

# Depressive symptoms in community-dwelling older adults in Japan before and during the COVID-19 pandemic

The Coronavirus disease 2019 (COVID-19) pandemic increases the prevalence of poor psychological symptoms.<sup>1</sup> The feeling of uncertainty related to this pandemic, and the dramatic behavioural changes required by means of social distancing and stay-at-home strategies may lead to mental health deterioration in all ages.<sup>2</sup> Although depressive symptoms during the COVID-19 pandemic are slightly more prevalent in younger adults than in older adults,<sup>1</sup> social connectedness is significantly important for older adults' psychological health to attenuate depression and anxiety.<sup>3</sup> However, the change in psychological status among community-dwelling older adults during this pandemic has not been insufficiently studied. Hence, this cohort study aimed to analyse the prevalence of depressive symptoms during the COVID-19 pandemic among community-living older adults in Japan and determine the associated factors.

Our questionnaire survey was conducted using methods described previously.<sup>4</sup> On 6 February 2019, the institutional ethics committee approved our study (Protocol Number.: Sourin-18-16). We included participants who responded between December 2019 and July 2020. The five- and 15-item Geriatric Depression Scales (GDS) were used to assess the depressive symptoms before and during the pandemic, respectively. This scale was validated to screen major depressive symptoms (i.e.,  $\geq 2$  on the 5-item GDS and  $\geq 5$  on the 15-item GDS).<sup>5</sup> Participants' baseline characteristics included age, gender, family size, educational level, social connections (whether they have advisers and receive consultation), presence of comorbidities and cognitive impairment. Cognitive impairment was assessed by using the Dementia Assessment Sheet for Community-based Integrated Care System 21 items (DASC-21), and the cut-off score of 30/31 indicated dementia.<sup>6</sup> We calculated the prevalence of depressive symptoms to obtain descriptive statistics. Furthermore, the factors associated with depressive symptoms development during the pandemic were identified using a logistic regression model. All statistical data were analysed using STATA 16.0 (StataCorp, TX, USA), and the significance level was set at  $<5\%$ .

The study included 569 respondents, with an average age of  $77.6 \pm 6.9$  years and females up to 252 (51.4%). Before the pandemic, the prevalence of depressive symptoms was 25.8%, which slightly increased to 32.3% during the pandemic. Of the 422 respondents without depressive symptoms before the pandemic, 79 (18.7%)

developed such symptoms during the pandemic. After controlling for all factors, we found that the respondents with dementia were more likely to develop depressive symptoms than those without dementia (Table 1).

**TABLE 1** Factors associated with depressive symptoms development during the COVID-19 pandemic ( $N = 569$ )

Variables	Odds ratio (95% confidence interval)	
	Univariable logistic regression	Multivariable logistic regression
Age	1.03 (0.99–1.06)	1.02 (0.98–1.06)
Gender		
Male	1	1
Female	1.12 (0.70–1.82)	1.20 (0.71–2.03)
Educational level		
Elementary school/ junior high school	1	1
$\geq$ High school	0.93 (0.49–1.78)	0.98 (0.50–1.93)
Living situation		
With family members	1	1
Alone	1.06 (0.65–1.73)	0.79 (0.50–1.96)
Presence of comorbidities		
No	1	1
Yes	0.94 (0.48–1.83)	0.99 (0.55–1.78)
Dementia		
No	1	1
Have	2.89 (1.55–5.40)	2.25 (1.12–4.52)
Availability of an adviser		
Yes	1	1
No	2.73 (1.40–5.36)	2.22 (0.97–5.08)
Consultation from others		
Yes	1	1
No	1.95 (1.13–3.38)	1.15 (0.56–2.36)

The study revealed that the depressive symptoms prevalence among community-dwelling older adults in Japan slightly increased during the COVID-19 pandemic; especially, older adults with dementia were at a higher risk of developing depressive symptoms than those without dementia. People with dementia might be vulnerable to the adverse effects of environmental and social changes, resulting in increased psychological stress. In addition, the closure of social services negatively affected people with dementia and unpaid caregivers.<sup>7</sup> Nonetheless, the risk for dementia is reduced through engaging in physical, social and intellectual activities. Currently, the decision of whether to maintain social distancing to prevent virus transmission or to keep a social connection to improve mental health is a dilemma. Thus, enhancing remote support systems, especially for people with dementia, should be prioritised. However, the long-term effects of contagious diseases on mental health require further investigation.

#### KEYWORDS



COVID-19, dementia, depression, Japan

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#### CONFLICT OF INTEREST

There are no conflicts of interest to declare.

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#### DATA AVAILABILITY STATEMENT

The datasets during and/or analysed during the current study available from the corresponding author on reasonable request.

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