO) benchmark for defining an aging population
- Traditionally, Chinese elders were taken care of by oldest son and daughter-in-law, un-married son or daughter,
 - More career women and nuclear families (husband-wife-children)
 - The needs for healthcare services for elderly are increasing
 - The burden of caring for frail elders presents a formidable challenge to families, healthcare providers, the community and the Taiwanese government

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- A continuum of long-term healthcare services such as nursing homes are developing
 - Nursing homes provide services to elders with chronic illness, discharged from hospital and need continuous skill-nursing care services
 - Nursing home elders in Taiwan are filled with frail chronically ill elderly people
 - They tend to have physical, cognitive, and/or sensory capabilities deficiencies
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- Magaziner and colleagues (2000) pointed out
 - most nursing home residents require assistance with ADLs: bathing (87.3%), dressing (83.9%), transferring (75%), **toileting (79.2%)**, and eating (31.7%).
 - Yeh (2004) indicated
 - Long-term care facilities' residents require assistance with ADLs: dressing(92%), bathing(100%), **toileting (92%)**, eating (88%)
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- Although self-toileting ability is a complicated and complex activity, **unable to perform self-toileting affect a person's physical health, psychological health and quality of life.**
 - Unfortunately, staff caregivers in long-term care facilities **lack a theory-based intervention aimed at improving toileting ability** among elders living in long-term care facilities.
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Purpose

- To test the effectiveness of a theory-based intervention program in improving toileting ability among elders living in long-term care facilities.
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Methods

- This study used an **experimental, two groups, and longitudinal** research design.

■ Subject selection criteria:

- ❑ 1) age 65 years or older;
 - ❑ 2) bed-bound less than six months;
 - ❑ 3) currently rely on staff caregivers to perform one or more ADL;
 - ❑ 4) able to speak Mandarin or Taiwanese;
 - ❑ 5) normal or mild depression as measured by a score less than 8 on the Geriatric Depression Scale – Short Form (GDS-SF);
 - ❑ 6) assessed by primary care physician and head nurse in the facility to be physically capable of carrying out some their activities of daily living (ADL).
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- Using a randomized process, subjects who meet all subject selection criteria were assigned to either the intervention group or comparison group **depending on which long-term care facilities they lived.**
 - Subjects in the experimental group received the theory-based interventions, which were designed based on **Bandura's Social Cognitive Theory** and **provided by staff caregivers of long-term care facilities.**
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- Intervention
 - Self-Care and Exercise Self-Efficacy Enhancement Program (SCESEEP)
 - Activities of the intervention included performance accomplishment, various experiences, and verbal persuasion, and were provided by staff caregivers of long-term care facilities.
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- ❑ Performance accomplishment activities

- Allowing elders to perform activities of daily living based on their abilities
- Offering positive feedback for improving one or more self-care tasks to residents.

- ❑ “Grandpa, you are doing a great job. Look, you were not able to wash your face last week, but you can do it now.”

- Allowing elders to do exercise

- ❑ Elders were encouraged to walk, or perform body-movement 20 minutes for four times/week. Five minutes’ warm up and cool down need to be done before any exercise.
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- ❑ Vicarious experiences

- Observing and discussing another person's success in enhancing a self-care activity with elders

- ❑ “He (a nursing home resident) was admitted here (a nursing home) because of stroke and paralysis on the right side of his body, just like you. He could not feed and walk by himself. Now, he can walk using a walker. He also can feed himself without help. So, if he can do it, so can you.”

- Verbal persuasion

- Proving verbal encouragement for efforts to self-care activities to elders

- “Grandma, I am going to let you wash yourself. You know that the left side of your leg and hand are not paralyzed. You have attended a rehabilitation program for almost two months. You know how to use your left hand to feed yourself because you have learned it in a rehabilitation center several times. You do self-feeding very well. Now, I am going to let you practice washing your face. You can do it by using your left hand. I will be with you when you wash your face. I know you can do it.”
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- Data collection: The data was collected in:
 - baseline (time 1) post-intervention
 - 2 months (time 2) post-intervention
 - 4 months (time 3) post-intervention
 - 6 months (time 4) post-intervention
 - Data collection methods including
 - observations, chart reviews, interviews.
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Results

- Table 1 Demographic comparisons between experimental and comparison groups

Variable	Experimental	Comparison	<i>t</i>-test/χ^2
<i>Aged (M±SD)</i>	77.21 ±9.52	78.80±11.44	1.120
Number of months living in long-term care facilities (<i>M±SD</i>)	37.39 ±25.82	40.66±23.91	1.083
Self-efficacy for functional ability (<i>M±SD</i>)	4.84±3.81	5.10±3.79	0.566
Outcome expectation for function scale (<i>M±SD</i>)	0.95±1.20	0.90±1.18	0.371
Toileting ability (<i>M±SD</i>)	70.94 ±35.66	74.92±37.25	0.893

Variable	Experimental	Comparison	<i>t-test/χ²</i>
Gender			0.307
Male	62	70	
Female	58	84	
Marital status			0.509
married	50	67	
Single	9	17	
Widow	61	70	
Educational level			0.859
No formal education	74	90	
≥6years	29	41	
< 6 years	17	23	
Finical status			0.256
Pension	9	9	
Adult children	106	131	
Others	5	14	

Post SCRSEEP Intervention_ Changes in physical fitness

Variables	Experimental group (<i>F</i>)	Comparison group (<i>F</i>)
Left hand strength (kg)	0.9	0.306
Right hand strength (kg)	0.316	0.586
Chair Stand test (time)	5.816**	0.618
Left shoulder extension (degree)	0.294	1.528
Right shoulder extension (degree)	0.216	1.102
Chair Sit-and-Reach (cm)	0.477	0.474
Left hip flexion (degree)	32.502**	1.145
Right flexion (degree)	37.690**	1.893
Left hip extension (degree)	12.785**	0.466
Right hip extension (degree)	15.731**	1.680
Left knee flexion (degree)	22.470**	1.155
Right knee flexion (degree)	15.565**	0.980
Left knee extension (degree)	34.893**	4.424**
Right knee extenesion (degree)	21.840**	4.342**

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- Results showed that subjects in the experimental group have statistically changed in lower-body strength, both hips and knees in flexion and extension.
 - Results showed that lower body strength, self-efficacy for functional ability, perception of pain, and degree of right knee extension was significant predictors ($R^2 = 0.53$) of toileting ability.
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- To understand toileting change, ANCOVA was performed.
 - Although toileting ability between baseline and 4th times' measurement showed improved in the experimental group, there were **no statistical changes in toileting ability among 4 time's measurements.**
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Toileting changes via controlled covariance

Variables	Experimental group				Comparison group			
	Type III Sum of square	<i>df</i>	Mean square	<i>F</i>	Type III Sum of square	<i>df</i>	Mean square	<i>F</i>
Correlated model	356849 ^a	7	50978	120.53**	368004 ^b	7	52572	94.25**
Intercept	44064	1	44064	104.18**	117890	1	117890	211.36**
Lower body strength	2993	1	2993	7.08**	28649	1	28649	51.36**
Self-efficacy for functional ability	159984	1	159984	378.26**	107479	1	107479	192.69**
perception of pain	3951	1	3951	9.342**	7223	1	7223	12.95**
degree of right knee extension	91.76	1	91.76	0.217	2147	1	2147	3.85**
Times	1108	3	369	0.873	1046	3	349	0.63
Error	189904	449	423		302312	542	558	
Total	2883696	457			3757470	550		
Corrected total	546754	456			670316	549		

註：^aR Squared = .653 (Adjusted R Squared = .647)；^bR Squared = .549 (Adjusted R Squared = .543)；* $p < .05$ ；. ** $p < .01$.

Conclusion/Implications for practice:

- This study provided value information that staff caregivers could apply a theory-based intervention, that is called self-care and exercise self-efficacy enhancement program, to maintain toileting ability among elders living in long-term care facilities in Taiwan.
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Thank you for your listening

