

Factors associated with engagement in work-related activities among persons with dementia or mild cognitive impairment: A cross-sectional study

Erika Kamo ¹⁾, Yuma Sonoda ^{1), 2)}, Takuma Yuri ³⁾, Kayano Yotsumoto ¹⁾, Hisatomo Kowa ¹⁾

1) Department of Rehabilitation Science, Kobe University Graduate School of Health Sciences

2) Advanced Research Center for Well-being, Kobe University

3) Department of Occupational Therapy, Kyoto Tachibana University

Supported by a grant from the Japan Science and Technology Agency SPRING (JPMJSP2148).

Introduction

- People with dementia or mild cognitive impairment (MCI) can experience exclusion from meaningful occupations.
- Need to “connect with society and contribute meaningfully.”
(Hanne, *J Occup Sci.* 2023)
- In Japan, under Long-Term Care Insurance, they can conditionally engage in work-related activities.



Examples of work-related activity among people with dementia or MCI

Engagement in work-related activities

Intervention studies report mixed results on well-being

- Significant improvement (Ura, *BMC Geriatr.* 2021)
- ✗ No improvement (George, *Qual Life Res.* 2011)

Qualitative evaluations (interviews & observations) show:

Individual differences in engagement

Engagement = the act of being occupied or involved

Engagement during work-related activities may be related to improvement of mental well-being

Engagement in work-related activities

Intervention studies report mixed results on well-being

- Significant improvement (Ura, *BMC Geriatr.* 2021)
- ✗ No improvement (George, *Qual Life Res.* 2011)

Qualitative evaluations (interviews & observations) show:

Individual differences in engagement

Engagement = the act of being occupied or involved

Objective: Investigate the factors influencing engagement in work-related activities among persons with dementia or MCI.

Methods

Ethics Statement:

Health Sciences Ethics Committee of the Kobe University
Graduate School (approval number: 1214)

Design:

Multicenter cross-sectional study

Setting:

7 day-care centers in Japan



Methods

Definition of work-related activities:

Volunteer activities that contribute to others and the community as part of the day-care center's social participation support program.

Inclusion criteria:

- Receiving day care service and participating in work-related activities for at least 6 months
- Diagnosed with dementia or MCI, or MMSE-J score ≤ 27 .

Exclusion criteria:

- Experience of a life event (e.g., personal major injury) in the last 3 months (Holmes, *J Psychosom Res.* 1967)

Methods (Data collection)

Content	measures
Individual	Mental well-being (World Health Organization-Five Well-Being Index; WHO-5), sex, age, educational history, comorbidities, dementia severity, hospitalization history, frailty (Cardiovascular Health Study criteria), social limitations (due to vision loss, hearing loss, and physical pain), activities of daily living (the Tokyo Metropolitan Institute of Gerontology Index of Competence: TMIG-IC), consistency of prior experience
Stimulus	Time/session, sessions/week
Environment	Activity location, activity place (indoor or outdoor), and number of people in the group
Engagement	Assessment of Quality of Activities (A-QOA)

(Cohen-Mansfield, *Int J Geriatr Psychiatry*. 2009; Cohen-Mansfield, *Am J Geriatr Psychiatry*. 2011)

What is Assessment of Quality of Activities?

- Client-centered assessment tool that evaluates the effectiveness and meaningfulness of activities.
- An observational assessment tool developed by occupational therapists to enable occupation-based practice.
- Consists of 21 items (e.g., Initiation, Satisfaction, Communication)
- Four-point scale based on the frequency and intensity
(1 = not observed, 2 = observed to a limited or questionable extent,
3 = observed, 4 = observed as a strong or exceptional tendency)
- Higher scores indicate more positive reactions to the activity

(Ogawa, *Am J Occup Ther* 2021)



More about the A-QOA↑

Methods (Statistical Analysis)

- Spearman's rank correlation (ρ)
 - Correlation between engagement (A-QOA) and well-being (WHO-5)
- Multiple regression analysis
 - Dependent variable: A-QOA
 - Independent variables: individual, stimulus, environmental factors
 - Variable selection: stepwise BIC
 - Multicollinearity checked using VIF
- Statistical software: EZR v1.54
- Significance level: $p < 0.05$

Results

Characteristics of Participants

	All	<i>n</i> = 63
Age, years, median (IQR)	83	(61, 94)
Sex, <i>n</i> (%)		
Male	16	(25.4)
Female	47	(74.6)
Education, years, median (IQR)	12	(8, 18)
Hospitalization within 1 y, <i>n</i> (%)		
Yes	5	(7.9)
No	58	(92.1)
MMSE-J score, median (IQR)	19	(4, 27)
WHO-5 score, median (IQR)	18	(11, 25)
A-QOA, mean (SD)	2.93	(0.68)
A-QOA, <i>n</i> (%)		
> 2.5 probit	41	(65.1)
< 2.5 probit	22	(34.9)
Comorbidity, median (IQR)	2	(0, 7)

Hearing loss, <i>n</i> (%)		
Not applicable	47	(74.6)
Not quite applicable	5	(7.9)
Somewhat applicable	6	(9.5)
Very applicable	5	(7.9)
Vision loss, <i>n</i> (%)		
Not applicable	37	(58.7)
Not quite applicable	16	(25.4)
Somewhat applicable	7	(11.1)
Very applicable	3	(4.8)
Physical pain, <i>n</i> (%)		
Not applicable	35	(55.6)
Not quite applicable	10	(15.9)
Somewhat applicable	17	(27.0)
Very applicable	1	(1.6)
Frailty, <i>n</i> (%)		
Non-frail	50	(79.4)
Frail	13	(20.6)
TMIG-IC, mean (SD)	5.43,	(3.32)
Prior experience, <i>n</i> (%)		
Consistency	35	(55.56)
Non-consistency	28	(44.44)

Characteristics of work-related activities

$n = 63$ (7 facilities)

Activity type Car washing, preparations for the children's cafeteria and coffee shop, cleaning, remaking kimono, wrapping toilet paper, pasting shoji (paper sliding doors), sashiko (stitching), threading drawstring, making thread for sakiori (weaving), festival preparations, posting, leaflet insertion and distribution, field work, weeding, handbells practice (for performances at facilities)



Car washing



Preparations for cafeteria



Cleaning



Remaking kimono

Examples of types of activities

Characteristics of work-related activities

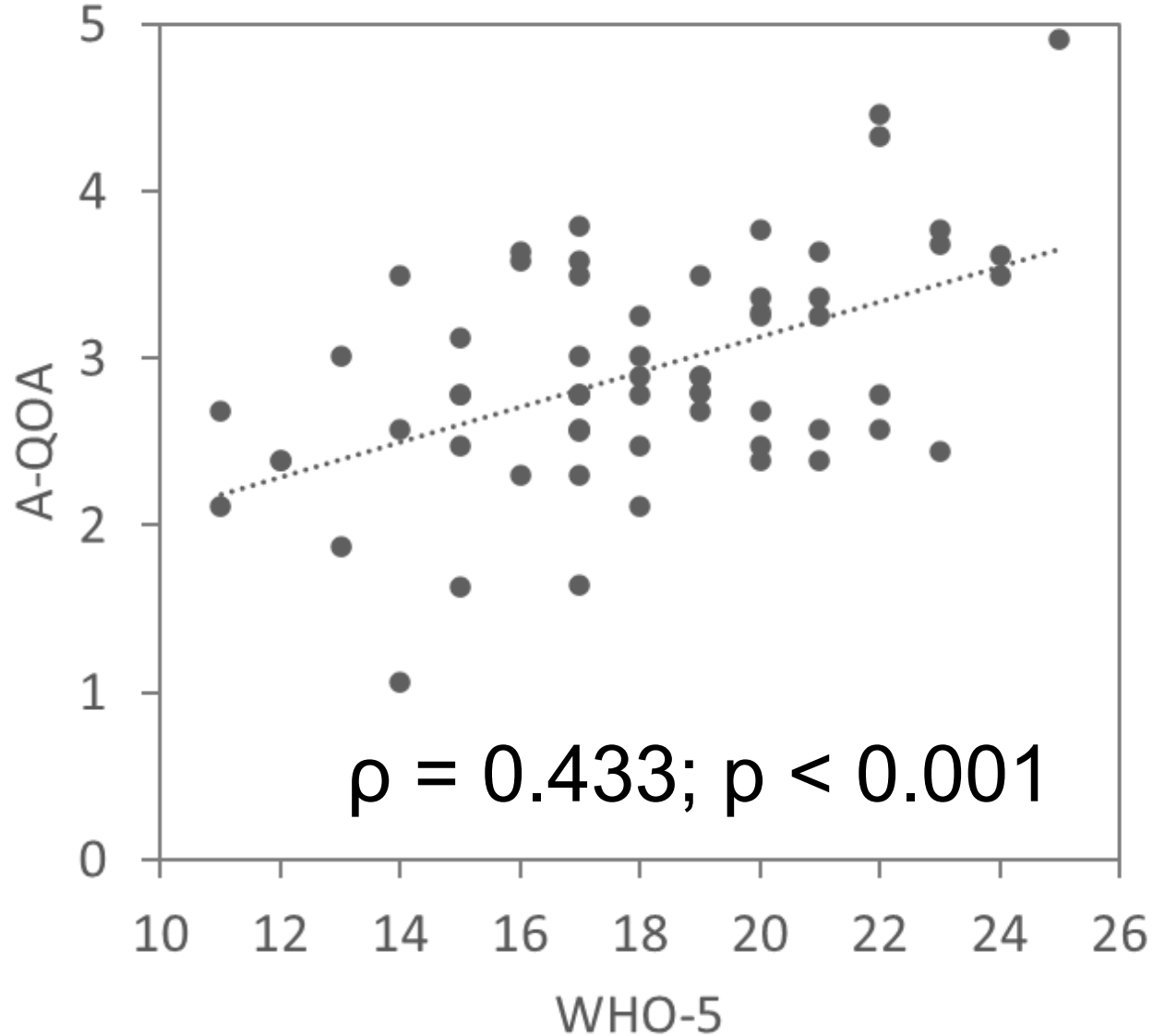
$n = 63$ (7 facilities)

Hours/session, median (IQR)	1.00 (0.40, 3.00)
Sessions/week, median (IQR)	1.00 (0.10, 5.00)
Place, n (%)	
Indoor	43 (68.3)
Outdoor	20 (31.7)
Number of people in the group, median (IQR)	5.00 (1.00, 10.00)



Examples of types of activities

Relationship between engagement in work-related activities and mental well-being



**Positive correlation
between engagement
and mental well-being**

Factors related to engagement in work-related activities

n = 63

Independent variable	β	t	SE	95% CI	<i>p</i> -value	VIF
Well-being	0.480	4.461	0.022	(0.054, 0.143)	< 0.001	1.117
Frequency	0.337	3.053	0.113	(0.118, 0.569)	0.003	1.176
Hearing loss	0.286	2.621	0.194	(0.120, 0.895)	0.011	1.147
Multiple R^2 : 0.389					< 0.001	
Adjusted R^2 : 0.358						

Engagement was associated with well-being, frequency of participation, and hearing loss.

Discussion

Factors associated with greater engagement in work-related activities were:

- **Better mental well-being**

- Increasing engagement may influence mental well-being through work-related activities

- **Higher frequency of participation**

- Repeated involvement may promote habitual, smoother performance and social interaction

- **Hearing loss**

- Individualized support and visual cues in group-based work activities may compensate for hearing loss

Discussion

Factors associated with greater engagement in work-related activities were:

- **Better mental well-being**

- Increasing engagement may influence mental well-being through work-related activities

- **Higher frequency of participation**

- Repeated involvement may promote habitual, smoother performance and social interaction

These factors could enhance engagement and promote well-being in persons with dementia or MCI

Limitations

- Cross-sectional design

Causal relationships cannot be determined

- Convenience sampling

Potential selection bias

Limited generalizability

- Limited sample size

Restricted number of variables in regression analysis

Some relevant factors may have been overlooked

- Incomplete assessment of environmental factors

Light, sound, and number of support workers were only partially examined

Limitations

- Cross-sectional design

Causal relationships cannot be determined

- Convenience sampling

Potential selection bias

Limited generalizability

- Limited sample size

Restricted number of variables in regression analysis

Future studies:

Larger samples and longitudinal designs are needed

Thank you very much for your attention.

Erika Kamo, PhD Candidate
Graduate School of Health Sciences
Kobe University



Email: e.kamo0413@gmail.com

