

Effectiveness of an Autonomous Interest-Driven Mechanism on Activity Participation Among Older Adults in Day Care Centers

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ABSTRACT

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Poster

INTRODUCTION / BACKGROUND

Taiwan's elderly population has exceeded 20%, officially entering a super-aged society. The national dementia prevalence rate stands at 7.99%, rising sharply to 23.23% among adults aged 85 and above. There are approximately 360,000 people with dementia in Taiwan.

Adult day care centers serve as critical community long-term care hubs, delaying functional decline through cognitive, physical, and social activities while supporting family caregivers. In practice, however, mixed enrollment is common-older adults differ greatly in cognitive level, physical function, and personal interests.

Core Problem:

Traditional group activities struggle to meet diverse needs, resulting in insufficient participation, unstable engagement, and passive compliance, compounding burden on care workers.

OBJECTIVES

- 1 **Interest-Activity Alignment**

Improve interest-activity alignment by implementing an interest-driven classification and matching system, with significant improvement on perceived interest relevance (p < .05).
- 2 **Autonomous Course Switching**

Enable autonomous course selection/switching: ≥50% of residents exercise choice at least once; cumulative switches ≥5 over 10 weeks.
- 3 **Bilateral Satisfaction**

Achieve ≥80% satisfaction ("agree" or "strongly agree" on Q1) among both residents and care staff.

METHODS

Design: Single-group pre-post design, 10-week intervention
Instruments: 6-item 5-point Likert scales (residents & staff).

SETTING & PARTICIPANTS

Setting: Adult Day Care Center— mixed dementia/disability model with 7 "small home" units (1:8 staff ratio).

Phase 1

Weeks 1–2: Planning

- Individual interest interviews
- Dynamic/Static Activity Classification Table
- Staff orientation (15-min scenario training)

Phase 2

Weeks 3–10: Implementation

- Daily pre-session "quick matching" (interest profile)
- Real-time course switching when disengagement observed
- Three-tier adaptive facilitation:
 - Independent (intact): self-directed
 - Scaffolded (mild): step-by-step verbal cues
 - Hand-over-hand (mod-severe): physical guidance
- Weekly review of transfer logs & low-participation cases

Phase 3

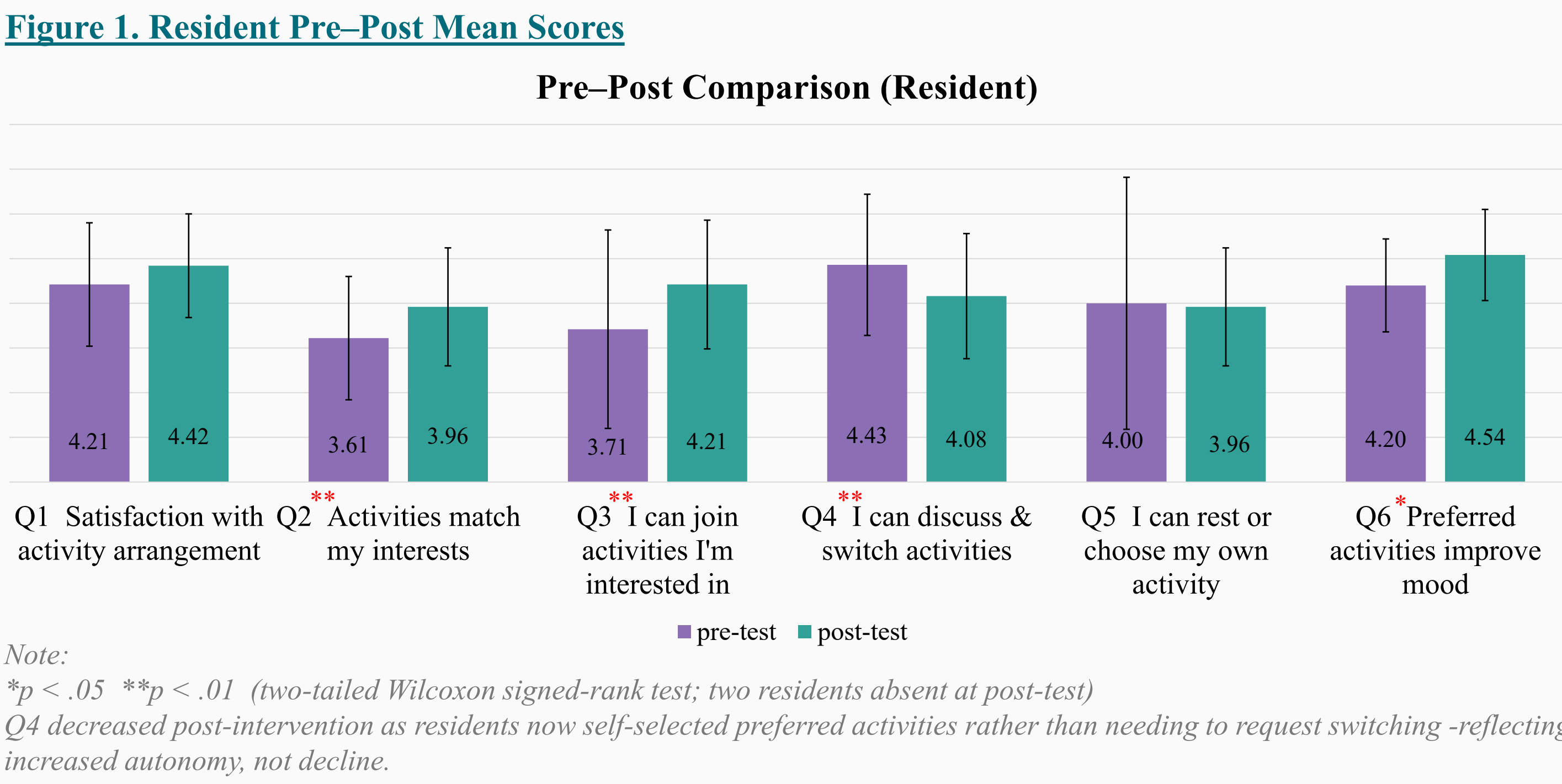
Weeks 11–12: Evaluation

- Post-test surveys (residents & staff)
- Focus group discussion on feasibility
- SOP documentation for sustained implementation

RESULTS

Participant Characteristics			
Total screened	Enrolled (intact/mild)	Mean age (years)	Female
55	28	80.2	74.5%
Mean ADL score	Cognitive function distribution - SPMSQ (N = 55)		Care staff interviewed
75/100	Intact 25.5%	Mild 23.6%	13
	Moderate 23.6%	Severe 27.3%	

Resident Satisfaction (Post-test)	Staff Satisfaction (Post-test)	Cumulative Course Switches	Units with ≥1 Course Switch
96.2%	83.3%	7	5/7



Item	Pre-test (Mean ± Standard Deviation)	Post-test (Mean ± Standard Deviation)	p
Q1 Activities matching interests and function level	3.86 ± 1.07	4.17 ± 0.75	.317
Q2 Respect the elderly’s choice of activities they prefer.	3.86 ± 1.07	3.83 ± 0.98	.317
Q3 Able to choose interesting activities	3.71 ± 1.11	3.83 ± 0.98	.157
Q4 Tailor activities based on interests and functions	4.43 ± 0.79	4.17 ± 0.75	.317
Q5 Know individual preferences and guide accordingly	4.00 ± 1.41	4.17 ± 1.17	.157
Q6 Can instantly identify and address situations	3.86 ± 1.46	4.33 ± 1.21	.102



DISCUSSION

Interest Alignment & Participation

Residents reported significantly higher interest match (Q2, p=.004) and greater opportunity to join preferred activities (Q3, p=.004). These results support autonomy-based programming in dementia care, consistent with self-determination theory (Chang & Chen., 2019).

Emotional Well-being

Mood improvement (Q6, p=.035) suggests self-selected activities confer emotional benefits. Activity-choice has been associated with reduced agitation and increased affect in persons with dementia (Logsdon et al., 2007; Gitlin et al., 2012).

Operational Feasibility

Seven switches across 5/7 units confirm operational feasibility within existing staffing. The institution concurrently granted staff direct system access for course logging, supporting scalability without additional personnel (Chung., 2020).

Care Staff Outcomes

Staff scores trended upward but did not reach significance. Qualitative feedback confirmed improved facilitation confidence and reduced frustration when residents were redirected to preferred activities. Larger staff samples are needed in future studies.

Increased autonomy in activity participation

The post-test decline in Q4 (“I can discuss & switch activities”) likely reflects reduced need-residents now self-selected preferred activities rather than requesting switches, suggesting the mechanism became transparent and autonomous.

CONCLUSION

An autonomous interest-driven mechanism - integrating individualized interest profiling, dynamic/static activity classification, and real-time course switching -significantly improved older adults' perceived interest alignment, participation opportunity, and mood in a dementia day care setting.

Limitations:

Single-group design; 10-week period; underpowered staff sample; moderate-severe dementia excluded from quantitative analysis.

Future Directions:

Controlled studies with longer follow-up, observation-based measures for moderate-severe dementia, multi-site replication, and exploration of digital matching tools to automate interest profiling.

