ABSTRACT

Objectives We aimed to investigate whether the implementation of personal protective measures against coronavirus disease 2019 reduced the transmission of influenza-like illnesses.

Methods We did a longitudinal study to examine the association between practicing personal protective measures recommended by the World Health Organization and cases of influenza-like illnesses. We followed a group of international students from 95 countries located in five continents from October 2020 to March 2021. Their frequency of wearing masks, social distancing, washing hands, and avoiding crowds, as well as their reported cases of influenza-like illnesses during the 2020-2021 flu season were examined. We used Kaplan-Meier analysis to compare the occurrence of symptoms of influenza-like illnesses among students who adhered with those who did not adhere to the personal protective measures. We performed a multivariate Cox proportional hazard regression to investigate the association between the frequency of implementing the protective measures and reported cases of influenza-like illnesses.

Results From October 2020 to March 2021, 139 (18%) students reported symptoms of influenza-like illnesses. The survival analysis showed that students who adhered to the protective measures had a reduced risk of influenza-like illnesses. We found that students who frequently wore facemasks were 33.6% less likely to show symptoms of influenza-like illnesses adjusting for all the other personal protective measures (HR=0.664, 95%CI=0.494-0.893, p=0.006). Similarly, students who frequently disinfected their hands were 17.1 % less likely to report symptoms of influenza-like illnesses (HR=0.821, 95%CI=0.793- 0.915, p=0.029). Furthermore, students who exercised social distancing measures were 23.5% less likely to report symptoms of influenza-like illnesses adjusting for the other measures (HR= 0.765, 95%CI=0.610 - 0.960, p=0.020). We found a two-fold increased risk of influenza-like illnesses among students who did not frequently implement all the personal protective measures as compared with those who adhered to the measures ((HR=2.16, 95%CI=1.53-3.05, P<0.001).

Conclusions Our study shows that personal protective measures against COVID-19 (including wearing facemasks, hand hygiene, and social distancing) prevented the transmission of acute respiratory infections during the 2020-2021 flu season. Our findings suggest that personal protective measures with high feasibility and high acceptability could be implemented during

influenza epidemics to reduce transmission, particularly in populations at highest risk of developing severe complications.