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home operators in emergent situations to utilize creative strategies such as repurposing larger spaces for physical distant group dining or permitting private-duty caregivers may assist with feeding and ultimately, maintain resident health and well-being. Limitations of this study include the single site for data collection and the lack of randomization to restrictions. Research is needed to identify other unintended consequences of social distancing and evaluate the efficacy of countermeasures to protect the well-being of nursing home residents.

### Supplementary Data

Supplementary data related to this article can be found online at <https://doi.org/10.1016/j.jamda.2020.08.032>.

### References

1. Services CfMaM. Guidance for Infection Control and Prevention of Coronavirus Disease 2019 in Nursing Homes. Baltimore, MD: Centers for Medicare and Medicaid Services; 2020.
2. Palese A, Bressan V, Kasa T, et al. Interventions maintaining eating independence in nursing home residents: A multicentre qualitative study. *BMC Geriatr* 2018; 18:292.
3. Services Centers for Medicare and Medicaid Services. Long-Term Care Facility Resident Assessment Instrument 3.0, User's Manual. Baltimore, MD: Centers for Medicare and Medicaid Services; 2018.
4. Snijders TAB, Bosker RJ. Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling. 2nd ed. Thousand Oaks, CA: Sage Publishers; 2012.
5. Courtemanche C, Garuccio J, Le A, et al. Strong social distancing measures in the United States reduced the COVID-19 growth rate. *Health Affairs* 2020;39 (Project Hope).

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## The Impact of COVID-19 Measures on Well-Being of Older Long-Term Care Facility Residents in the Netherlands



The fear of the new Coronavirus Disease 2019 (COVID-19) globally forced health authorities to take drastic actions to prevent spreading of infections among citizens. Long-term care facility (LTCF) residents are especially susceptible for fatal or severe outcomes of COVID-19 infection because of high prevalence of frailty and comorbidity, sometimes atypical COVID-19 symptoms, and circumstances such as insufficient personal protective equipment and testing capacity, and staff working while having mild symptoms.<sup>1,2</sup> On March 20, 2020, the Dutch government implemented a visitor ban in all LTCFs. In many instances physical visits were replaced by social contact via telephone and video calls, or through windows. Many LTCFs closed social facilities and stopped daytime

programs. Although the LTCF's policy prioritized safety, scarce attention was paid to well-being and autonomy. The study aims to gain insight into the consequences of COVID-19 measures on loneliness, mood, and behavioral problems in residents in Dutch LTCFs.

### Methods

A cross-sectional design was applied. Data were collected anonymously between April 30 and May 27, 2020, in 3 independent samples of residents without severe cognitive impairment (CI), family members of residents with and without CI, and care staff from all unit-types in Dutch LTCFs (nursing homes and residential care facilities), using a semi-open online survey. A total of 357 LTCF organizations were invited by e-mail to participate by distributing information about the study and a link to the survey to eligible participants. Classification of residents' loneliness level was assessed with 1 item.<sup>3</sup> Mood in residents was assessed with the Mental Health Inventory 5-index (MHI-5; range 0–100, scores <60 indicate poor mental health).<sup>4</sup> Change in frequency of residents' mood symptoms since the start of the visitor ban was assessed among relatives who had contact with residents in the 4 weeks before the assessment. Change in severity of problem behavior on unit-level was assessed among staff working in direct care, using 10 domains of behavioral functioning from the Neuropsychiatric Inventory.<sup>5</sup> Descriptive statistics, frequencies, independent *t* tests and  $\chi^2$  tests were performed using SPSS 25.0 (IBM Corp, Armonk, NY).

### Results

A total of 193 residents participated; 1387 of 1609 relatives had spoken with a resident in the past 4 weeks; 849 (61%) were relatives of a resident with CI. There were 623 of 811 care professionals who worked in direct care; 246 (39%) in psychogeriatric units.

Loneliness was reported by 149 (77%) residents: 50% perceived themselves as moderately, 16% as strongly, and 11% as very strongly lonely. Relatives and staff classified respondents as not lonely (14%; 19%, respectively), moderately (50%; 34%), strongly (25%; 31%), and very lonely (11%; 16%). Staff classified residents without CI more lonely than residents with CI ( $P < .006$ ).

Mean MHI-5 score for residents was 56.6 (SD 20.4), 51% had scores <60. Only 27% of relatives reported no change in residents' mood status. On average, the frequency increased in 2.2 (SD 1.9) of 6 mood symptoms (Figure 1). Changes were reported more often in residents without CI ( $P = .035$ ). Happiness was less often and sadness was more often reported by family of residents without CI than with CI ( $P = .000$ ;  $P = .008$ , respectively).

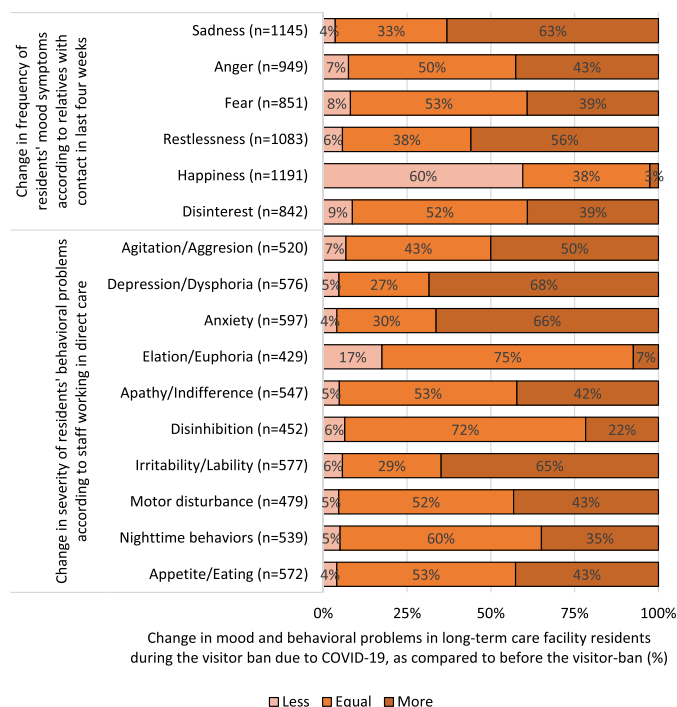
More than half of the staff reported an increase in severity of agitation, depression, anxiety, and irritability (Figure 1). On average, an increased severity in 4.0 (SD 2.7) of 10 problem behaviors was reported on units. Increased severity was reported more often by staff of nonpsychogeriatric units as compared with psychogeriatric units [mean 4.4 (SD 2.5) vs 3.3 (SD 2.8);  $P = .000$ ]. The largest differences were found for increased severity of symptoms in appetite disorders, respectively nonpsychogeriatric units (57%) vs psychogeriatric units (22%), depression (78% vs 53%), and anxiety (76% vs 52%).

### Conclusions

During the COVID-19 measures, well-being of older LTCF residents was severely affected. Six to 10 weeks after implementation of the visitor ban, high levels of loneliness, depression, and a significant exacerbation in mood and behavioral problems were reported. Residents without CI seemed to be the most affected. The

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**Fig. 1.** Change in mood and behavioral problems in LTCF residents during the visitor ban due to COVID-19, as compared with before the visitor ban. Change in frequency of residents' mood symptoms is reported from the perspective of relatives who have spoken to the resident in the 4 weeks before the assessment ( $n = 1387$ ). Change in severity of residents' behavioral problems is reported by direct care staff ( $n = 623$ ) and was responded on a unit level. Responses from those who indicated specific mood or behavior were not present or who did not know, were not taken into account.

implementation of the measures has reduced the incidence of COVID-19 infections and thus the number of deaths in LTCFs; however, a better balance between physical safety and well-being is necessary, as social isolation is a serious health threat for older residents and increases the risk of mortality.<sup>6,7</sup> During a Dutch pilot, the cautious opening of nursing homes using a Dutch guideline adapted to the local context, did not lead to new infections.<sup>8</sup> As social contact and meaningful daytime activities are essential for LTCF residents,<sup>9,10</sup> LTCFs should implement policies on allowing visitors and continuing daytime activities as much as possible in times of COVID-19. This should be done in conjunction with residents, family, and staff, prioritizing residents' well-being and autonomy again.

## References

- Danis K, Fonteneau L, Georges S, et al. High impact of COVID-19 in long-term care facilities, suggestion for monitoring in the EU/EEA, May 2020. *Euro Surveill* 2020;25:2000956.
- World Health Organization. Preventing and managing COVID-19 across long-term care services: Policy Brief. Geneva: World Health Organization; 2020. WHO/2019-nCoV/Policy\_Brief/Long-term\_Care/2020.1.
- van Tilburg TG. Social, emotional and existential loneliness: A test of the multidimensional concept. *Gerontologist* 2020.
- Rumpf HJ, Meyer C, Hapke U, John U. Screening for mental health: Validity of the MHI-5 using DSM-IV Axis I psychiatric disorders as gold standard. *Psychiatry Res* 2001;105:243–253.
- Cummings JL, Mega M, Gray K, et al. The Neuropsychiatric Inventory: Comprehensive assessment of psychopathology in dementia. *Neurology* 1994; 44:2308–2314.
- Gordon AL, Goodman C, Achterberg W, et al. Commentary: COVID in care homes—challenges and dilemmas in healthcare delivery. *Age Ageing* 2020;49: 701–705.

- Chu CH, Donato-Woodger S, Dainton CJ. Competing crises: COVID-19 countermeasures and social isolation among older adults in long term care. *J Adv Nurs* 2020.
- Verbeek H, Gerritsen DL, Backhaus R, et al. Allowing visitors back in the nursing home during the COVID-19 crisis: A Dutch national study into first experiences and impact on well-being. *J Am Med Dir Assoc* 2020;21:900–904.
- Choi NG, Ransom S, Wylie RJ. Depression in older nursing home residents: The influence of nursing home environmental stressors, coping, and acceptance of group and individual therapy. *Aging Ment Health* 2008;12:536–547.
- Cohen-Mansfield J, Dakheel-Ali M, Marx MS, et al. Which unmet needs contribute to behavior problems in persons with advanced dementia? *Psychiatry Res* 2015;228:59–64.

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## Diagnostic Sensitivity of Nasopharyngeal RT-PCR in a Long-Term Care Home Outbreak



To the Editor:

Since its emergence in late 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has rapidly spread across the world with unprecedented impacts globally. The mainstay of diagnosis remains reverse-transcriptase polymerase chain reaction (RT-PCR); however, uncertainty remains about the sensitivity of these tests, as was recently outlined by Woloshin et al.<sup>1</sup> Only 1 study has used a clinical gold standard to determine a sensitivity of only 66%.<sup>2</sup> As a result, many have adopted policies of serial testing, even in low- to moderate-risk patients, potentially leading to delays in care. Furthermore there is to date no evidence about the specific diagnostic performance in older individuals or in long-term care homes, even though most morbidity and mortality have been in these settings.<sup>3,4</sup> We sought to better define the true sensitivity of nasopharyngeal testing against a broad clinical definition in a long-term care home setting.