RE-COVER project: A survey on resilience, mental health, and fear of Covid-19 in four countries

Daichi Sugawara1*, Yuan Gu2, Akihiro Masuyama3†, Siew Li Ng4†, Evone Y. M. Phoo4†, Raja Intan Arifah Binti Raja Reza Shah5†, Takahiro Kubo6†, Yuta Chishima1† and Eugene Y. J. Tee4†

Abstract

Objectives: The COVID-19 pandemic has impacted the mental health of people worldwide. Psychological resilience has been shown to buffer against the threat of the pandemic (i.e., COVID-19 fear) and sustain mental health. The extent to which psychological resilience factors impact mental health maintenance, however, is unclear, given broad differences in infection rates, prevention approaches, government interventions across different cultures and contexts. Our study examines resilience factors and how they protect individuals from COVID-19-related fear and sustain their mental health.

Data description: Data were collected from 1583 (Mage = 32.22, SD = 12.90, Range = 19–82) respondents from Japan, China, the United States, and Malaysia between October to November 2020. We collected data across age and sex, marital status, number of children, and occupations. We also accounted for stay-at-home measures, change in income, COVID-19 infection status, place of residence, and subjective social status in the study. Our variables included mental health-related and resilience constructs, namely (i) fear of COVID-19, (ii) depression, anxiety, and stress; (iii) present, past, and future life satisfaction, (iv) sense of control, (v) positive emotions, (vi) ego-resilience, (vii) grit, (viii) self-compassion, (ix) passion, and (x) relational mobility. All questionnaires were assessed for their suitability across the four countries with the necessary translation checks. Results from this study can be instrumental in examining the impact of multiple resilience factors and their interaction with demographic variables in shaping mental health outcomes.

Keywords: Resilience, Mental health, Fear of COVID-19, Well-being

Objective

As of February 2021, The World Health Organization (WHO) reports that 113 million people were infected with the coronavirus disease 2019 (COVID-19), with the pandemic claiming the lives of approximately 2.5 million people worldwide [1]. The COVID-19 pandemic has severely impacted mental health across nations. Meta-analytic evidence shows an exacerbation of mental health issues such as depression, anxiety, distress, and insomnia brought about by this unprecedented global health crisis [2].

In light of these findings, there has, however, been a proliferation of research on psychological resilience and studies examining how this important psychological ability serves as an important factor in sustaining mental health. Resilience is broadly defined as the ability to bounce back from adversity and crisis. Resilient individuals engage in effective coping that assists them in healthily adjusting to challenges and prevent them from being
We collected a wide range of demographic data, including age, sex, marital status, number of children, occupation, self-isolation status (i.e., extent to which respondents spent time indoors/outdoors), change in income (e.g., income increased), COVID-19 infection status (e.g., family member infected), place of residence, and subjective social status. Several incomplete responses were included in the final dataset given that these were data from respondents who declined to answer some free-text items and/or skipped optional questionnaire items. Even if some of the scales are not answered, other scales can be used in the analysis so that the sample size is not reduced unnecessarily. There were marginally more male respondents than female respondents (Male = 931, Female = 643, Other = 9). In the Chinese dataset, there were more students, and the mean age of respondents was moderately lower (Mean age_{Japan} = 38.72, Mean age_{Malaysia} = 32.72, Mean age_{China} = 21.79, Mean age_{US} = 41.47).

Depression, anxiety, and stress were assessed using the 21-item Depression Anxiety Stress Scales (DASS-21) [25–27]. We also assessed for temporal life satisfaction using the 3-item Scale of Present, Past, and Future Life Satisfaction [12, 28] and fear of COVID-19 using the 7-item Fear of COVID-19 Scale [29–31]. Ego resilience was assessed using the 14-item Ego Resiliency Scale [8–10], Sense of Control with the 12-item Sense of Control Scale [11–13], Positive Emotions via the 38-item Dispositional Positive Emotions Scales [14, 15], Grit with the 8-item Grit scale [16–18], self-compassion with the 26-item Relational Mobility Scale [19–21], and Passion with the 17-item Passion Scale [22–24]. These questionnaires assessed the resilience factors in this study. Finally, we measured relational mobility using the 12-item Relational Mobility Scale [32] as a proxy for cultural differences. The Dispositional Positive Emotions Scales and Scale of Present, Past, and Future Life Satisfaction were translated into Chinese and examined for reliability and validity. For Malaysians, we prepared questionnaires in both English and Malay.

The word file summarizes the scales and demographic descriptions used in this study. In the Excel file, the raw data of the survey and the calculated scores of the scales are summarized [33]. The items for each language of the scale used in this study are described in the source code [33] (Table 1).

**Limitations**

Due to the nature of cross-sectional study [33] design, it is not possible to identify a causal relationship between resilience and mental health. In addition, the sample does not include data from other regions in the world such as from Europe, Africa, and South America.
As such, we could only compare the results broadly between North America and Asia. It should be noted that this is a cross-sectional data set that only includes data for respondents from October to November 2020. Since the data was obtained through an online survey, which may have caused satisfice, screening the responses would have resulted in a more accurate analysis [34]. The data also do not allow us to determine whether a person has been infected with COVID-19, and as such, we are not able to disentangle whether the effects here are due to actual experiences of being infected, or from perceived threat of infection. These questions remain avenues for further research.

Consent for publication
Not applicable.

Competing interests
The authors declare they have no actual or potential competing financial interests.

Author details
1 Faculty of Human Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba 305-8572, Japan. 2 Department of Public Administration, Humanities and Arts, Dalian Maritime University, Dalian 116026, China. 3 Faculty of Psychology, Iryo Sosei University, Chuo-dai-ino 5-5-1, Iwaki, Fukushima 970-8551, Japan. 4 Department of Psychology, HELP University, 40150 Shah Alam, Malaysia. 5 Department of Social, Health and Organisational Psychology, Utrecht University, Utrecht, Netherlands. 6 Faculty of Human Sciences, University of Tsukuba, Otsuka 3-2-1, Bunkyo-ku, Tokyo 112-0012, Japan.

References
1. World Health Organization. Coronavirus disease (COVID-19) situation reports. https://www.who.int/publications/m/item/weekly-operational-update-on-covid-19—1—march-2021(2021). Accessed 2 Mar 2021.
2. Tianchen W, Xiaoqian J, Huifeng S, Jieqiong N, Xiaohan Y, Jialei X, Xiaoli W. Prevalence of mental health problems during the COVID-19 pandemic: a systematic review and meta-analysis. J Affect Disord. 2021;281:91–8.
3. Rutter M. Psychosocial resilience and protective mechanisms. Am J Orthopsychiatry. 1987;57:316–31.
4. Kubo T, Sugawara D, Masuyama A. The effect of ego-resiliency and COVID-19-related stress on mental health among the Japanese population. Pers Individ Differ. 2021. https://doi.org/10.1016/j.paid.2021.110702.
5. Fredrickson B, Tugade M, Waugh C, Samanez-Larkin G. What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11, 2001. J Pers Soc Psychol. 2003;84:365–76.
6. Masten A S. Pathways to integrated resilience science. Psychol Inq. 2015;26:187–96.
7. Unag M. Resilience, trauma, context, and culture. Trauma Violence Abuse. 2013;14:255–66.
8. Block J, Kremen AM. IQ and ego resiliency: conceptual and empirical connections and separateness. J Pers Soc Psychol. 1996;70:349–61.
9. Chen X, He J, Fan X. Applicability of the Ego-Resiliency Scale (ER89) in the Chinese cultural context: a validation study. J Psychoeduc Assess. 2019;38:765–91.
10. Hata U, Onodera A. Development and validation of a Japanese version of the Ego-Resiliency Scale (ER89). Jpn J Pers. 2013;32:37–47.
11. Dan Gao. How does Social Class Influence Mate Preference? Perceived Control of Mediating Effect and Lay Theories about Social Class of Moderated Effect. Master’s thesis. Northwest Normal University. 2019.
12. Ryff C D, Kikayama S, Karasawa M, Markus H, Kawakami N, Cae C. Survey of Midlife in Japan (MIDJA), April-September 2008. ICPSR30822-v3. Ann Arbor: Inter-university Consortium for Political and Social Research, 2018; https://doi.org/10.3886/ICPSR30822.v3.
13. Lachman ME, Weaver SL. The sense of control as a moderator of social class differences in health and well-being. J Pers Soc Psychol. 1998;74:763–73.
• fast, convenient online submission
• thorough peer review by experienced researchers in your field
• rapid publication on acceptance
• support for research data, including large and complex data types
• gold Open Access which fosters wider collaboration and increased citations
• maximum visibility for your research: over 100M website views per year

At BMC, research is always in progress.

Learn more: biomedcentral.com/submissions

Publisher's Note
Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

14. Shiota MN, Keltner D, John OP. Positive emotion dispositions differentially associated with big five personality and attachment style. J Posit Psychol. 2006;1:61–71.
15. Sugawara D, Animitsu K, Sugie M. Development of the Japanese version of dispositional positive emotion scales. J Health Psychol Res. 2020;33:1–9.
16. Duckworth AL, Peterson C, Matthews MD, Kelly DR. Grit: perseverance and passion for long-term goals. J Pers Soc Psychol. 2007;92:1087–101.
17. Takehashi H, Higuchi O, Ozaki Y, Watanabe T, Toyosawa J. Reliability and validity of the Japanese version of the Grit Scale. Jpn J Psychol. 2019;89:580–90.
18. Zhong C, Wang MC, Shou Y, Ren F, Zhang X, Li M, Yang W. Assessing construct validity of the Gritt-S in Chinese employees. PloS ONE. 2018;13:e0209319.
19. Animitsu K. Development and validation of the Japanese version of the self-compassion scale. Jpn J Psychol. 2014;85:50–9.
20. Chen J, Yan LS, Zhou LH. Reliability and validity of Chinese version of Self-compassion Scale. Chin J Clin Psychol. 2011;19:734–6.
21. Neff KD. The development and validation of a scale to measure self-compassion. Self Identity. 2003;2:223–50.
22. Kubo T, Sawamya Y. Reliability and validity of the Japanese version of the passion scale. Jpn J Psychol. 2018;89:490–9.
23. Zhao Y, St-Louis A, Vallerand RJ. On the validation of the passion scale in Chinese. Psychol Well Being. 2015;5:53.
24. Vallerand RJ, Blanchard C, Mageau GA, Koestner R, Ratelle C, Léonard M, Gagné M, Marsolais J. Les passions de l’ame: on obsessive and harmonious passion. J Pers Soc Psychol. 2003;85:756–67.
25. Antony M, Bieling PJ, Cox BJ, Enns MW, Swinson RP. Psychometric properties of the 42-item and 21-item versions of the depression anxiety stress scales in clinical groups and community a sample. Psychol Assess. 1998;10:176–81.
26. Moussa MT, Lovibond PF, Laube R. Psychometric properties of a Chinese version of the short Depression Anxiety Stress Scales (DASS21). Report for New South Wales Transcultural Mental Health Centre, Cumberland Hospital, 2001.
27. Lovibond SH, Lovibond PF. Manual for the depression anxiety stress scales. 2nd ed. Sydney: Psychology Foundation; 1995.
28. Prenda KM, Lachman ME. Planning for the future: a life management strategy for increasing control and life satisfaction in adulthood. Psychol Aging. 2001;16:206–16.
29. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: development and initial validation. Int J Ment Health Addict. 2020. https://doi.org/10.1007/s11469-020-00270-8.
30. Chang KC, Hou WL, Pakpour AH, Lin CY, Griffiths MD. Psychometric testing of three COVID-19-related scales among people with mental illness. Int J Ment Health Addict. 2020. https://doi.org/10.1007/s11469-020-00361-6.
31. Masuyama A, Kubo T, Sugawara D, Yuta C. Interest consistency can buffer the effect of COVID-19 fear on psychological distress. Int J Ment Health Addict. 2021. https://doi.org/10.1007/s11469-021-00564-5.
32. Yuki M, Schug J. Psychological consequences of relational mobility. Curr Opin Psychol. 2020;32:129–32.
33. Sugawara D, Gu Y, Masuyama A, Ng SL, Pho EYM, Shah RABRR, Kubo T, et al., RE-COVER: REsilience for COVid-19 in Each Region [Data Collection], Open Science Framework https://osf.io/p56ga/.