Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Positive effects of COVID-19 control measures on pneumonia prevention

The pandemic of Corona Virus Disease 2019 (COVID-19) is becoming a worldwide disaster. According to the WHO, more than 4,248,389 cases were reported and 294,046 deaths were conformed globally as of 14 May, 2020 (WHO, 2020). It has been reported that humans may be more likely to be infected with different types of viruses through respiratory transmission. Here we report the protective effect to pneumonia while fighting against COVID-19.

The first COVID-19 case in Guangzhou, China was reported on 21st of January, 2020, and it has been rapidly reached the peak on the 6th week of 2020. Multiple measures including social lockdown, nucleic acid testing, quarantine, wearing masks, extensive screening of fever cases and close contacts have been taken to prevent the outbreak of SARS-COV-2 outbreak in Guangzhou. After the peak, the number of cases were dramatically decreased since 11th week. At present, all reported cases in Guangzhou are imported cases and related cases (Fig. 1A).

We have previously observed that the seasonal influenza virus was also being prevented while fighting against the SARS-COV-2 pandemic in Guangzhou City, China (Wu et al., 2020). According to the Chinese National Influenza Center, the positive rate of the influenza like illness samples in 2020 was much less than that in 2019 both in southern and northern China in 2020 than that of in 2019 (Fig. 1B). And the weekly reported cases in Guangzhou was persistently decreased since the beginning of the year (Fig. 1C). Sakamoto et al. (2020) reported the same trend in Japan.

David Kim's report (Kim et al., 2020) showed that the rates of co-infection of SARS-COV-2 and other respiratory pathogens is higher than previously reported. However, we also observed that the pneumonia cases (except for the COVID-19 cases) were dramatically deceased, the in-patient cases of pneumonia in Guangzhou would have reached its peak between week 10 and 22 in the last 4 years. However, in 2020, the curve was dramatically going down (Fig. 1D) except week 8 and 9, which might be related to the extensive screening during 8th to 9th week, leading to more patients came to the hospital for treatment. Out-patient cases were observed the same trend (Fig. 1E). Notably, in 2019, the pneumonia cases in the out-patient surveillance remained stably during 13th week to 31st week, which was also shown in the in-patient surveillance almost the whole year, except two canyons in week 4–10 and week 46–48 (Fig. 1D and E).

The pneumonia was dramatically decreased compared to the last four years in Guangzhou. The measures taken to fight against COVID-19 have reduced the risk of pneumonia transmission: (1) massive nucleic acid testing and extensive screening for fever cases; (2) social lockdown and quarantine; (3) the whole

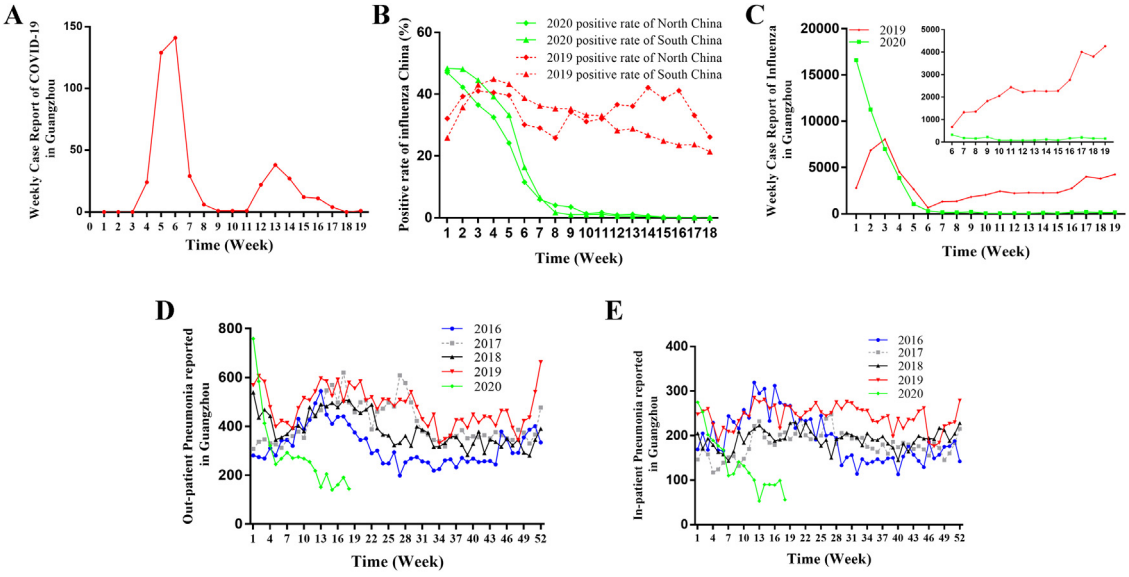

Fig. 1. Positive effects of COVID-19 control measures on pneumonia prevention. (A) The reported cases of COVID-19 in Guangzhou City. (B) The positive rate of the specimens of the first 10 weeks of the year, China. (C) The reported cases of influenza in Guangzhou City. (D) The weekly reported cases of out-patient pneumonia in Guangzhou City. (E) The weekly reported cases of in-patient pneumonia in Guangzhou City.

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population were wearing facial masks; so, all suspected of COVID-19 and regular pneumonia cases were send to hospital, the risk of infection with pneumonia was minimized. Limitation of this study includes the lack of age-specific weekly data on pneumonia, and cannot distinguish the community- and hospital- acquired pneumonia from the system, and COVID-19 might also have raised the attention of the physicians and the infectious disease specialists, also, the SARS-COV-2 outbreak in Guangzhou may affect patients' inclination to go and see a doctor.

Conflicts of interests

The authors declare no conflicts interests.

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Ethical approval

None.

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