

## Higher Fall Rate of Admitted Patients During the Ongoing COVID-19 Epidemic: Is It Coincidence or Not?

### To the Editor:

Falls are a major public health problem globally because they are one of the major causes of mortality and morbidity at hospitals, especially in older adults,<sup>1</sup> as well as of increased health care costs. To date, there have been no empirical researches to reveal the trend of in-hospital falls in the ongoing COVID-19 epidemic.

We retrospectively analyzed the in-hospital fall incidence rate from January to May 2019 and during the same period in 2020 at a medical university-affiliated tertiary hospital in Taiwan. The fall incidence rate in January to May 2020 was 1.24 falls/1000 patient days, which was significantly higher than 0.41 falls/1000 patient days in the same period of 2019 ( $P = 0.022$ ) and more than 3 times the rate of that year (Table 1). The in-hospital fall incidence rate increased from 0.71 to 1.09 falls/1000 patient days at the preepidemic stage (no limitation on visitors and caregivers), from 0.65 to 1.02 falls/1000 patient days at the early epidemic stage (only 2 visitors together with one caregiver allowed into the hospital from January 27 to February 26 as stipulated by the National Health Command Center, or NHCC), from 0.27 to 1.62 falls/1000 patient days from February 27 to March 24 (2 visiting hours per day restricted by the NHCC), and from 0.31 to

1.26 falls/1000 patient days at the pandemic stage (no visitors allowed from March 25 to May 27).

There were no statistically significant differences in in-hospital fall incidence rate associated with age, length of stay, and sex, but the number of falls significantly increased in patients admitted with hematomas (+2.6%) or for gastrointestinal surgery (+1.21%), and the incidence rate decreased in patients admitted to the orthopedics (-1.56%) and pediatrics (-1.33%) divisions. The case mix index from the National Health Insurance Administration was unavailable for examination.

What factors contributed to the higher incidence rate of in-hospital falls in the period January to May 2020? We suspected that restriction of the number of visitors and caregivers, and visiting times measures announced by the NHCC might be some of the key factors. Increasing the nursing staff's knowledge and use of prevention strategies can decrease fall rates after an educational intervention.<sup>2</sup> Unfortunately, to prevent health care-associated infections during the COVID-19 epidemic, cross-team nursing care was suspended at the hospital,<sup>3</sup> so there were fewer health care workers for support and mutual monitoring. The mode of inpatient personal care provision in Taiwan is very different from that in Organisation for Economic Co-operation and Development countries such as the United States or Canada. Spouses or partners still play the role of caregivers providing care for personal activities of daily living and instrumental activities of daily living care during hospitalization in Taiwan. Elderly adults have a higher mortality rate when

infected with severe acute respiratory syndrome coronavirus 2,<sup>4</sup> so whether primary caregivers' replacement by other family members may lead to higher fall rates warrants further investigation.

The fall incidence rate increased significantly during the ongoing COVID-19 epidemic, but there is a lack of comparable data. The bed/chair alarm use was an important component of an effective evidence-based fall prevention program.<sup>5</sup> It is time to renew inpatient fall prevention measures.

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**TABLE 1.** Incidence Rate of In-Hospital Falls Between January and May 2019 and the 2020 COVID-19 Epidemic

Period*	Fall-Related Variables								
	January–May 2019				In-Hospital Patients' Visitors and Caregivers Regulation <sup>†</sup>	January–May 2020			P
	Falls	Inpatient Days	Falls/1000 Patient Days	Falls		Inpatient Days	Falls/1000 Patient Days		
January 1–26	5	7089	0.71	No limitation on visitors and caregivers	7	6437	1.09	0.022*	
January 27–February 26	5	7742	0.65	Only 2 visitors together with one caregiver allowed into the hospital	8	7807	1.02		
February 27–March 24	2	7368	0.27	2 visiting hours per day restricted	10	6176	1.62		
March 25–May 27	9	28,762	0.31	No visitors allowed	20	15,853	1.26		
Total	21	50,961	0.41		45	36,273	1.24		

\*t-test,  $P < 0.05$ .

<sup>†</sup>Divided based on the restriction of caregivers and visiting announced by National Health Commander Center (NHCC) of Taiwan.

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