Recognition of the coronavirus disease 2019 pandemic and face mask wearing in patients with Alzheimer’s disease: an investigation at a medical centre for dementia in Japan

COVID-19 spreads from person to person through saliva droplets and aerosols from exhalation, talking, and a cough.1 A systematic review and meta-analysis on the management of severe viral respiratory infections, such as COVID-19, showed that physical distancing of at least 1 m and wearing a face mask or eye protection reduce the risk of viral infections.2 Among individuals who do become infected with COVID-19, those with hypertension, cardiovascular diseases, and diabetes have a greater risk of having a more severe infection.3 Furthermore, dementia has been shown to pose an increased risk for COVID-19.4 Therefore, preventing infection is of vital importance for patients with dementia. However, these patients may have difficulties understanding the risk of COVID-19 and taking measures against infection either by themselves or with the help of others. The purpose of the present study was to examine recognition of the COVID-19 pandemic and the status of face mask wearing in patients with Alzheimer’s disease (AD).

Patients with AD who visited the Medical Center for Dementia at Shinoda General Hospital in Yamagata, Japan, between May 2020 and July 2020 and who fulfilled the criteria for AD by McKhann et al. were enrolled in the study.5 Patients with severe dementia who could not understand the question of examiner or with a severe reduction in activities of daily living such as eating or moving by themselves were excluded. In total, 55 patients (20 men, 35 women; mean age: 83.4 ± 5.4 years) and their caregivers (family members) participated in this study. The means ± SD of the Mini-Mental State Examination and Clinical Dementia Rating (CDR) of these patients were 15.9 ± 5.4 and 1.5 ± 0.6, respectively. Semi-structured interviews on face mask wearing as a preventive measure against COVID-19 were conducted by a psychiatrist or clinical psychologist.

The interview consisted of three questions. Question 1 was ‘Why are you, the examiner, the caregiver, and other patients wearing a face mask?’ If a patient’s answer included words or expressions such as ‘coronavirus’, ‘new pneumonia’, and ‘to prevent transmission’, he or she was regarded as recognizing the COVID-19 pandemic. This question was considered superior to direct questions such as ‘Do you know about the COVID-19 pandemic?’, which could elicit an erroneous answer as an appearance-saving response.6 Question 2 was directed at the caregiver: ‘Does the patient wear a face mask properly or almost properly by himself or herself when necessary?’ If the patient did not wear a face mask properly or almost properly by himself or herself, we asked the caregiver question 3: ‘Can the patient wear a face mask properly or almost properly with your help?’

Statistical analyses were performed with Student’s t-test, Fisher’s exact test, and χ² test, where appropriate, using SPSS version 25 (IBM, Armonk, NY, USA). A P-value <0.05 was considered statistically significant.

The results of the semi-structured interviews are shown in Table 1. Only 21 of the 55 patients (38.2%) recognized the COVID-19 pandemic. These patients had a higher mean Mini-Mental State Examination score and lower mean CDR score than those who did not recognize the COVID-19 pandemic. Fourteen patients (25.5%) wore a face mask properly by themselves, but 41 patients (74.5%) did not. Patients who wore a face mask on their own had a lower mean CDR score (P = 0.004) and recognized the COVID-19 pandemic at a higher rate (P = 0.028) than those who did not wear a face mask on their own. Of the 41 patients who did not wear a face mask on their own, 34 (82.9%) could wear one with a caregiver’s help. There were no significant differences in mean
In our AD patients, the rate of recognition of the COVID-19 pandemic was only 38.2%. It is reasonable to ascribe this low rate to amnesia, as those who did not recognize the pandemic had the poorest cognitive function scores. However, Mori et al. reported that 86.1% of AD patients were able to recall large earthquakes they experienced (e.g. the Kobe earthquake in 1995). The authors suggested that emotional arousal enhanced episodic memory through the amygdala. It is possible that the COVID-19 pandemic induces less emotional arousal and retention of episodic memory than large earthquakes experienced.

Importantly, 74.5% of the patients did not wear face masks properly by themselves when necessary, most likely because of cognitive impairment, which also limited their pandemic recognition. However, 82.9% of these patients could wear a face mask with the help of their caregivers. This phenomenon was observed regardless of cognitive function score and recognition of the pandemic. It is suggested that instructing caregivers to help patients to wear a face mask is critical in preventing COVID-19 infection.

Last but not least, some of our patients (7/55, 12.7%) could not wear a face mask even with the help of caregivers. For these patients, different measures such as wearing of a face shield may be necessary.

**DISCLOSURE**

The authors have no conflicts of interest to report.

**ETHICS STATEMENT**

This study was approved by the Ethics Committee of Shinoda General Hospital. Written informed consent...
was obtained from all patients and their families for inclusion in this study and for publication of this report.

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