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# DEPRESSION, ANXIETY AND STRESS LEVEL AMONG UNIVERSITY STUDENTS IN MALAYSIA DURING PHASE I AND PHASE II COVID-19 OUTBREAK

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**Abstract**

Millions of individuals throughout the world have been afflicted by the COVID-19 pandemic, which has had a significant impact on their psychological well-being. The study aimed to find out the level of stress, depression, and anxiety during phase I and phase II of the COVID-19 outbreak among university students. A self-administered questionnaire consisting of socio-demographic and DASS-21 questionnaire were used in this study. The research comprised 203 university students ranging in age from 19 to 74 years old. Most respondents were females (n=144) and males (n=59). The study enlisted the participation of 178 local and 25 international students. The students were pursuing bachelor's degrees (n=170), diplomas (n=8), master's degrees (n=5), and doctoral degrees (n=20). In the phase I study the stress score was (mean = 12.06, SD = 9.30), while in phase II, the stress score increased to (mean = 13.51, SD = 12.18). Meanwhile, the phase I study the depression score was (mean = 12.48, SD = 11.17), while in phase II, the depression score slightly increased to (mean = 12.85, SD = 12.16). For the phase I study the anxiety score was (mean = 11.26, SD = 10.06), while in phase II, the anxiety score reduced to (mean = 9.53, SD = 10.18). The anxiety level was improved in phase II of COVID-19, however, the depression and stress levels did not show the reductions. A deeper knowledge of stress, depression, and anxiety among university students is required to allow for early intervention and improvement of overall mental health problems among the students.

Keywords: Psychiatric symptoms; Stress; Depression; Anxiety; Student; Covid-19 Phase I: Phase II.



## 1.0 INTRODUCTION

According to a scientific report issued by the World Health Organization (WHO), the global incidence of anxiety and depression soared by a staggering 25% in the first year of the COVID-19 pandemic ("WHO," 2022). The report also discusses who has been most affected by the epidemic and outlines the impact of the pandemic on the availability of mental health treatments, as well as how this has evolved. Concerns about the potential for mental health disorders to worsen prompted 90 per cent of nations surveyed to include mental health and psychosocial assistance in their COVID-19 response plans, but there are still significant gaps and concerns (WHO, 2022). One key reason for the surge is the tremendous stress brought on by the pandemic's social isolation. Constraints on people's capacity to work, seek help from loved ones, and participate in their communities were all linked to this. Loneliness, fear of infection, pain and death for oneself and loved ones, sadness following a loss, and financial problems have all been identified as stressors that contribute to anxiety and depression. Exhaustion has been identified as a primary factor for suicide ideation among healthcare professionals(WHO, 2022).

Anxiety about the economy and overall load showed positive links, whereas age, having a consistent income, obtaining enough social interaction, sleep, and recovery all had negative correlations. These findings imply that the COVID-19 pandemic has already had an impact on mental health(Rondung, Leiler, Meurling, & Bjärtå, 2021). Millions of individuals throughout the world have been afflicted by the COVID-19 pandemic, which had a significant impact on their psychological well-being, social lives, and professional lives. Till May 31, 2023, it has affected over 200 nations, and infected 689,549,614 people. and killed 6,884,633 people. The illness epidemic may affect the mental health of the population("worldometers," 2022). The purpose of this study was to examine the relationships between stress, anxiety, and depression.

Coronavirus Illness 2019 (COVID-19) is a coronavirus 2-related respiratory infectious illness that produces severe acute respiratory syndrome (SAR-CoV-2). The illness has spread fast after the identification of COVID-19 patients in Wuhan, China, in December 2019. On March 11, 2020, the World Health Organization (WHO) proclaimed COVID-19 a worldwide pandemic (Cucinotta & Vanelli, 2020). There was no therapy for the illness previously, but an interim analysis of the phase 2/3 evaluation of

protease inhibition for COVID-19 in high-risk individuals found impressive outcomes. The novel COVID-19 oral antiviral therapy from Pfizer was found to minimise the risk of hospitalisation or death by 89 per cent (NEWS., 2021). University students face many challenges due to the closure of educational institutions across the country and the shift from physical classes to online classes. As a result of the ongoing MCO, university students' mental health is expected to be affected, with increased levels of stress, anxiety, and depression likely. Many studies have focused on COVID-19's epidemiological, pathological, therapeutic, and pharmacological aspects, but this study takes a new approach(Son, Hegde, Smith, Wang, & Sasangohar, 2020; Zhai & Du, 2020a, 2020b). During this unprecedented epidemic, the current study focuses on COVID-19's psychological impact on university students.

Stress, anxiety, and depression are the most common psychological morbidities identified among students. Students are not only burdened by their assignments in this COVID-19 epidemic, but they are also at risk of getting mental problems (Son et al., 2020; Zhai & Du, 2020a, 2020b). In higher education, student mental health has been a significant issue. The COVID-19 outbreak has brought this vulnerable group back into the spotlight. As a result, our research aims to provide a timely examination of the influence of the COVID-19 pandemic on university and college students' mental health in terms of depression, anxiety, and stress levels during phase 1 and phase 2 of the COVID-19 pandemic.

## 2.0 RESEARCH METHODOLOGY

### Study design, location and population

This is a multi-centre cross-sectional study conducted at SEGi university and colleges, Asia E University, Asia Metropolitan University, International Medical University, Open University Malaysia, Sunway College University, Universiti Malaysia Sarawak, Universiti Tun Abd Razak, University of Nottingham, and AIMST university in Malaysia. The research included a total of 203 students.

### Study instruments

The participants initially filled out a socio-demographic questionnaire, which included questions on their age, gender, race, religion, marital status, education level, occupation, socio-economic status, and family size. They next completed the Depression, Anxiety, and Stress Scale (DASS- 21) questionnaire, which is a validated questionnaire. The Depression, Anxiety, and Stress Scale-21 (DASS-21) is a self-report questionnaire that examines depression, anxiety, and stress. The DASS-21 has already been used in studies on SARS (severe acute respiratory sickness). It consists of 21 elements, with each subscale having seven items. The following Likert scale was used to express the responses: 0 indicates that it did not apply to me at all, 1 indicates that it applied to me to some degree, or some of the time, 2 indicates that it applied to me to a considerable degree or a good part of the time and 3 indicates that it applied to me very much or most of the time used in the study. Questions 3, 5, 10, 13, 16, 17, and 21 were used to create the depression subscale. The overall depression subscale score was divided into four categories: normal (0–9), mild depression (10– 12), moderate depression (13–20), severe depression (21–27), and extremely severe depression (28–42). Questions 2, 4, 7, 9, 15, 19, and 20 comprised the anxiety subscale. The overall anxiety subscale score was divided into four categories: normal (0–6), mild anxiety (7–9), moderate anxiety (10–14), severe anxiety (15–19), and extremely severe anxiety (20–42). Questions 1, 6, 8, 11, 12, 14, and 18 made up the stress subscale. The overall stress subscale score was divided into four categories: normal (0–10), mild stress (11–18), moderate stress (19–26), severe stress (27– 34), and extremely severe stress (35–42). The scores on the elements per (sub) scale are multiplied by a factor of two to get the sum score. As a result, each subscale's aggregate score will range from 0 to 42. The Cronbach's alpha values for the DASS-21 questionnaire are 0.84 for depression, 0.74 for anxiety, and 0.79 for stress.

Inclusion criteria

The participants were chosen using five major inclusion criteria. Participants must initially be university students enrolled in Malaysian higher education institutions. Second, the person must be at least eighteen years old. Third, participants in the study must be able to converse in English. Fourth, the individuals must be physically capable of participating in the survey. Fifth, the student must be enrolled in a diploma or higher programme.

### Exclusion criteria

The research excludes students under the age of 18, Malaysian students studying abroad, and students participating in programmes below the diploma level.

### Sampling method and data collection technique

In this investigation, snowball sampling was employed. The researchers issued an online form that is divided into two sections: socio-demographic and DASS-21 surveys.

### Statistical analysis

The Statistical Package for the Social Sciences, version 22, was used to analyse the data.

**Ethical consideration**

The [SEGi University] Research & Ethics Committee approved this study (Research Project Number: [SEGiRF/2021-2/FoM-7/105]). The students' involvement in this study was voluntary and anonymous, and they gave their informed consent. The information gathered is kept in complete confidence.

## 3.0 RESEARCH FINDINGS

A total of 203 university students aged from 19-74 years old were included in the study. Most respondents were females (n=144) and males (n=59). The study enlisted the participation of 178 local and 25 international students. The students were pursuing bachelor's degrees (n=170), diplomas (n=8), master's degrees (n=5), and doctoral degrees (n=20).

Data collection

Google Forms was used to develop the study questionnaire. The first page included the participant information statement and the consent form. Participants, who provided consent, could move to the next screen. Eligible participants accessed the full study questionnaire and responses were collected anonymously. The online survey link was shared through university staff/students, text messages, WhatsApp and other social media platforms such as Facebook. A hundred participants were recruited under phase I of the study which started from February to April 2021 and another 103 participants were recruited for phase II of the study which started from May to October 2022.

In the phase I study the stress score was (mean = 12.06, SD = 9.30), while in phase II, the stress score was increased to (mean = 13.51, SD = 12.18) Table 1. Meanwhile, the phase I study the depression score was (mean = 12.48, SD = 11.17), while in phase II, the depression score was increased to (mean = 12.85, SD = 12.16) Table 2. For the phase I study the anxiety score was (mean = 11.26, SD = 10.06), while in phase II, the anxiety score was increased to (mean = 9.53, SD = 10.18) Table 3.

Data analysis

Descriptive analyses are conducted using frequency/mean/percentages etc and data presented in tables/histogram

**Table 1:** Stress Score

| Group Statistics | | | | | |
|---|---|---|---|---|---|
| | PHASE | N | Mean | Std. Deviation | Std. Error Mean |
| Stress | PHASE I | 100 | 12.0600 | 9.30061 | .93006 |
| | PHASE II | 103 | 13.5146 | 12.17669 | 1.19981 |

**Table 2** Depression Score

| Group Statistics | | | | | |
|---|---|---|---|---|---|
| | PHASE | N | Mean | Std. Deviation | Std. Error Mean |
| Depression | PHASE 1 | 100 | 12.4800 | 11.17038 | 1.11704 |
| | PHASE 2 | 103 | 12.8544 | 12.16102 | 1.19826 |

**Table 3** Anxiety Score

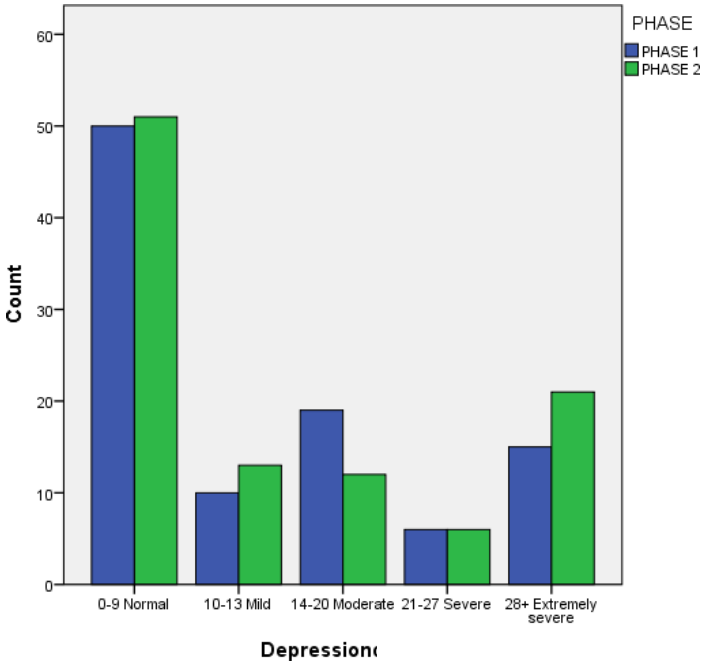
| Group Statistics | | | | | |
|---|---|---|---|---|---|
| | PHASE | N | Mean | Std. Deviation | Std. Error Mean |
| Anxiety | PHASE 1 | 100 | 11.2600 | 10.05703 | 1.00570 |
| | PHASE 2 | 103 | 9.5340 | 10.17573 | 1.00264 |

The findings also revealed that 50 per cent of respondents reported various levels of depression, with mild (10%), moderate (19%), severe (6 %) and extremely severe depression (15%) (Table 4) during phase 1. The findings also revealed that 49 per cent of respondents reported various levels of depression, with mild (12.6%), moderate (11.7%), severe (5.8 %) and extremely severe depression (20.4%) (Table 4) during phase 2.

**Table 4** Depression level

| | Phase I | | Phase II | |
|---|---|---|---|---|
| | Frequency | Per cent | Frequency | Per cent |
| 0-9 Normal | 50 | 50.0 | 51 | 49.5 |
| 10-13 Mild | 10 | 10.0 | 13 | 12.6 |
| 14-20 Moderate | 19 | 19.0 | 12 | 11.7 |

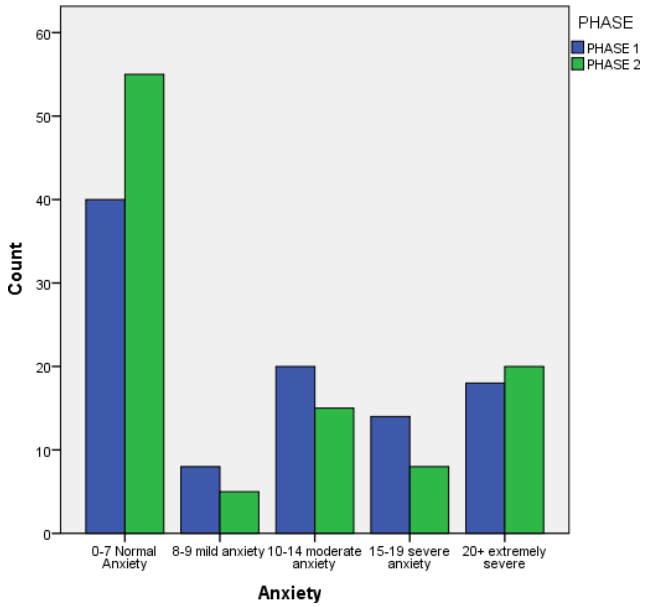
| | | | | |
|---|---|---|---|---|
| 21-27 Severe | 6 | 6.0 | 6 | 5.8 |
| 28+ Extremely severe | 15 | 15.0 | 21 | 20.4 |
| Total | 100 | 100.0 | 103 | 100.0 |




The findings also revealed that 60 per cent of respondents reported various levels of anxiety, with mild (8%), moderate (20%), severe (14 %) and extremely severe depression (18%) (Table 4) during phase 1. The findings also revealed that 46.6 per cent of respondents reported various levels of anxiety, with mild (4.9 %), moderate (14.6 %), severe (7.8 %) and extremely severe depression (19.4%) (Table 5) during phase 2.

**Table 5**: Anxiety

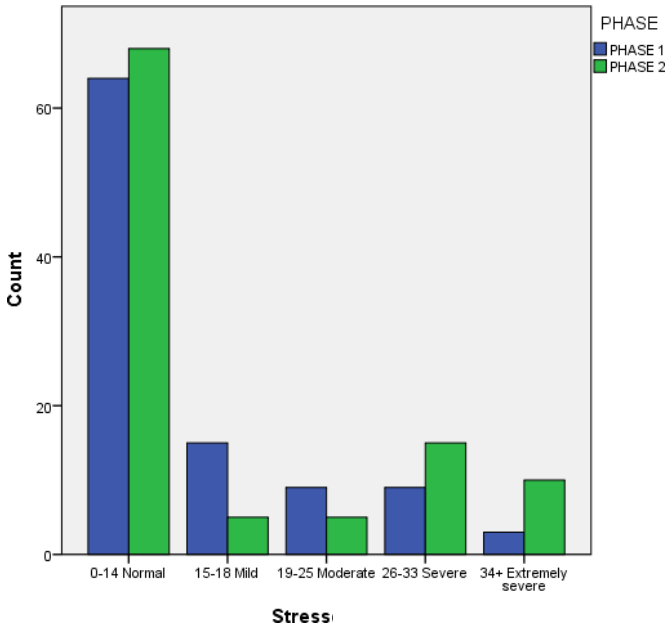
| | Phase I | | Phase II | |
|---|---|---|---|---|
| | Frequency | Per cent | Frequency | Per cent |
| 0-7 Normal Anxiety | 40 | 40.0 | 55 | 53.4 |
| 8-9 mild anxiety | 8 | 8.0 | 5 | 4.9 |
| 10-14 moderate anxiety | 20 | 20.0 | 15 | 14.6 |
| 15-19 severe anxiety | 14 | 14.0 | 8 | 7.8 |
| 20+ extremely severe | 18 | 18.0 | 20 | 19.4 |
| Total | 100 | 100.0 | 103 | 100.0 |




About 36% of respondents experienced various levels of stress, with mild (15%), moderate (9%), severe (9%), and extremely severe (3%) levels of stress (Table 6) during phase 1. About 34% of respondents experienced various levels of stress, with mild (4.9%), moderate (4.9%), severe (14.6%), and extremely severe (9.7%) levels of stress (Table 6) during phase 2.

Table 6: Stress

| | Phase I | | Phase II | |
|---|---|---|---|---|
| | Frequency | Per cent | Frequency | Per cent |
| 0-14 Normal | 64 | 64.0 | 68 | 66.0 |
| 15-18 Mild | 15 | 15.0 | 5 | 4.9 |
| 19-25 Moderate | 9 | 9.0 | 5 | 4.9 |
| 26-33 Severe | 9 | 9.0 | 15 | 14.6 |
| 34+ Extremely severe | 3 | 3.0 | 10 | 9.7 |
| Total | 100 | 100.0 | 103 | 100.0 |



## 4.0 DISCUSSION

The level of depression increased tremendously followed by anxiety during the Covid-19 pandemic. This is supported by previous meta-analysis which aimed to provide an up-to-date estimate of the prevalence of depression among community-dwelling adults by combining the data of 1 million participants from 30 countries between 1994 and 2014. Starting from 1994 to 2014, the researcher found that the overall point prevalence was only 12.9 per cent, the one-year prevalence was 7.2 per cent and the lifetime prevalence was 10.8 per cent (Lim et al., 2018).

The current study reported that anxiety level was improved in phase II of COVID-19, however, the depression and stress level did not show the reductions. Due to the long-term pandemic condition and demanding steps such as lockdown and stay-at-home orders, the COVID-19 pandemic has had a detrimental impact on higher education. Concern with their wellness as well as the well-being of their loved ones (n=177, 91%) expressed negative impacts of the pandemic and difficulty in focusing (n=177) due to the outbreak. The COVID-19 pandemic resulted in 138(71%) of the 195 students experiencing increased stress and anxiety. Several stresses were caused by the increasing levels of tension, anxiety, and suicide ideation among the students in the previous study (Son et al., 2020).

Most of the recent literature on COVID-19's psychological impact explained the depression and its impact on socio-economic problems. Many researchers have examined mental health issues in epidemics, with the majority of them focusing on healthcare workers, patients, children and the general public (Lai et al., 2020). There is an immediate need to examine the impact of the current pandemic on university or college student's mental health and well-being, as mentioned in many recent studies (Holmes et al., 2020; Zhai & Du, 2020a, 2020b). The goal of the previous study was to examine DASS-21 scores and determine the relationship between physical symptoms similar to COVID-19 infection and negative mental health outcomes, as well as the processes behind this relationship in multi-national populations from Asia, Europe, and North America. The following is a summary of the important findings: (a) Poland and Pakistan had high levels of anxiety, depression and stress; (b) Vietnam had the lowest mean anxiety, depression, and stress scores; and (c) physical symptoms similar to COVID-19 infection were a risk factor for negative mental health outcomes (Wang et al., 2021).

Data on suicide mortality, population, and unemployment were gathered from publicly available statistical datasets (e.g. Statistics Canada). The suicide rate was calculated by dividing the total number of suicide fatalities by the national population, which was represented as a rate per 100,000. The findings imply that government actions aimed at reducing insecurity in general (e.g., economic, housing, health), as well as prompt psychiatric care should be prioritized as part of a national suicide prevention plan, not only now but also after the COVID-19 epidemic ends (McIntyre et al., 2021).

COVID-19 and mental patients are concerned about their health substantially more than healthy controls ($p = 0.019$). Impulsivity ($p = 0.016$) and sleeplessness ($p = 0.039$) were more common in COVID-19 patients compared to healthy controls. The COVID-19 patients also reported a greater psychological effect of the epidemic than psychiatric patients or healthy controls, with half having clinically severe post-traumatic stress disorder symptoms. Depression, anxiety and stress levels were greater in COVID-19 and psychiatric patients than in healthy individuals. Three themes emerged from the interviews with COVID-19 patients: (i) patients' emotions after infection (shock, fear, despair, hope, and boredom); (ii) external factors that influenced patients' mood (discrimination, medical expenses, and healthcare workers' care); and (iii) coping and self-help behaviour (i.e., distraction, problem-solving and online support). The formation of a complete programme to handle COVID-19 is the future path in COVID-19 care(Hao et al., 2020).

The previous study showed that patients with Post-traumatic stress disorder (PTSD) showed much greater levels of depression, anxiety and stress. Other risk factors such as being single, separated, or widowed, having a higher education level, bigger family size, losing employment, and being in touch with probable COVID-19 patients were all linked to an elevated degree of depression, stress, and anxiety(Le et al., 2020). Retirement, physical symptoms resembling COVID-19 infection, recent medical consultation or COVID-19 testing and long daily duration of home confinement were all risk factors for PTSD symptoms, anxiety, depression, or stress among Polish respondents (Wang et al., 2020).

A cross-sectional study employing a web-based approach was done to investigate the impact of national social distance on the quality of life and economic well-being of Vietnamese individuals during the COVID-19 pandemic. Socioeconomic variables, the influence of COVID-19 on household income, health status, and health-related quality of life were all included in the data (HRQOL). The variables connected with a change in income and HRQOL were investigated using ordered logistic regression and a multivariable Tobit regression model. According to the findings, 66.9% of 341 participants reported a decrease in household income as a result of COVID-19. People with bachelor's degrees, those working in industries other than healthcare, and those on fixed-term contracts had a greater chance of losing their jobs. Anxiety or depression had the largest proportion among them (Tran et al., 2020).

Virus infections and pandemics have recently received considerable attention. The COVID-19 epidemic has brought attention to people who have been diagnosed with mental health. Epidemics have a tendency to spread or create more strains, fear and worry about self or a loved one, restrictions in terms of physical activity as well as social contacts or quarantine which will cause drastic alterations in way of life (Brooks et al., 2020).

## 5.0 CONCLUSION

Through this study, a better understanding of the role of stress, depression and anxiety among the university students would provide an opportunity to intervene early and improve the overall mental health problems among the university students.

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## References


Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: a rapid review of the evidence. Lancet, 395(10227), 912-920. doi: 10.1016/s0140-6736(20)30460-8

Cucinotta, D., & Vanelli, M. (2020). WHO Declares COVID-19 a Pandemic. Acta Biomed, 91(1), 157-160. doi: 10.23750/abm.v91i1.9397

Hao, Fengyi, Tam, Wilson, Hu, Xiaoyu, Tan, Wanqiu, Jiang, Li, Jiang, Xiaojiang, . . . Ho, Roger C. M. (2020). A quantitative and qualitative study on the neuropsychiatric sequelae of acutely ill COVID-19 inpatients in isolation facilities. Translational Psychiatry, 10(1), 355. doi: 10.1038/s41398-020-01039-2

Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wessely, S., Arseneault, L., . . . Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. Lancet Psychiatry, 7(6), 547-560. doi: 10.1016/s2215-0366(20)30168-1

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., . . . Hu, S. (2020). Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open, 3(3), e203976. doi: 10.1001/jamanetworkopen.2020.3976

Le, H. T., Lai, A. J. X., Sun, J., Hoang, M. T., Vu, L. G., Pham, H. Q., . . . Ho, C. S. H. (2020). Anxiety and Depression Among People Under the Nationwide Partial Lockdown in Vietnam. Front Public Health, 8, 589359. doi: 10.3389/fpubh.2020.589359

Lim, G. Y., Tam, W. W., Lu, Y., Ho, C. S., Zhang, M. W., & Ho, R. C. (2018). Prevalence of Depression in the Community from 30 Countries between 1994 and 2014. Sci Rep, 8(1), 2861. doi: 10.1038/s41598-018-21243-x

McIntyre, R. S., Lui, L. M., Rosenblat, J. D., Ho, R., Gill, H., Mansur, R. B., . . . Lee, Y. (2021). Suicide reduction in Canada during the COVID-19 pandemic: lessons informing national prevention strategies for suicide reduction. J R Soc Med, 114(10), 473-479. doi: 10.1177/01410768211043186

NEWS., NEWS. (2021). NEWS/ Pfizer's Novel COVID-19 Oral Antiviral Treatment Candidate Reduced Risk Of Hospitalization Or Death By 89% In Interim Analysis Of Phase 2/3 EPIC-HR Study. https://www.pfizer.com/news/press-release/press-release-detail/pfizers- novel-covid-19-oral-antiviral-treatment-candidate 2021.

Rondung, Elisabet, Leiler, Anna, Meurling, Jennifer, & Bjärtå, Anna. (2021). Symptoms of Depression and Anxiety During the Early Phase of the COVID-19 Pandemic in Sweden. Frontiers in Public Health, 9. doi: 10.3389/fpubh.2021.562437

Son, Changwon, Hegde, Sudeep, Smith, Alec, Wang, Xiaomei, & Sasangohar, Farzan. (2020). Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. J Med Internet Res, 22(9), e21279. doi: 10.2196/21279

Tran, B. X., Nguyen, H. T., Le, H. T., Latkin, C. A., Pham, H. Q., Vu, L. G., . . . Ho, R. C. M. (2020). Impact of COVID-19 on Economic Well-Being and Quality of Life of the Vietnamese During the National Social Distancing. Front Psychol, 11, 565153. doi: 10.3389/fpsyg.2020.565153

Wang, C., Chudzicka-Czupała, A., Grabowski, D., Pan, R., Adamus, K., Wan, X., . . . Ho, C. (2020). The Association Between Physical and Mental Health and Face Mask Use During the COVID-19 Pandemic: A Comparison of Two Countries With Different Views and Practices. Front Psychiatry, 11, 569981. doi: 10.3389/fpsyt.2020.569981

Wang, C., Chudzicka-Czupała, A., Tee, M. L., Núñez, M. I. L., Tripp, C., Fardin, M. A., . . . Sears, S. F. (2021). A chain mediation model on COVID-19 symptoms and mental health outcomes in Americans, Asians and Europeans. Sci Rep, 11(1), 6481. doi: 10.1038/s41598-021-85943-7

WHO. (2022). Retrieved 10.6.2022, from https://www.who.int/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide

Worldometers. (2022). Retrieved 10.6.2022, from https://www.worldometers.info/coronavirus/ among university students during the pandemic.

Zhai, Y., & Du, X. (2020a). Addressing collegiate mental health amid the COVID-19 pandemic. Psychiatry Res, 288, 113003. doi: 10.1016/j.psychres.2020.113003

Zhai, Y., & Du, X. (2020b). Mental health care for international Chinese students affected by the COVID-19 outbreak. Lancet Psychiatry, 7(4), e22. doi: 10.1016/s2215-0366(20)30089-4