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A seroprevalence study of COVID-19 at a campus in southern Taiwan



Dear Editor,

Coronavirus disease 2019 (COVID-19) is a great challenge of global public health,¹ with an increasing number of affected patients, causing substantial morbidity and mortality. Taiwan, expected to have a high number of patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) due to the proximity to China, had ever no new indigenous cases of COVID-19 for more than 6 months in 2020. Thanks to the early recognition of the crisis of COVID-19, the spread of the disease was well-contained so far. Though reopening schools during the epidemic poses a major challenge worldwide, Taiwan is one of countries maintaining teaching normally by means of several measures such as active campus-based screening, regulation of dormitories, and reinforcement of personal hygiene.² However, a continuous surveillance for the campus is needed when we faced this emerging infectious disease.

Serological assays is able to detect people with exposure to SARS-CoV-2, and could be used for massive screening.³ We utilized residual serum samples of the students visiting the hospital for routine health check-up between August and early September in 2020. The Elecsys Anti-SARS CoV-2 (Roche Diagnostics Basel, Switzerland) test was used to detect SARS-CoV-2 antibody. This study was approved by Institutional Review Board of National Cheng Kung University Hospital (A-ER-109-149), and informed consent was allowed to be waived. There were 969 people in total, and 629 male students accounted for 65%. The sampling numbers and

proportions from different counties were shown in [Fig. 1](#). Most students came from southern ($n = 496$, 51.2%), and others were from northern ($n = 284$, 29.3%), middle ($n = 167$, 17.2%) Taiwan, and other areas ($n = 22$, 2.3%). All the samples were negative for total immunoglobulin antibody against nucleocapsid antigen of SARS-CoV-2, except two (1.04 and 1.50, respectively; cutoff index ≥ 1.0). These two samples with a low antibody titer were further tested by the Wondfo SARS-CoV-2 Antibody Test (Guangzhou Wondfo Biotech Co., China) and ASK COVID-19 IgG/IgM Rapid Test (TONYAR Biotech Inc., Taiwan). Both tests revealed negative results for both samples.

Generally speaking, all the students receiving routine health checkup are expected to be free of symptoms. In addition, owing to the extremely low prevalence of SARS-CoV-2 infection in Taiwan, the two samples with a low antibody titer is very likely to be false positive,⁴ which was further supported by two other antibody kits. Although the study samples were collected from one institute, the individuals came from diverse areas in Taiwan. Moreover, the nearly one thousand samples added information to the limited data of population-based seroprevalence of anti-SARS-CoV-2 antibody in Asia,⁵ and may provide the evidence that college education at the universities in Taiwan is feasible, if personal preventive measures are continually adopted. Though the study showed no cases of positive anti-SARS-CoV-2 antibody, it is worthy to monitor the

<https://doi.org/10.1016/j.jmii.2021.03.018>

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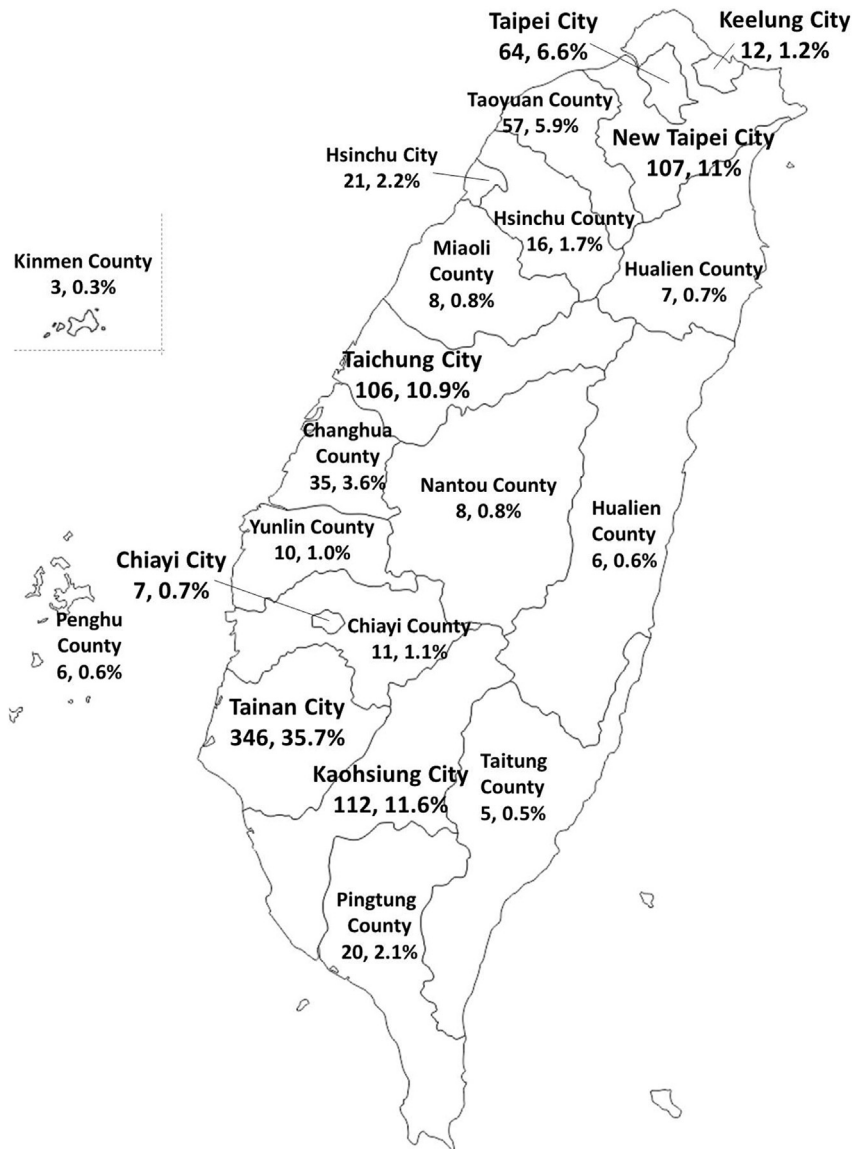


Figure 1. The case numbers in the Taiwan cities and counties.

seroprevalence in Taiwan due to the growing global pandemic of COVID-19.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

Acknowledgments

The funding of this study was supported by Taiwan Ministry of Science and Technology (Grant number: MOST 109-2327-B-006-005).

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25 February 2021

Available online 8 April 2021