"Finding a Balance Point"
A concept central to family caregiving for older persons in Taiwan

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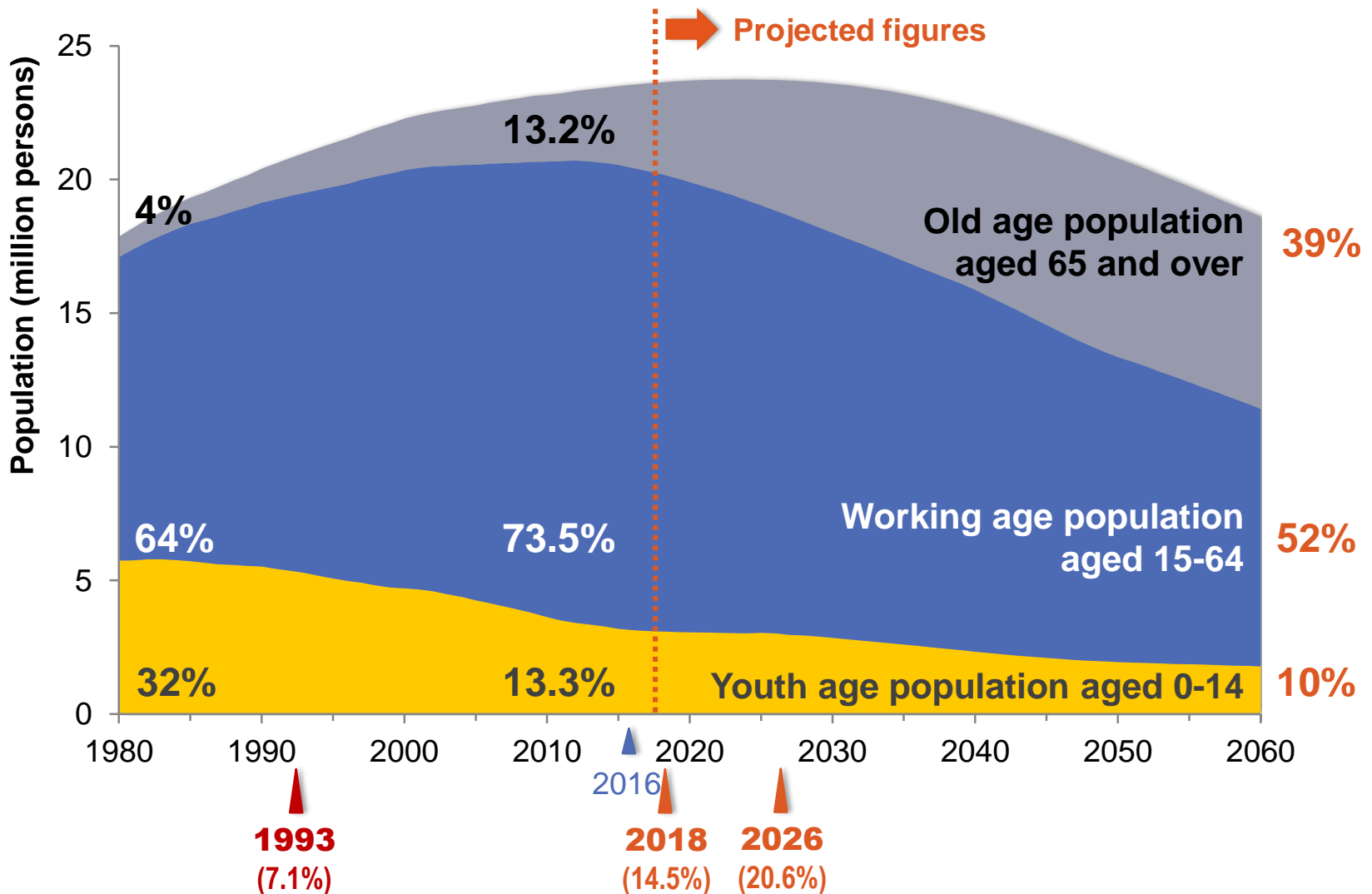# OUTLINE

A. Background information

B. Model introduction: Finding a balance point between competing needs

C. Finding a Balance Scale

D. Model testing: Balance as mediator between caregiving demand and caregiver role strain
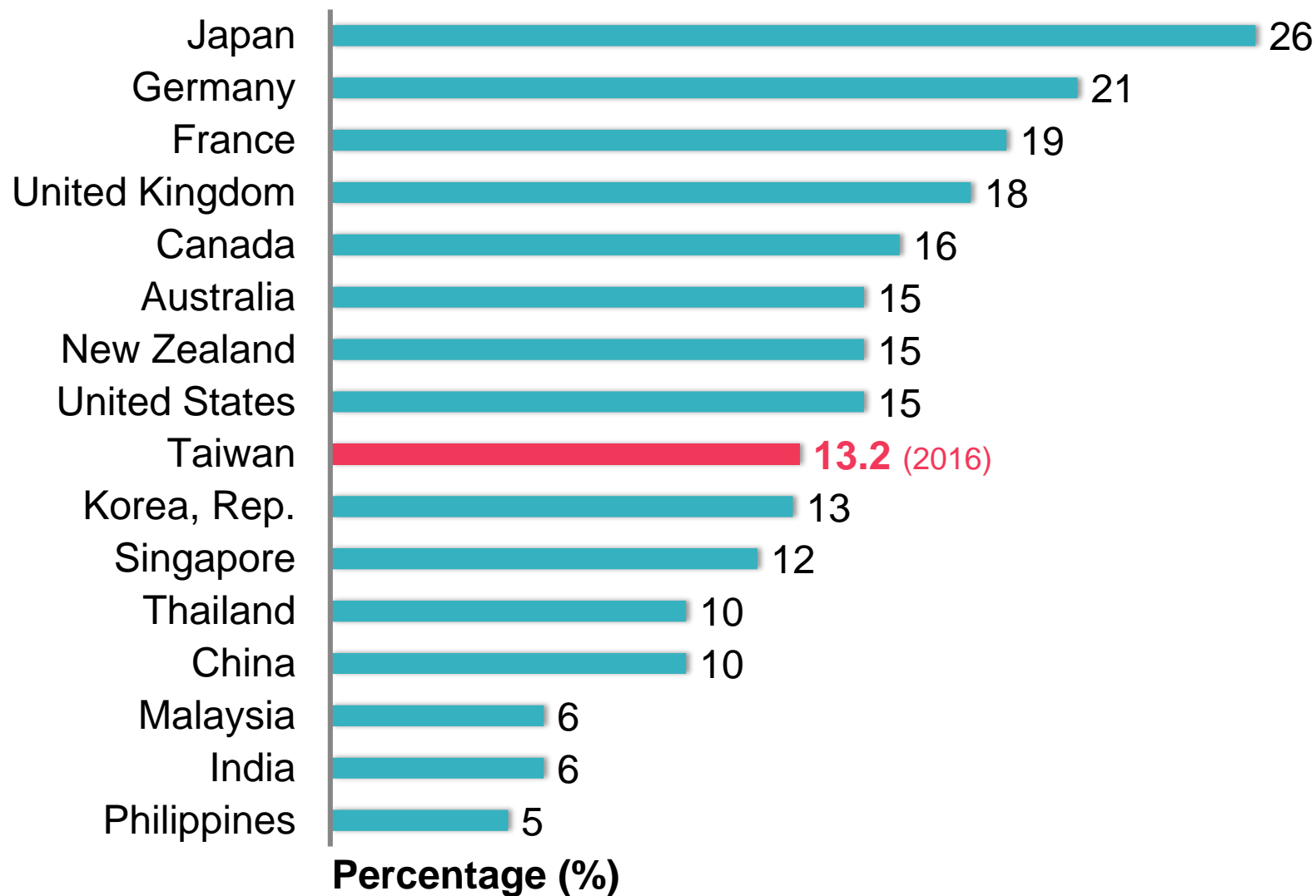
E. Intervention study

A

Background Information

Population projections for Taiwan: 2017 ~ 2060

Population projections chart for Taiwan (1980–2060). Y-axis: Population (million persons), 0 to 25. X-axis: years 1980 to 2060.

- Projected figures (beginning ~2017)
- Old age population aged 65 and over — 4%, 13.2%, 39%
- Working age population aged 15-64 — 64%, 73.5%, 52%
- Youth age population aged 0-14 — 32%, 13.3%, 10%
- 2016
- 1993 (7.1%)
- 2018 (14.5%)
- 2026 (20.6%)

Population aged 65 or over (% of total) 2015

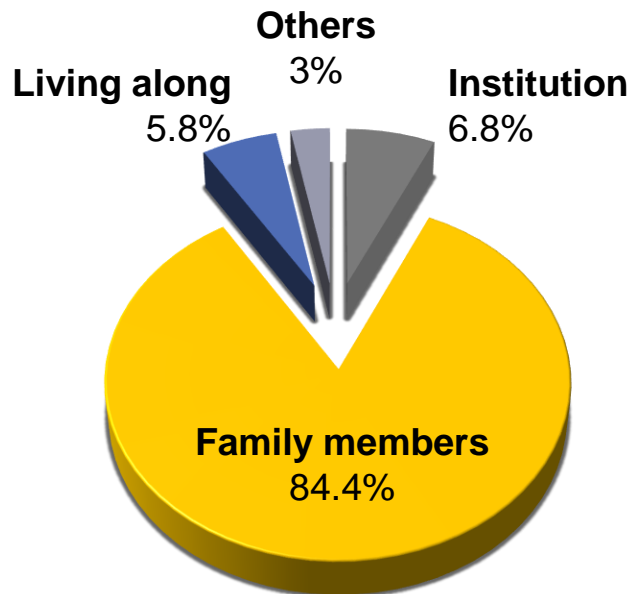| Country	Percentage (%)
Japan	26
Germany	21
France	19
United Kingdom	18
Canada	16
Australia	15
New Zealand	15
United States	15
Taiwan	**13.2** (2016)
Korea, Rep.	13
Singapore	12
Thailand	10
China	10
Malaysia	6
India	6
Philippines	5

Percentage (%)

Living arrangements

- **Living arrangements in Taiwan:**

  - 63.1% of older adults live with their children, 20.6% spouse, 11.1% alone
  - Only 3.4% of older adults live in institutions

- **In Europe and the United States, the most common is couple-only, followed by living alone**
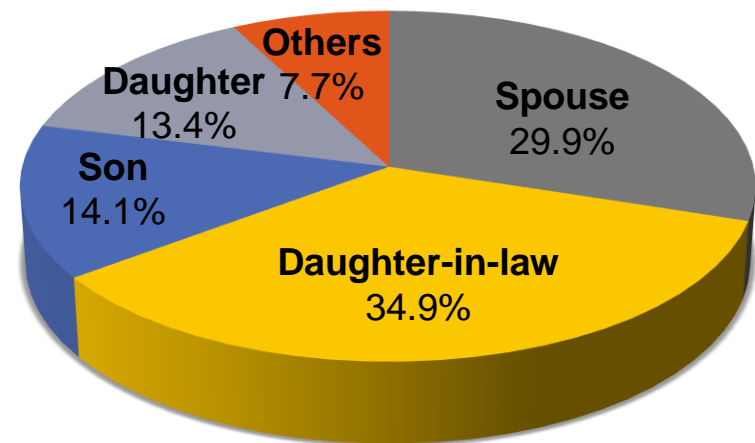
  - 1/4 living with their children

- **20.8% of older persons with ADL impairment in Taiwan[1]**

- **The top 3 needs for assistance in IADL among older people are telephone use (84.7%), managing medications (84%), and transportation (72.7%). Over 70% of older people can perform these activities independently[1]**

- **The estimated number of persons with disability is 760,000 (16.41% in older people) in 2015 and this figure will reach 1,200,000 (16.36% in older people) by 2031 [2,3]**

- **In Taiwan, the estimated time of an individual need long-term care is approximately 7.3 years (male: 6.4 years; female: 8.2 years)[4]**

Family members became primary caregivers

Living status of people who need long-term care[1]

Family caregivers' relationship to care recipient[2]

Others
3%

Living along
5.8%

Institution
6.8%

Family members
84.4%

Others 7.7%

Daughter
13.4%

Son
14.1%

Spouse
29.9%

Daughter-in-law
34.9%

Female caregivers constitute 73% of the family caregivers[3]

- **Length of family care[1]**

  - 21% over 10 years
  - 25% 5-10 years
  - 17% 3-5 years
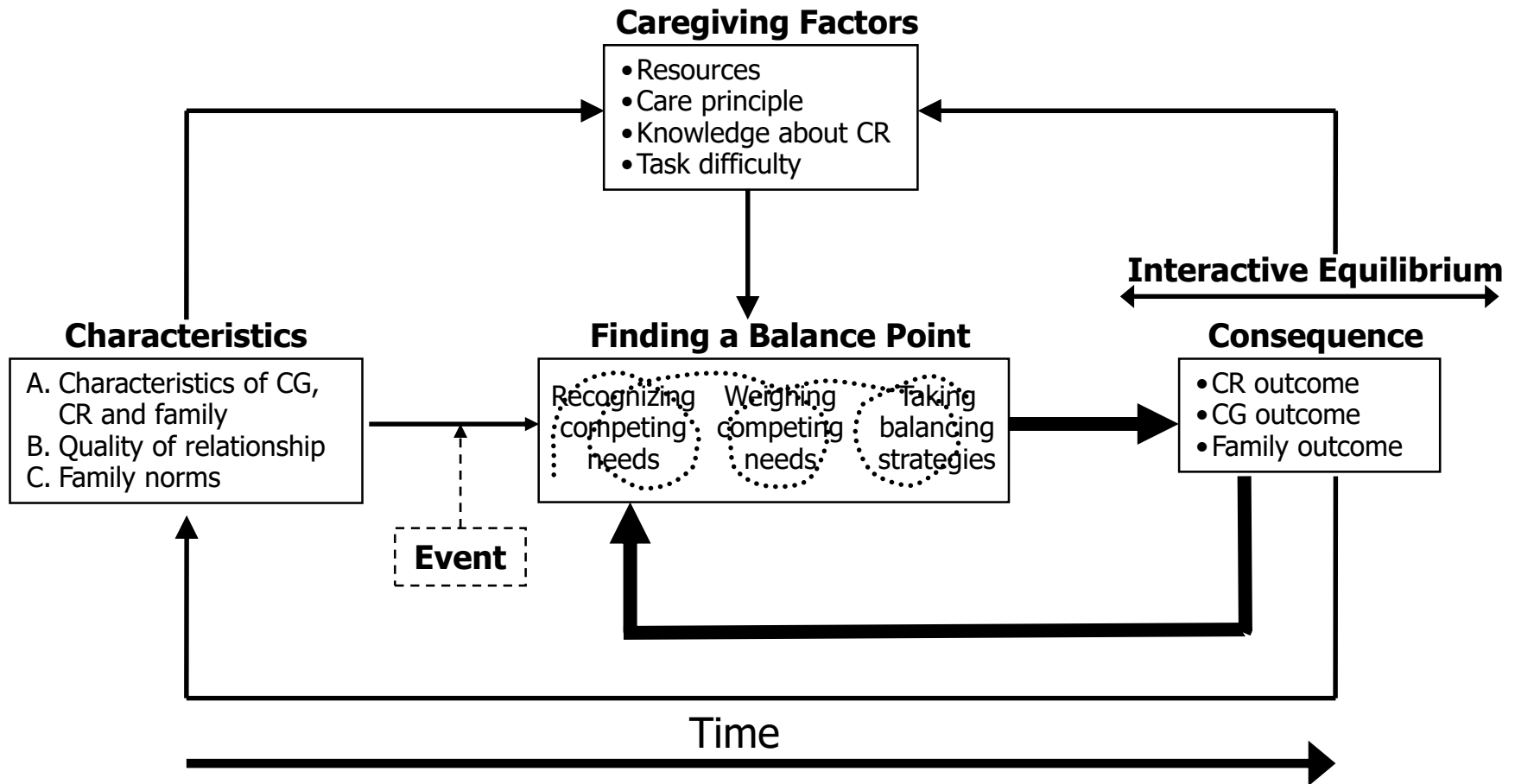 - 37% under 3 years
- **Average caregiving hours per day: 14 hours[2]**

B

Model Introduction:
Finding a balance point between competing needs

What family caregiving processes influence outcomes of family care?

- **Process indicators of good family care?[1]**

    - Predictability refers to establishing regular and consistent tasks within a given family caregiving situation

    - Preparedness - preparedness, defined as caregivers' perceived readiness for the tasks and stresses of caregiving

    - Enrichment - pleasurable or meaningful experiences in their caregiving to frail elders

- **What family caregiving processes influence outcomes of family care in Taiwan?**

    - A grounded theory approach[2] (N=15)

Finding a balance point:
A process central to quality of family caregiving in Taiwanese families

Shyu, Y. I., Archbold, P., & Imle, M. (1998). Finding a balance point: A process central to understanding family caregiving in Taiwanese families. *Research in Nursing & Health, 21*, 261-270.

Components of finding a balance point

Recognizing competing needs	Weighing competing needs	Taking balancing strategies
• Reactional recognition • Plan-ahead recognition	• Simulation weighing • Principle oriented weighing • Dominance structuring weighing	• Managing behavior/emotion problems • Modifying environment • Altering the schedule/activity • Recruiting members to the work team • Running the work team • Innovating care task • Engaging self-care activities • Managing treatment

Shyu, Y. I., Archbold, P., & Imle, M. (1998). Finding a balance point: A process central to understanding family caregiving in Taiwanese families. *Research in Nursing & Health, 21*, 261-270.

Differences between expert caregivers and caregivers who fail to find a balance point

Recognizing competing needs	Weighing competing needs	Using balancing strategies
Expert caregiver Plan-ahead recognition	Rehearsal weighing	Flexibly using multiple strategies
Caregiver who fails Reactional recognition	Problems in weighing	Ineffective and fixed strategies

Shyu, Y. I., Archbold, P., & Imle, M. (1998). Finding a balance point: A process central to understanding family caregiving in Taiwanese families. *Research in Nursing & Health, 21*, 261-270.

Finding a balance point from caregiving process: Nursing invention

- **Increase the sensitivity of home care nurses to a family's conditions and actions**

- **Develop nursing interventions by**

  - linking past experiences with present conditions
  - mentally rehearse possible choices and probably outcomes
  - become familiar with balancing strategies and choose/implement strategies

Shyu, Y. I., Archbold, P., & Imle, M. (1998). Finding a balance point: A process central to understanding family caregiving in Taiwanese families. *Research in Nursing & Health, 21*, 261-270.

Development of Finding a Balance Scale

Finding a Balance Scale

We would like to understand the situation you may encounter while taking care of your family member, and how well you do in caregiving when facing competing needs. Please indicate the box that most appropriately reflects your condition.

Questions
1. While taking care of this family member, you also need to take care of another family member
2. While taking care of this family member, you also need to host guests
3. While taking care of this family member, you also need to do housework (e.g., cooking, laundry, or grocery shopping)
4. While taking care of this family member, you also need to work at your place of employment
5. You need more people to be involved in the caregiving, but face inconsistent caregiving due to multiple caregivers
6. While taking care of this family member, you also need to deal with your own health needs
7. While taking care of this family member, you need to rest due to tiredness
8. You need to take care of this family member at night when you need to sleep
9. You need to take care of this family member while attending social activities
10. You need to take care of this family member while running errands
11. You would like to follow a doctor or nurse's suggestions while also needing to consider this family member's unique situation, but feel that you cannot precisely follow the suggestions
12. You need to help this family member exercise while also attending to his/her safety
13. You must diaper this family member to maintain good hygiene; at the same time, you are concerned about potential diaper rash
14. You need to provide this family member with sufficient nutrition but also must prevent him/her from becoming overweight
15. You need to adapt to this family member's schedule, such as mealtimes, while also considering your own time management
16. You need to be patient with this family member and not make him/her angry while also finding ways to help him/her control his/her behavior
17. You need to consider this family member's emotions even though you are upset
18. Others

Handling condition:

(0) Unable to handle either

(1) Able to handle only one

(2) Able to handle both, but not well

(3) Usually able to handle both well

- Scale is calculated by adding the scores for items identified as competing needs and dividing by the total number of items reported as competing needs

Descriptive statistics and correlations of study measures (N=183)

Variable	Balance	Role Strain	Depression	Physical Health	Mental Health	Mutuality
Descriptive statistics						
Mean	2.25	1.11	13.81	49.61	49.64	1.74
SD	0.58	0.67	9.19	9.68	10.48	0.75
Correlations						
Balance	—					
Role strain	−.48**	—				
Depression	−.44**	.30**	—			
Physical health	.20**	−.18*	−.29**	—		
Mental health	.44**	−.28**	−.71**	.11	—	
Mutuality	.04	−.18*	−.05	−.03	.18*	—

Note. SD, standard deviation.
*$p < .05$.
**$p < .01$.

Liu, H.-Y., Wang, Y.-N., Huang, H.-L., Hsu, W.-C., Lin, Y.-E, Huang, T.-H., & Shyu, Y.-I. L.* (2014). Psychometric properties of the finding a balance scale for family caregivers of elders with dementia in Taiwan. *Research in Nursing & Health, 37*(4), 336-346.

Performance of finding a balance scale at different cutoff scores with CES-D with cutoff ≥16

Finding A Balance Scale Cutoff Score	Kappa	Sensitivity	Specificity	PPV	NPV
≤1.8	.36	.44	.89	.67	.76
≤2.0	.50	.73	.79	.63	.86
≤2.2	.42	.81	.66	.54	.88

Liu, H.-Y., Wang, Y.-N., Huang, H.-L., Hsu, W.-C., Lin, Y.-E, Huang, T.-H., & Shyu, Y.-I. L.* (2014). Psychometric properties of the finding a balance scale for family caregivers of elders with dementia in Taiwan. *Research in Nursing & Health, 37*(4), 336-346.

Construct validity of the Finding a Balance Scale vs. the Role Strain Scale and the SF-36 Mental Health Component Summary (MCS)

Finding a Balance	Role Strain			Mental Health (SF-36 MCS)		
	n	Mean (SD)	t^a	n	Mean (SD)	t
Good (score >2.0)	105	0.88 (.54)	–5.72**	109	53.57 (8.59)	7.07**
Poor (score <2.0)	67	1.47 (.72)		70	43.52 (10.27)	

Note. SD, stand deviation; SF-36 MCS, Medical Outcomes Study Short Form.
[a]t-Test with the Satterthwaite approximation for unequal variances.
**$p < .01$.

Liu, H.-Y., Wang, Y.-N., Huang, H.-L., Hsu, W.-C., Lin, Y.-E, Huang, T.-H., & Shyu, Y.-I. L.* (2014). Psychometric properties of the finding a balance scale for family caregivers of elders with dementia in Taiwan. Research in Nursing & Health, 37(4), 336-346.

D

Model Testing:
Balance as mediator between caregiving demand and caregiver role strain

Conceptual framework for understanding the family caregiving process in Taiwan

Caregiving Factors
Caregiving resources
Self-expectations of caregiver
Caregiving task difficulty
Knowledge about care receiver

Caregiving Characteristics
Characteristics of caregiver
Characteristics of care receiver
Quality of relationship between caregiver and care receiver

Caregiving Process of Finding a Balance Point

Caregiving Consequences
Quality of care
Caregiver outcome
Family outcome

Shyu, Y. I. (2002). A conceptual framework for understanding family caregiving process to frail elders in Taiwan. *Research in Nursing & Health, 25*(2), 111-121.

Bivariate correlations and regressions among overall caregiving consequences and related variables (N=125)

Independent Variables	Bivariate Correlations	Regression
Caregiving characteristics		
Caregiver's age	- .23**	- .24**
Caregiver's gender	.17	.13
ADLs of care receiver	.02	.03
Quality of relationship	.25**	.06
Caregiving factors		
Caregiving resources	.37**	.30*
Self-expectation of caregiver	.31**	.05
Caregiving task difficulty	- .20*	.02
Knowledge about care receiver	.35**	.10
Caregiving process of finding a balance point	.24**	.28**
R^2		.32
Adj R^2		.26
F		5.88**

Dependent variable is overall caregiving consequences. *$p<.05$. ** $p<.001$.

Shyu, Y. I. (2002). A conceptual framework for understanding family caregiving process to frail elders in Taiwan. *Research in Nursing & Health, 25*(2), 111-121.

Standardized coefficients and explained variance of final model for each outcome variables (N=176)

Variable	Role Strain	Caregiving Reward of Being There	Caregiving Reward Meaning	Caregiving Reward Learning	Depressive Symptoms	Mental Health
Age	–0.12	0.05	0.03	–0.11	–0.01	0.10
Gender	0.09	–0.07	–0.05	–0.11	–0.11	–0.01
MMSE	–2.1**	0.15*	0.05	–0.04	–0.13	0.15*
Demand	0.13	0.09	0.08	0.10	0.13	–0.14
Mutuality	–0.33**	0.37**	0.33**	0.08	–0.19*	0.22**
Preparedness	–0.06	0.27**	0.30**	0.34**	–0.11	0.20**
Balance	–0.03	–0.06	–0.08	–0.17*	–0.16*	0.19*
Demand x Balance	–0.11	0.17**	0.18**	0.20**	0.06	–0.12
R^2 (%)	23.9	38.8	33.8	28.3	12.5	17.7
Adjusted R^2 (%)	20.2	35.8	30.5	24.8	8.3	13.6

Shyu, Y.-I. L., Yang, C.-T., Huang, C.-C., Kuo, H.-C., Chen, S.-T., & Hsu, W.-C. (2010). Influences of mutuality, preparedness and balance on caregivers of patients with dementia. *The Journal of Nursing Research, 18*(3), 155-163.
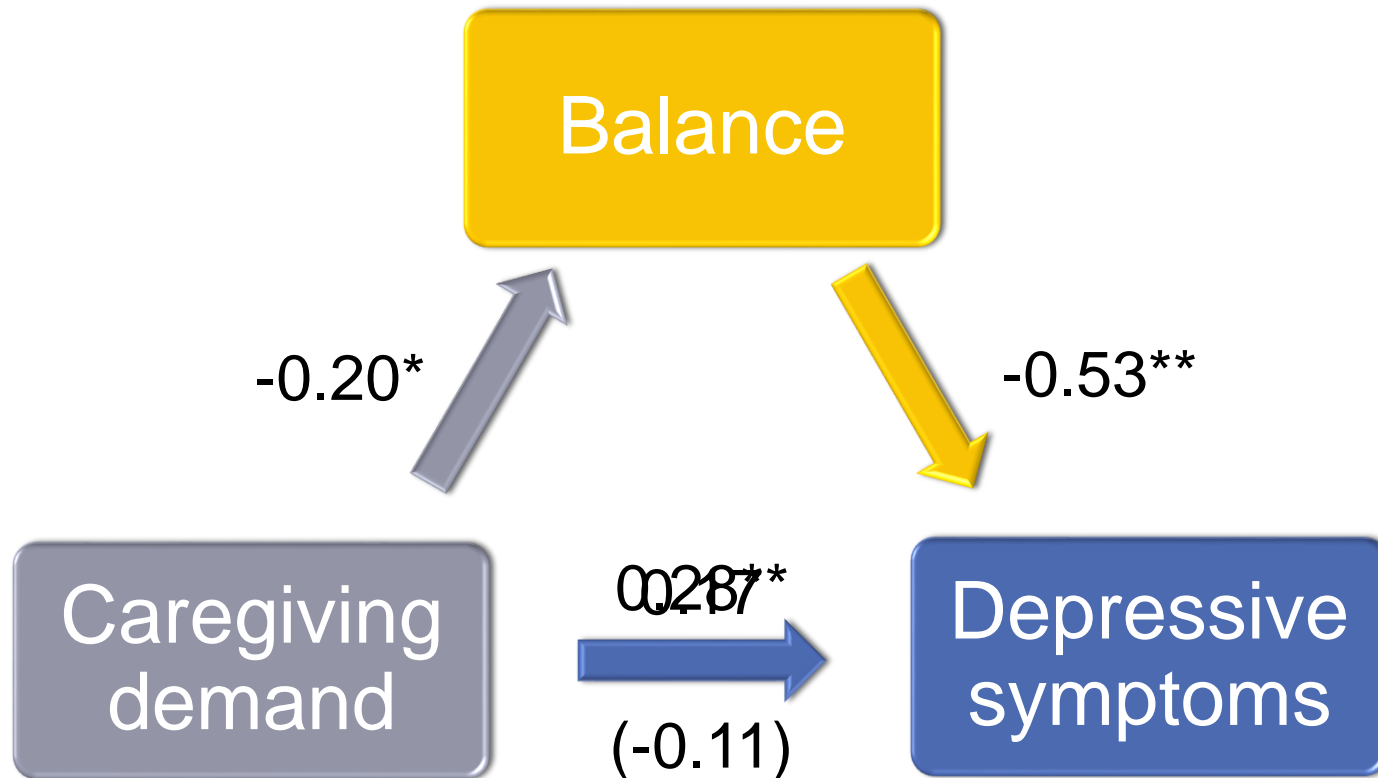
Simple regression equations for predicting caregiving rewards from demand for high and low balance

Caregiving Reward Level of Balance	Simple Regression Equations	p
Reward of being there		
Low balance	y = 2.42 – 0.004 demand	.520
High balance	y = 2.25 + 0.022 demand	.003
Reward of meaning		
Low balance	y = 2.31 – 0.001 demand	.870
High balance	y = 2.11 + 0.023 demand	.002
Reward of learning		
Low balance	y = 2.69 – 0.004 demand	.446
High balance	y = 2.46 + 0.021 demand	.002

Shyu, Y.-I. L., Yang, C.-T., Huang, C.-C., Kuo, H.-C., Chen, S.-T., & Hsu, W.-C. (2010). Influences of mutuality, preparedness and balance on caregivers of patients with dementia. *The Journal of Nursing Research, 18*(3), 155-163.

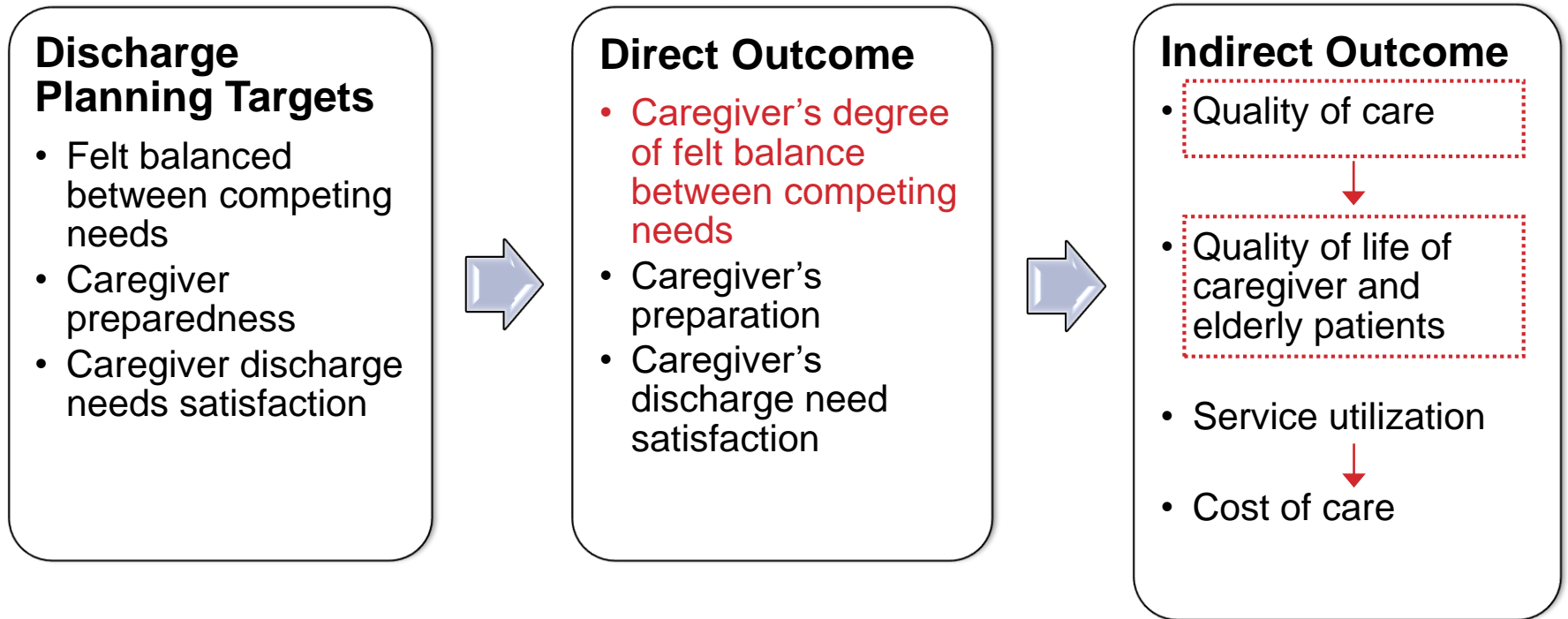# Balance as a partial mediator of caregiving demand on caregiver role strain, with standardized regression coefficients
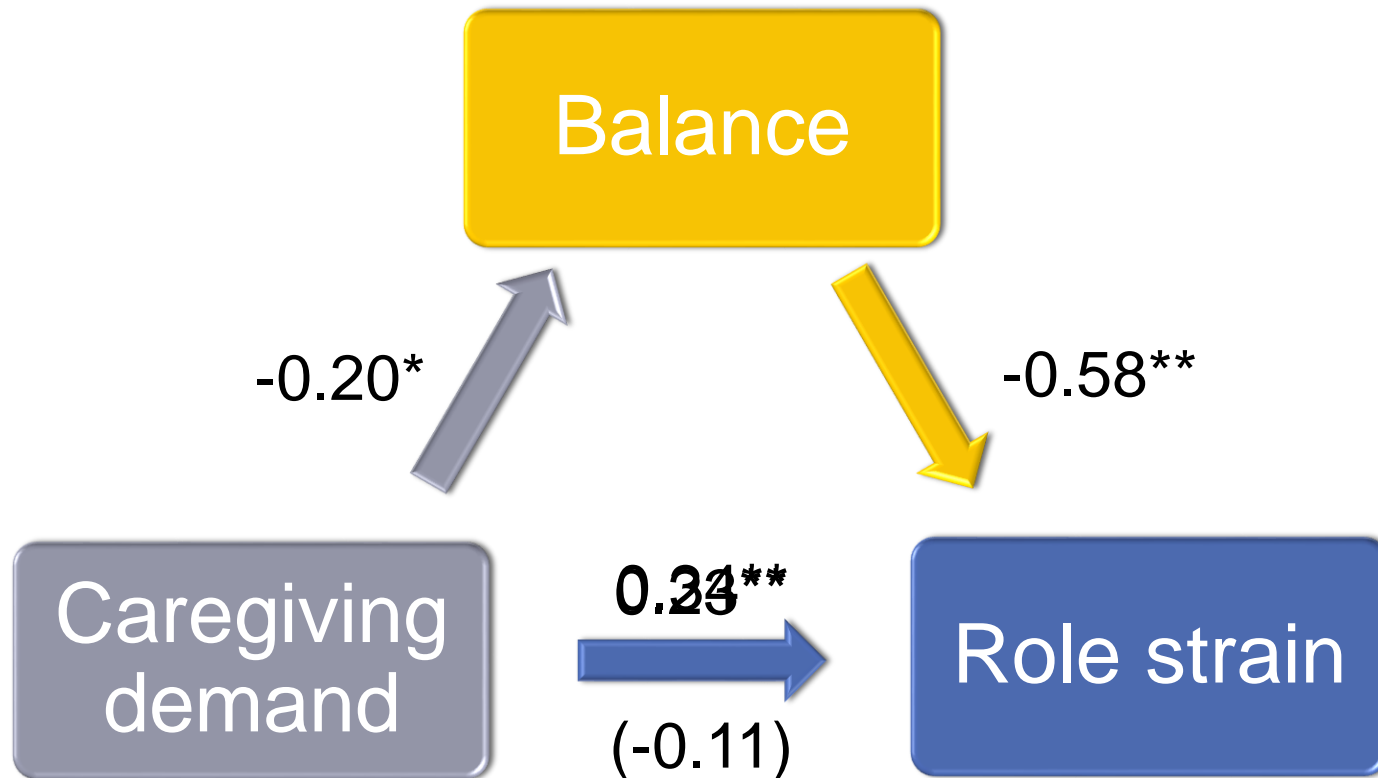
Balance as a complete mediator of caregiving demand on caregiver depressive symptoms, with standardized regression coefficients

Balance

-0.20*

-0.53**

Caregiving demand

0.287*
0.18

(-0.11)

Depressive symptoms

Intervention Study

Conceptual framework

Discharge Planning Targets

- Felt balanced between competing needs
- Caregiver preparedness
- Caregiver discharge needs satisfaction

Direct Outcome

- Caregiver's degree of felt balance between competing needs
- Caregiver's preparation
- Caregiver's discharge need satisfaction

Indirect Outcome

- Quality of care
- Quality of life of caregiver and elderly patients
- Service utilization
- Cost of care

Discharge preparation services for experimental and control groups

	Experimental group	Control group
In hospital	• Assess individual discharge needs within 48 hours of admission	• Occasionally inconsistent
	• **Consultation to anticipate competing needs after discharge**	• None
	• Provide individualised discharge health educational consultation and referrals	• None
Post hospital	• Home visits during weeks 1 and 3 after discharge to detect/resolve problems or demonstrate skills	• None

Shyu, Y. I. L., Kuo, L. M. ,Chen, M. C., & Chen, S. T. (2010). A clinical trial of an individualised intervention programme for family caregivers of older stroke victims in Taiwan. *Journal of Clinical Nursing. 19*(11), 1675-1685

Characteristics of older stroke patients

Variable	Experimental group (n=72) Mean (*SD*) or *n* (%)	Control group (n=86) Mean (*SD*) or *n* (%)	*p*
Age, years, mean (*SD*)	74.1 (6.5)	74.2 (6.5)	0.95
Gender			0.33
Male	28 (38.9)	45 (52.3)	
Female	44 (61.1)	41 (47.7)	
Marital status			0.57
Married	46 (63.9)	55 (64.0)	
Widowed	25 (34.7)	30 (34.9)	
Separated	1 (1.4)	1 (1.2)	
Educational background			0.28
No formal education	29 (40.3)	34 (39.5)	
Primary school	29 (40.3)	43 (50.0)	
High school	12 (16.6)	9 (10.5)	
College or above	2 (2.8)	0 (0)	
Number of strokes			0.96
1	41 (56.9)	49 (57.0)	
2	26 (36.1)	32 (37.2)	
≥ 3	7 (7.0)	5 (5.9)	

Characteristics of older stroke patients

Variable	Experimental group (n=72) Mean (*SD*) or *n* (%)	Control group (n=86) Mean (*SD*) or *n* (%)	*p*
Type of stroke			0.15
Ischemic	22 (30.6)	41 (47.7)	
Infarction	41 (56.9)	36 (41.9)	
Hemorrhagic	8 (11.1)	7 (8.2)	
Transient ischemic attack	1 (1.4)	2 (2.3)	
Fully aware	65 (90.3)	74 (86.0)	0.68
Self-care ability at admission[a], mean (*SD*)	49.9 (28.4)	48.5 (30.4)	0.77
Having normal hearing or vision at admission	35 (48.6)	41 (47.7)	0.43
Chronic illnesses ≥ 2	47 (54.7)	40 (55.6)	1.00
Received hospital discharge services			1.00
Yes	2 (2.8)	3 (3.5)	
No	70 (97.2)	83 (96.5)	
Previous living status			1.00
Institution	1 (1.4)	1 (1.2)	
Home	71 (98.6)	85 (98.8)	

[a] Assessed by Chinese Barthel Index

Shyu, Y. I. L., Kuo, L. M. ,Chen, M. C., & Chen, S. T. (2010). A clinical trial of an individualised intervention programme for family caregivers of older stroke victims in Taiwan. *Journal of Clinical Nursing. 19*(11), 1675-1685

Effects of discharge planning program on caregivers using Wilcoxon's sign rank test (within-group comparison)

Variables	Experimental group			Control group		
	First assessment Mean (*SD*)	Second assessment Mean (*SD*)	Z and *p*-value	First assessment Mean (*SD*)	Second assessment Mean (*SD*)	Z and *p*-value
Nurse evaluation of caregiver preparation[a]	11.03 (1.85)	12.75 (1.83)	-4.92 < 0.001***	11.10 (2.04)	11.76 (2.25)	2.52 0.01*
Caregiver self-evaluation of preparation[a]	23.36 (6.48)	26.00 (5.16)	-4.90 < 0.001***	22.45 (6.72)	23.13 (6.54)	-1.65 0.09
Caregiver satisfaction of discharge needs[b]	3.07 (0.60)	3.55 (0.47)	-7.22 < 0.001***	1.91 (0.71)	2.09 (0.79)	-7.77 < 0.001***

[a]The first assessment was at admission and the second assessment was before discharge.
[b]The first assessment was before discharge and the second assessment was after discharge.
*$p < 0.05$, ***$p < 0.001$.

Shyu, Y.-I. L., Chen, M.-C., Chen, S.-T., Wang, H.-P., & Shao, J.-H. (2008). A family caregiver-oriented discharge-planning program for older stroke patients and their family caregivers. *Journal of Clinical Nursing, 17*, 2497-2508.

Effects of discharge planning program on caregivers using Mann–Whitney U-test (between-group comparison)

Variable	Experimental group Mean (*SD*)	Control group Mean (*SD*)	Z	*P*-value
Caregiver preparation (Nurse evaluation)				
First assessment (at admission)	11.07 (1.81)	11.09 (2.01)	-0.13	0.90
Second assessment (before discharge)	12.75 (1.83)	11.73 (2.25)	2.92	0.004*
Caregiver preparation (Self-evaluation)				
First assessment (at admission)	23.36 (6.48)	22.45 (6.72)	-0.68	0.49
Second assessment (before discharge)	26.00 (5.15)	23.13 (6.54)	-2.66	0.008*
Caregiver discharge needs satisfaction				
First assessment (before discharge)	3.07 (0.60)	1.91 (0.71)	-0.10	0.92
Second assessment (after discharge)	3.56 (0.48)	2.07 (0.82)	-8.12	< 0.001***
Perceived balance between competing needs (after discharge)	2.70 (0.49)	2.59 (0.49)	-1.94	0.35

*$p < 0.05$, ***$p < 0.001$.

Shyu, Y.-I. L., Chen, M.-C., Chen, S.-T., Wang, H.-P., & Shao, J.-H. (2008). A family caregiver-oriented discharge-planning program for older stroke patients and their family caregivers. *Journal of Clinical Nursing, 17*, 2497-2508.

Outcomes

Patients with stroke

- **Institutionalisation rates for patients in the experimental group (N=0, 0%) were significantly lower than those of control group patients (N=6, 7.2%) between months 6–12**

- **No significantly different in**
  - average length of hospital stay
  - hospital readmission rate
  - self-care ability
  - quality of life

Caregiver

- **Caregivers in the experimental group provided significantly better quality of care than the control group**

- **Two groups of caregiver did not differ significantly for most dimensions of *quality of life* during the 1st year after discharge**

Shyu, Y. I. L., Kuo, L. M. ,Chen, M. C., & Chen, S. T. (2010). A clinical trial of an individualised intervention programme for family caregivers of older stroke victims in Taiwan. *Journal of Clinical Nursing. 19*(11), 1675-1685

Acknowledgement

Collaborators

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Research team

Thank You for Listening

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