

## Letter

# The Impact of Social Distancing on the Transmission of Acute Respiratory Viruses during the COVID-19 Pandemic

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## COVID-19 대유행 동안 사회적 거리두기의 급성호흡기바이러스 전파에 미치는 영향

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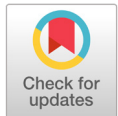
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To the Editor,

Since the first confirmed case of coronavirus disease 2019 (COVID-19) on January 20, 2020, the Korean government reported a total of 8,799 COVID-19 patients until March 21, 2020, which were mainly attributed to community outbreaks [1]. This novel respiratory viral infection is so feared that the number of individuals using public transport has dropped dramatically. Moreover, enhanced social distancing measures, including refraining from going out and following personal hygiene practices such as hand washing and wearing a mask, were announced on March 21. These strategies successfully attenuated COVID-19 transmission in South Korea [2].

Similar to pharmaceutical inventions such as the use of antivirals and vaccination, physical interventions like hand-washing and wearing masks have been documented as effective measures against the transmission of respiratory viruses like influenza [3]. The effectiveness of physical interventions on influenza and COVID-19 has been reported in Hong Kong and South Korea [4,5]. Here, using nationwide surveillance reports and a retrospective review of three-year records from a single institution, we measured the impact of social distancing on respiratory virus transmission. This study was reviewed and approved by the Institutional Review Board (IRB) of Asan Medical Center, Seoul, Korea (IRB No. 2020-0983). The IRB waived the requirement for written informed consent.

The results of patients tested for the respiratory virus panel were collected from a university-affiliated hospital in South Korea from May 2017 to April 2020. Respiratory virus panel testing was performed using a multiplex real-time PCR (Anyplex II RV16; Seegene, Seoul, Korea). The national surveillance data for acute respiratory viruses (for the same period) were retrieved from the Infectious Disease Portal (<http://www.cdc.go.kr/npt/biz/npp/iss/ariStatisticsMain.do>) operated by the Korea Centers for Disease Control & Prevention. In addition to influenza, adenovirus, bocavirus, coronavirus, metapneumovirus, parainfluenza virus, respiratory syncytial virus, and rhinovirus were also included as acute respiratory viruses for statistical

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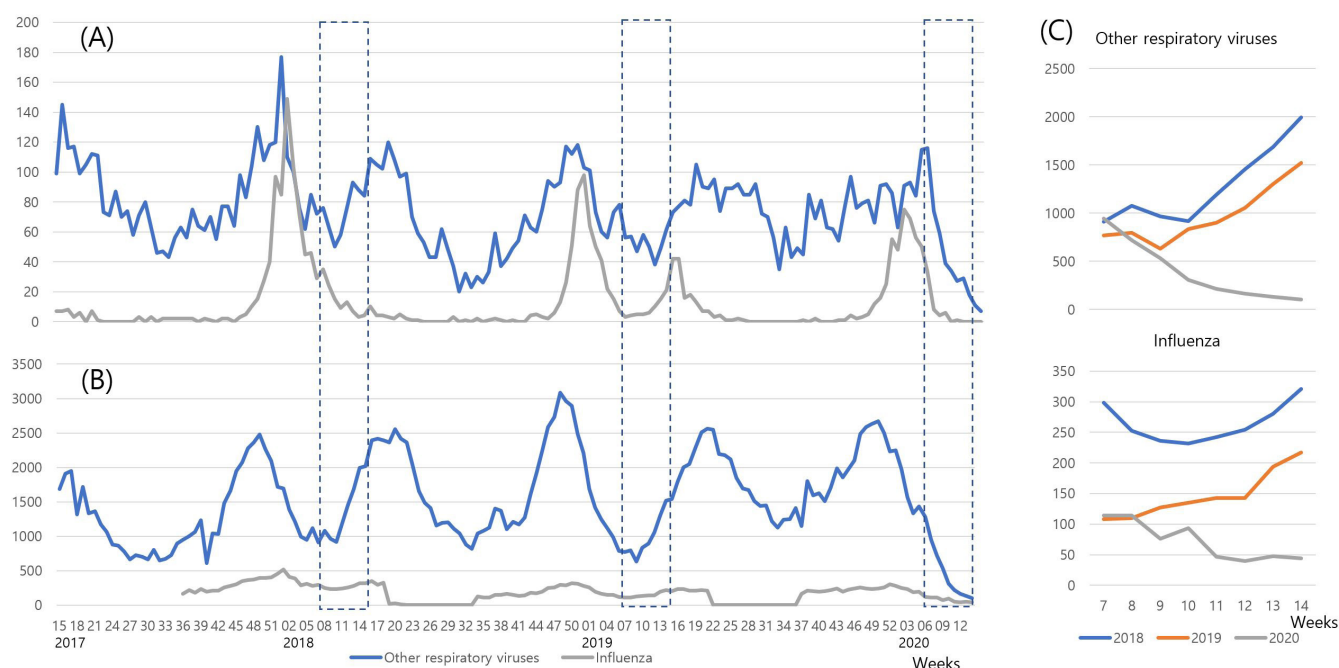


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analysis. The chi-square test was performed using MedCalc (version 19.2; MedCalc 103 Software, Ostend, Belgium).

From March to April 2020, the reported number of cases with acute respiratory viruses dramatically dropped compared to the same time period in the previous two years at this hospital and nationwide. Positive results from the respiratory panel testing and the patient numbers from the national surveillance data are shown in Fig. 1. A total of 2,941 samples were tested from March to April 2020, which is a marginal increase from 2018 and 2019 (2,829 and 2,501 samples, respectively) for the same period. In 2020, 164 cases of acute respiratory viral infection were reported, which is a significant decrease compared to the 781 ( $P < 0.001$ ) and 687 ( $P < 0.001$ ) cases reported in 2018 and 2019, respectively, for the same period.

To the best of our knowledge, this is the first retrospective study on the impact of social distancing—introduced to stem COVID-19 spread—on the incidence of acute respiratory viral diseases besides influenza. Social distancing and improvements in personal hygiene seem to effectively prevent droplet or airborne transmission of acute respiratory viral diseases. Considering the increased risk of such infections in aging populations, education regarding hand hygiene and mask use should be encouraged in the post-COVID-19 era.



**Fig. 1.** (A) Number of positive cases according to the respiratory virus panel testing results of the institution, (B) Number of patients with acute respiratory viral infection as per the nationwide surveillance system (NSS) in South Korea, and (C) Comparison of the number of patients with other respiratory viruses and influenza (7th–14th week) based on 3 year data retrieved from NSS. Dotted rectangles highlight 7th–14th week of each year. “Other respiratory viruses” comprise adenovirus, bocavirus, coronavirus, metapneumovirus, parainfluenza virus, respiratory syncytial virus, and rhinovirus.

## CONFLICTS OF INTEREST

No potential conflicts of interest relevant to this article were reported.

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## REFERENCES

1. Korea Centers for Disease Control & Prevention (KCDC). The updates on COVID-19 in Korea as of 21 March. <https://www.cdc.go.kr/board/board.es?mid=a30402000000&bid=0030> [Online] (last visited on 21 March 2020).
2. Park IN, Yum HK. Stepwise strategy of social distancing in Korea. *J Korean Med Sci* 2020;35:e264.
3. Ahmed F, Zviedrite N, Uzicanin A. Effectiveness of workplace social distancing measures in reducing influenza transmission: a systematic review. *BMC Public Health* 2018;18:518.
4. Cowling BJ, Ali ST, Ng TWY, Tsang TK, Li JCM, Fong MW, et al. Impact assessment of non-pharmaceutical interventions against coronavirus disease 2019 and influenza in Hong Kong: an observational study. *Lancet Public Health* 2020;5:e279-88.
5. Noh JY, Seong H, Yoon JG, Song JY, Cheong HJ, Kim WJ. Social distancing against COVID-19: implication for the control of influenza. *J Korean Med Sci* 2020;35:e182.