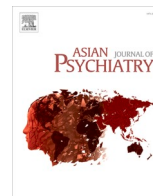Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

COVID-19 threatens decade-long suicide initiatives in Japan

From 2010, number of suicide deaths have been decreasing in Japan, up until the discovery of SARS-CoV-2, or clinically referred to as COVID-19, on December 2019 in Wuhan, China (Zhou et al., 2020). The unprecedented global spread of the disease has prompted the World Health Organization (WHO) to classify the disease as a pandemic. Several countries imposed national lockdowns, initiated mass testing, introduced quarantine classifications and new lifestyle regulations with the hope to control the pandemic (Han et al., 2020). Japan is no exception; the country implemented a nationwide state of emergency from April to May (Tanaka and Okamoto, 2021). While movement restrictions have been in place, together with limited indoor/outdoor activities and the reduced economic activity, it was inevitable that the mental health of several populations may have been compromised (Gunnell et al., 2020). In this research letter, the impact of COVID-19 pandemic on suicide risk in Japan was elucidated using an 11-year, prefecture-specific, monthly data.

In brief, the 47 Japanese prefecture-specific monthly suicide data from January 2010 – December 2020 were obtained from publicly available sources (National Police Agency, 2020). A classical interrupted time series was used to estimate the prefecture-specific pre-COVID-19 and COVID-19 period-specific associations. Monthly suicide counts were modeled with a Poisson distribution. Covariates included an offset of the log of population, month of reported suicide, together with the main and interaction effects of time and intervention. Intervention was assumed as a binary variable which takes the value of 0 for Pre-COVID-19 period (2010–2019), whereas, 1 for COVID-19 period (2020). Prefecture-specific estimates were then pooled using a random effects meta-analysis. All estimates represent either the relative risk (RR) alongside their respective confidence intervals (CI) or the change in the risk; estimated as (RR – 1) x 100. All analyses were carried out using R Statistical Programming.

Nationwide total number of suicide cases from 2010 to 2020 was 271,870. Even though the mean monthly suicide cases before the pandemic (mean = 2091.26; [standard deviation (SD): 380.29], was statistically higher than the COVID-19 pandemic mean (= 1743.25; SD = 208.57; P value < 0.001), the slope of the trends varied substantially as shown in Fig. 1 (Panel C).

Results revealed that pooled risk of suicide significantly increased by 2.93 % (95 % CI: 2.37, 3.49 %) during the pandemic, as shown in Fig. 1 (Panel B). A decade's gradual progress, depicted by pre-pandemic risks at −0.47 % (95 % CI: −0.56, −0.38 %) summarized in Fig. 1 (Panel A), was hampered by COVID-19, apparent in the marked turn in 2020 (Fig. 1, Panel C). In contrast to 2019 average number of suicide cases, pandemic-period estimates were 4.8 % higher, which was near the 2018 level.

If current conditions continue, COVID-19 may pose a threat of reversing this progress. Whilst apparent in Japan, this setback might as well be experienced by several countries albeit under appraised due to the lack of definitive data. The pandemic already pushed back progress to 2018 level, and if this continues without a stopgap, we might even see a possible retrogression. The initial response of the governments is to prevent and control the transmission of COVID-19. However, this may have also led to unintended consequences such as economic stress, social isolation, and decreased access to community support, which could have magnified the risk of suicide (Reger et al., 2020). Telehealth has practiced been in the country since 1996 (Takahashi, 2001) and has been constantly developing and being embraced by various medical disciplines (Ito et al., 2017). Telepsychiatry in Japan during the pandemic has been gradually relaxed to improve the access to service. Up until 2019, in Japan, a prior treatment plan needs to be developed before a patient be eligible in receiving telepsychiatry treatment. During the pandemic, restrictions were relaxed, no longer requiring conditions for patient eligibility for telepsychiatry (Kinoshita et al., 2020). Amidst this progress, these suicide-related initiatives may have been thoroughly exhausted during the pandemic, with the number of clients increasing but with relatively similar staffing capacity. The pandemic has put a considerable psychological strain on the health care workers in the country. A cross-sectional survey revealed that 40 % of nurses and more than 30 % of radiological technologists and pharmacists experienced burn out (Matsuo et al., 2020). News of the vaccine roll out provides hope. However, this may just be a temporary relief for the people since they will face a long period of economic revival towards pre−COVID-19 levels. This window period is thus critical for the government to expand further the provision of mental health services in the country and to have a bi-directional focus, on both the patients and health care providers.

Author agreement

The author has seen and approved the final version of the manuscript being submitted.

The article is the author's original work, hasn't received prior publication and isn't under consideration for publication elsewhere.

Ethical statement

The data utilized in the study is a secondary data available from online resources and may not deem an ethical clearance.

Author contribution

XS conceptualized the study, collected, analyzed, and interpreted the data, as well as wrote, edited, and reviewed the manuscript.
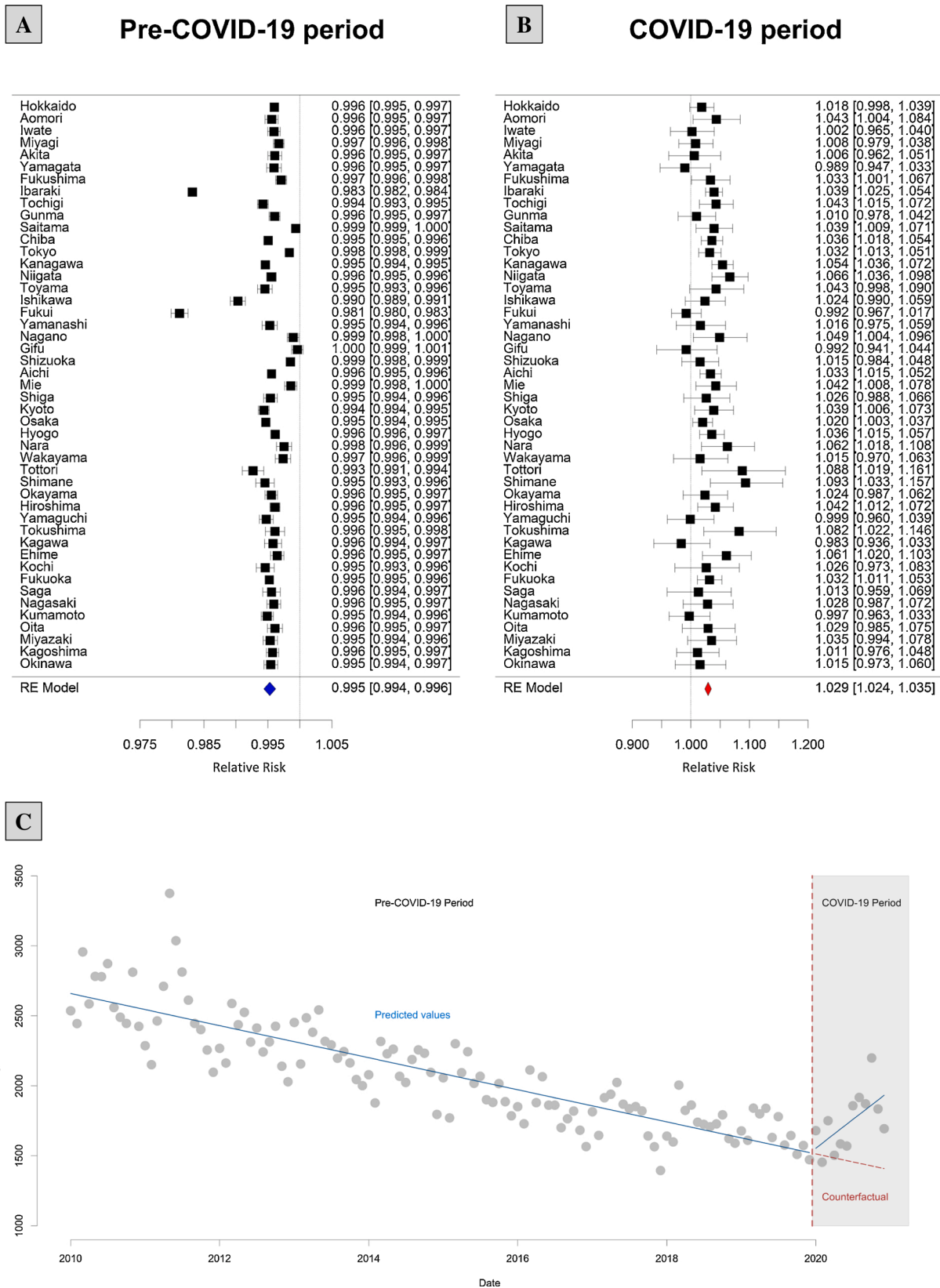
Fig. 1. Pooled effects estimate of the risk of suicide in Pre-COVID-19 (*A*) and COVID-19 period (*B*) alongside the time series of nationwide monthly suicide data from January 2010 to December 2020 (*C*).

Panel A shows the result of the random effects meta-analysis of the prefecture-specific effects estimates (square-shaped) generating the Pre-COVID-19 pooled risk estimate (bottom-most, blue-Colored, diamond-shaped symbol). COVID-19 pooled risk estimates are shown in Panel B (bottom-most, red-Colored, diamond-shaped symbol). In Panel C, grey-Colored circles indicate the annual monthly suicides across the country. The interrupted time series fitted lines are shown in blue lines, with the red-dotted, vertical line indicating the start of the pandemic. To the left of the red-dotted, vertical line is the pre-pandemic slope, while to the right is the pandemic-period slope. Red, horizontal, dotted line represent the counterfactual scenario assuming pre-COVID-19 conditions.

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Declaration of Competing Interest

None.

References

Gunnell, D., Appleby, L., Arensman, E., Hawton, K., John, A., Kapur, N., Khan, M., O'Connor, R.C., Pirkis, J., Appleby, L., Arensman, E., Caine, E.D., Chan, L.F., Chang, S.-S., Chen, Y.-Y., Christensen, H., Dandona, R., Eddleston, M., Erlangsen, A., Gunnell, D., Harkavy-Friedman, J., Hawton, K., John, A., Kapur, N., Khan, M., Kirtley, O.J., Knipe, D., Konradsen, F., Liu, S., McManus, S., Mehlum, L., Miller, M., Moran, P., Morrissey, J., Moutier, C., Niederkrotenthaler, T., Nordentoft, M., O'Connor, R.C., O'Neill, S., Page, A., Phillips, M.R., Pirkis, J., Platt, S., Pompili, M., Qin, P., Rezaeian, M., Silverman, M., Sinyor, M., Stack, S., Townsend, E., Turecki, G., Vijayakumar, L., Yip, P.S.F., 2020. Suicide risk and prevention during the COVID-19 pandemic. Lancet Psychiatry 7, 468–471.

Han, E., Tan, M.M.J., Turk, E., Sridhar, D., Leung, G.M., Shibuya, K., Asgari, N., Oh, J., García-Basteiro, A.L., Hanefeld, J., Cook, A.R., Hsu, L.Y., Teo, Y.Y., Heymann, D., Clark, H., McKee, M., Legido-Quigley, H., 2020. Lessons learnt from easing COVID-19 restrictions: an analysis of countries and regions in Asia Pacific and Europe. Lancet 396, 1525–1534.

Ito, J., Edirippulige, S., Aono, T., Armfield, N.R., 2017. The use of telemedicine for delivering healthcare in Japan: systematic review of literature published in Japanese and English languages. J. Telemed. Telecare 23, 828–834.

Kinoshita, S., Cortright, K., Crawford, A., Mizuno, Y., Yoshida, K., Hilty, D., Guinart, D., Torous, J., Correll, C.U., Castle, D.J., Rocha, D., Yang, Y., Xiang, Y.-t., Kølbæk, P., Dines, D., ElShami, M., Jain, P., Kallivayalil, R., Solmi, M., Favaro, A., Veronese, N., Seedat, S., Shin, S., Salazar de Pablo, G., Chang, C.-H., Su, K.-P., Karas, H., Kane, J. M., Yellowlees, P., Kishimoto, T., 2020. Changes in telepsychiatry regulations during the COVID-19 pandemic: 17 countries and regions' approaches to an evolving healthcare landscape. Psychol. Med. 1–8.

Matsuo, T., Kobayashi, D., Taki, F., Sakamoto, F., Uehara, Y., Mori, N., Fukui, T., 2020. Prevalence of health care worker burnout during the coronavirus disease 2019 (COVID-19) pandemic in Japan. JAMA Network Open 3 e2017271-e2017271.

National Police Agency, 2020. In: National Police Agency (Ed.), Number of Suicide Statistics. National Police Agency, Japan.

Reger, M.A., Stanley, I.H., Joiner, T.E., 2020. Suicide Mortality and Coronavirus Disease 2019—A Perfect Storm? JAMA Psychiatry 77, 1093–1094.

Takahashi, T., 2001. The present and future of telemedicine in Japan. Int. J. Med. Inform. 61, 131–137.

Tanaka, T., Okamoto, S., 2021. Increase in suicide following an initial decline during the COVID-19 pandemic in Japan. Nat. Hum. Behav.

Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., Xiang, J., Wang, Y., Song, B., Gu, X., Guan, L., Wei, Y., Li, H., Wu, X., Xu, J., Tu, S., Zhang, Y., Chen, H., Cao, B., 2020. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. Lancet 395, 1054–1062.

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