

CHAPTER FIFTEEN

Mental Health Issues Among Iranian University Students During COVID-19 Pandemic

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ABSTRACT

The COVID-19 pandemic is a public health crisis that has also imposed a mental health burden, to which university students are particularly vulnerable. It is well documented that university students tend to have higher levels of mental health issues, and the pandemic has been an exacerbating factor on their mental health and wellbeing. Investigation of the mental health of this group can therefore have major implications for healthcare services and mental health policies. With timely diagnosis and recognition of psychological problems, effective solutions can be found to improve their mental health, coping styles, and quality of life. Appropriate action could prevent academic failure and provide an opportunity for social achievements, development of social skills, and improved mental health for these students. This chapter reviews the mental health problems among Iranian university students during the pandemic and reports a study exploring the relationship between depression related to the pandemic, anxiety related to the pandemic, and obsession with the pandemic. In a sample of university students in Iran, COVID-19 depression, COVID-19 anxiety, and obsession with COVID-19 were all positively associated with each other, with female students showing significantly higher levels of COVID-19 depression than males.

Keywords:

INTRODUCTION

The COVID-19 outbreak was declared a pandemic by the World Health Organization (WHO) on March 11 of 2020 (WHO, 2020). At the time of this study, 273,685,515 cases and 5,357,661 deaths had been reported worldwide (Worldometers, 2021, December 17). As the virus first spread rapidly around the world, several protection measures and restrictions were introduced by most governments (Asmundson & Taylor, 2020), and these have had negative effects on the mental health of the populace.

Several studies have been conducted to study the effects of the pandemic on mental health and well-being and to create possible strategies for protecting it (e.g., Adibi et al., 2020; Ahmed et al., 2020; August & Dapkewicz, 2020; Brooks et al., 2020; Gashi, 2020; Kaplan et al., 2020). For example, Olszewska-Guizzo et al. (2021), found that stay-at-home orders were exacerbating factors for depressive symptoms and momentary mood disturbance. A study by Le et al. (2020a) found a high prevalence of post-traumatic stress symptoms accompanying the lockdown, with 16.4% of participants reporting low levels of post-traumatic stress symptoms, 5.3% moderate levels, and 5.4% high levels. Another found that as household incomes decreased due to restrictions on work, anxiety/depression symptoms also increased (Tran et al., 2020). And in a comparing Chinese and Polish respondents, Wang et al. (2020a) reported that Polish people wear masks less often, seek medical attention more often, and showed higher levels of anxiety, depression, and stress than the Chinese participants.

Clearly, the COVID-19 pandemic and its associated restrictions have imposed a mental health burden, with implications for interventions (see Arpacia et al., 2020; Cao et al., 2020; Chang et al., 2020; Galea et al., 2020; Geldsetzer, 2020; Goyal et al., 2020; Gritsenko et al., 2020; Jahanshahi et al., 2020; Limcaoco et al., 2020; Lin, 2020; Lin et al., 2020; Mamun & Griffiths, 2020; Mertens et al., 2020; Moghanibashi-Mansourieh, 2020; Nourizadeh et al.,

2020; Ornell et al., 2020; Pakpour & Griffiths, 2020; Pakpour et al., 2020; Qiu et al., 2020; Ransing et al., 2020a,b; Ren et al., 2020; Sorokin et al., 2020; Sun et al., 2020; Wang et al., 2020b). Collectively, the research suggests that the sudden onset of the pandemic has been damaging to mental health, for example by increasing fear and anxiety—particularly in countries with higher prevalence of the virus. Fear of COVID-19 could continue even after the pandemic has subsided.

The rapid spread and mutation of the virus, and the uncertainties associated with it, have been found to cause stress, depression, phobia, and anxiety in various countries. This has included depression, anxiety and stress in China, Spain, Philippines, and Iran (Wang et al., 2020c; Wang et al., 2021a, 2021b; Tee et al. 2021); depression and anxiety in Vietnam (Le et al., 2020b); depression, anxiety, and PTSD in the USA and UK (Lin et al., 2020; Shevlin et al., 2020); depression in Denmark (Sønderskov et al., 2020); and depression, stress, fear, phobia, and anxiety in other countries (Arpaci et al., 2020; Brailovskaia, & Margraf, 2020; Bueno-Notivol et al., 2021; Dadfar et al., 2021; Dadfar, & Lester, 2021; Fitzpatrick et al., 2020; Guizzo et al., 2021; Hilton, 2021; Ho et al., 2020; Huang, & Zhao, 2020; Islam et al., 2021; Kazmi et al., 2020; Mazza et al., 2020; Nazari et al., 2021; Pedrozo-Pupo & Campo-Arias, 2020; Satici et al., 2020; Tasnim et al. 2021).

Anxiety and depression levels have increased significantly during the period of the pandemic (Thomas et al., 2020), and this has affected young people more than other age groups, showing higher anxiety, depression and alcohol use, and lower mental health indicators (Ahmed et al., 2020). Tsamakidis et al. (2021) found that mental health problems such as depression symptoms and social anxiety during the pandemic are strongly correlated with loneliness in adolescents and young adults. And this is not merely due to restrictions: one of the risk factors for adverse mental health outcomes (such as anxiety, depression, and stress) is

experiencing physical symptoms similar to COVID-19 infection (Wang et al., 2021d, 2021e), indicating that worry about getting sick is also a factor.

Iran is one of the more severely affected countries in the world according to the WHO (2021), with a total of 6,167,650 known cases and 130,992 deaths (1,531/million population) as of 17 December, 2021 (Worldometer, 2021). The pandemic has caused human, economic and social consequences including a wide range of psychological and behavioural effects, and Iran is no exception. It has impacted the mental health of Iranians due to restrictions on daily activities and, in some cases, the deaths of loved ones and friends (Dadfar & Nasr Esfahani, 2020; Khademian et al., 2021; Taghrir et al., 2020; Zandifar & Badrfam, 2020; Zhang et al., 2020).

Mental health in university students during COVID-19

Mental health is an important dimensions of postsecondary students' health as the future builders of society. Due to their special circumstances such as being away from home and separated from family, entering a new environment, and various academic, social, and financial problems, this group is particularly subject to high levels of stress, which can trigger or exacerbate mental disorders (Dehdari et al., 2013). The experience of entering university is associated with the transition from adolescence to young adulthood, wherein students assume new responsibility for their decisions, lifestyle and health. This process requires adaptation and adjustment to new academic, social and professional demands (Acharya et al., 2020; Lauckner et al., 2020). Some research from prior to the pandemic has investigated psychological distress and mental health problems such as depression among Iranian college students (see Amiri et al., 2019; Amirpour et al., 2018; Atef Vahid et al., 2015, 2016; Dadfar et al., 2014, 2018, 2019;

Dadfar et al., 2021; Shamsaei et al., 2018), identifying moderate to high psychological problems in the samples.

It is in this context that university students experience the additional disruptions and pressures introduced by the COVID-19 outbreak and associated restrictions (Abu-El-Noor, 2021; Marelli et al., 2021; Muyor-Rodríguez et al., 2021; Odriozola-González et al., 2020; Sahu, 2020). After the WHO's declaration in March of 2020, schools and universities in most countries were closed, in-person lessons were transitioned into virtual settings, social activities were canceled, and foreign students were encouraged to return home (Pokhrel & Chhetri, 2021; World University Rankings, 2021). Students' social relationships also became limited as they adapted to online education while learning from home. University students returning to their families have been spending more time with them and experiencing role changes. Students generally have information about COVID-19 symptoms and methods of protection from infection, but nonetheless they are fearful of it and this has led to higher rates of somatization, obsessive-compulsive disorder, anxiety, phobic anxiety, paranoid thinking and general violence in this group (Jiang, 2020).

Several studies have reported an increase in feelings of fear, anxiety, concern, stress among students resulting from COVID-19 (see Bitan et al., 2020; Cao et al., 2020; Dadfar et al., 2021; Dadfar & Lester, 2021; Khan et al., 2020; Konstantinov et al., 2020; Nguyen et al., 2020a, 2020b; Safa et al., 2020; Saravanan et al., 2020; Son et al., 2020; Tsipropoulou et al., 2020; Wang et al., 2020f). Several factors that trigger stress, anxiety and depression can be identified in the lives of university students. Just prior to the pandemic in 2019, the University Mental Health Center reported that anxiety and depression continued to be the most common and most important concerns of students. And in the period since the onset of COVID-19, the stress and anxiety experienced by students has increased to even higher levels (Son et al., 2020).

In a study of Turkish university students, Arslan, Yıldırım, and Aytaç (2020) found low levels of subjective vitality and loneliness that were related to COVID-19 anxiety and increased rumination. Some of the international students at Central China Normal University (CCNU) reported that the social distancing due to the pandemic had caused psychological distress and mental problems for them (Lorreta et al., 2020). Ren et al. (2021) investigated how the reopening of universities in China were affecting student mental health, and found that measures maintained during this transition such as quarantines, temperature checks and mask-wearing were contributing factors to anxiety and depression.

Having higher levels of general self-efficacy has been shown to be a protective factor for mental health (Rabani Bavojdan, et al., 2011), and academic self-efficacy has been found to correlate with academic performance and mental distress (Grøtan et al, 2019). Yıldırım and Güler (2020) reported that in the pandemic context, mental health could be predicted by self-efficacy, along with severity of the pandemic and preventive behaviours. One study on Iranian medical students found that 36.4% Iranian medical students reported low COVID-19 self-efficacy, which indicates sense of control over avoiding COVID-19 (Dadfar & Sanadgol, 2021). Another reported that preventive behaviours negatively correlated with risk perception of COVID-19, and a high level of COVID-19 related knowledge and self-reported preventive behaviours and average risk perception (Taghrir et al., 2020).

Coping strategies can help to reduce the harms on mental health and well-being caused by the pandemic. Apart from religious coping (Yıldırım et al., 2021), it has been determined that effective use of secular coping strategies can also be helpful. August and Dapkwicz (2020) found that students who use the “benefit-finding” strategy reduce their likelihood of expressing fear, anxiety and stress. Benefit-finding is a meaning-based coping strategy of focusing on positive aspects, such as gratitude, personal development, self-sacrificing

behaviour, and using creative solutions and teamwork during crisis periods to reduce stress and anxiety (August & Dapkewicz, 2020).

Physical activity levels of students have also decreased during the pandemic (Korkmaz et al., 2020), and this presents a risk factor for physiological and psychological problems. Needing to adapt to a new lifestyle can increase stress and anxiety, and many students (females especially) have reported role changes as a result of continuing their education with online methods, while also taking on tasks such as caring for family members (Sever & Özdemir, 2020). In the studies conducted during the COVID-19 pandemic, emotions such as stress, anxiety, fear and hopelessness have come to the fore (Aşkın et al., 2020; Uçkaç, 2020). For example, Özkul (2020) found that physical inactivity, stress, anxiety and depression had increased among university students.

This chapter reports a study exploring whether depression related to COVID-19 is associated with anxiety and obsession related to COVID-19—the first such study. A strength of this study is its context, the research data coming from one of the most severely affected countries in the world, Iran. The aims of the present study were: (1) to explore the association between COVID-19 depression, COVID-19 anxiety, and COVID-19 obsession and (2) to explore sex differences in these variables.

METHODS

Participants

A sample of 240 Iranian university students residing in one of nine student dormitories at the Iran University of Medical Sciences were recruited and volunteered for participation in July 2021. This was a convenience sample, as only some students were present at the

dormitories while others were not permitted on the premises due to COVID-19 restrictions.

The required sample size was calculated using Cochran's formula (Cochran, 1963).

Procedure

The students were invited to voluntarily participate, and the study's objective was explained to them. Confidentiality was assured, anonymity was maintained, and all participants provided verbal informed consent. The surveys were distributed by directors of the student dormitories, and data were collected for three weeks. The study was approved by the Institutional Review Board of Iran University of Medical Sciences. The students were administered the scales individually. All students completed the scales fully.

Measures

The COVID-19 Depression Scale (COVID-19DS)

The COVID-19DS, originally developed in Farsi (Persian) by Dadfar and Lester (unpublished), is a 16-item self-report scale used for assessing depression resulting from the COVID-19 pandemic (henceforth referred to as COVID depression). Participants indicate their level of agreement with statements using a 5-point Likert scale ranging from “Not at all” (0) to “Nearly every day over the last 2 weeks” (4). The total score ranges from 0 to 64, with a higher score indicating more COVID depression (Dadfar et al., in press). A typical item for the COVID-19DS is “I get depressed when thinking about COVID-19.”

The Coronavirus Anxiety Scale (CAS)

The CAS, developed by Lee (2020a), is a 5-item self-report scale used for assessing physiologically-based symptoms that are aroused with coronavirus-related information and thoughts (henceforth, COVID anxiety). Using a 5-point time anchored scale (0 = “not at all,”

4 = “nearly every day over the last 2 weeks”), participants rate how frequently they experience each anxiety symptom (Lee et al., 2020). The total score ranges from 0 to 20, with a higher score indicating more COVID anxiety. A typical item for the CAS is “I felt dizzy, lightheaded, or faint, when I read or listened to news about the coronavirus.”

The Obsession with COVID-19 Scale (OCS)

The OCS, also developed by Lee (2020b), is a 4-item self-report scale used for assessing persistent and disturbed thinking about COVID-19 (henceforth, COVID obsession). Using a 5-point time anchored scale (0 = “not at all” to 4 = “nearly every day over the last 2 weeks”), participants rate how often they experience persistent and disturbed thinking about COVID-19. The total score ranges from 0 to 16, with a higher score indicating more COVID obsession (Ashraf et al., 2020). A typical item for the CAS is “I had disturbing thoughts that I may have caught the coronavirus.”

RESULTS

The mean age of the students was 24.8 years ($SD = 3.5$); 67.5% were female; and the plurality of students (37.1%) were studying in a general physician (GP) program. The mean total score for the COVID-19DS was 8.71 ($SD = 10.71$), 0.70 for the CAS ($SD = 1.72$), and 1.63 for the OCS ($SD = 2.31$).

Correlation analysis showed that COVID depression was positively associated with COVID anxiety ($r = 0.53, p < .01$), and COVID obsession ($r = 0.65, p < .01$), and COVID anxiety was positively associated with COVID obsession ($r = 0.66, p < .01$). Using Process Macro Model 6 (Serial Multiple Mediation Analysis; Hayes, 2018a 2018b), there significant direct effects of COVID anxiety on COVID depression ($\beta = 0.47, p < .001$) and COVID obsession ($\beta = 0.15, p < .05$). COVID depression and COVID obsession were assessed as

mediation variables, and COVID obsession positively predicted COVID depression ($\beta = 0.46$, $p < .001$). Men and women did differ in COVID-19DS scores ($M = 5.3$, $SD = 5.5$ for men; $M = 10.3$, $SD = 11.3$ for women; $t(238) = 3.51$), but not in CAS scores ($M = 0.67$, $SD = 1.6$ for men; $M = 0.72$, $SD = 1.7$ for women; $t(238) = 0.208$), or OCS scores ($M = 1.3$, $SD = 2.2$ for men; $M = 1.84$, $SD = 2.3$ for women; $t(238) = 1.52$).

DISCUSSION

The research presented in this chapter sought to identify mental health issues in Iranian university students that are related with the COVID-19 pandemic. Using a nonclinical Iranian sample, significant positive correlations were found between all pairings of COVID anxiety, COVID depression, and COVID obsession. Further, COVID obsession positively predicted COVID depression.

These results mirror similar findings in other national contexts. Caycho-Rodríguez et al. (2020) found that depression mediates the relationship between COVID anxiety and subjective well-being in a sample of Peruvian university students. A study on Turkish undergraduate students showed that association between coronavirus stress and depressive symptoms can moderate by meaning in life and optimism (Arslan & Yıldırım, 2021). Fear of, and concern about COVID-19 have been reported in Iranian medical students (see Dadfar et al., 2021, Dadfar & Lester, 2021), and have been found to be moderately correlated (Dadfar et al., 2021). Because significant COVID-19 fears and concerns are likely to be associated with depressive and obsessive symptoms.

Previous studies have reported that fear of COVID-19 positively correlated with scores on the Hospital Anxiety and Depression Scale (HADS; Barrios et al., 2020; Mailliez et al., 2020); the Perceived Vulnerability to Disease Scale (PVDS; Ahorsu et al., 2020; Masuyama et

al., 2020; Winter et al., 2020); the Depression and Anxiety Stress Scale (DASS-21; Bitan et al., 2020; Satici, 2020); the Severity Measure for Specific Phobia–Adult (SMSP-A; Soraci et al., 2020); the Patient Health Questionnaire-9 (PHQ-9; Huarcaya-Victoria et al., 2020; Sakib et al., 2020; Tsipropoulou et al., 2020) and Patient Health Questionnaire for Adolescents (PHQ-A; Masuyama, 2020); the Satisfaction with Life Scale (SWLS; Satici et al., 2020); the Preventive Behavior Related to COVID-19 Scale (Mahmood et al., 2020); the Generalized Anxiety Disorder (GAD) Questionnaire (Mahmood et al., 2020) and Generalized Anxiety Disorder-7 Scale (GAD-7; Huarcaya-Victoria et al., 2020; Masuyama, 2020; Perz et al., 2020; Tsipropoulou et al., 2020); the Impact of Event Scale–Revised (IES-R; Huarcaya-Victoria et al., 2020); the Spielberger’s State-Trait Anxiety Inventory (STAI; Mailliez et al., 2020; Martínez-Lorca et al., 2020); and the Fear Questionnaire for specific phobia (FQ; Barrios et al., 2020).

In the present study, female students had significantly higher COVID depression scores than males, but not for COVID anxiety or obsession. This contrasts with the finding by Ahmed et al. (2020) that men and women did not differ in COVID depression. Dadfar et al. (2021) found that female Iranian medical students scored higher than males on fear of COVID-19, and several other studies found a similar gender difference on fear of COVID-19 (e.g., Barbosa-Camacho et al., 2020; Broche-Pérez et al., 2020; Doshi et al., 2020; Elsharkawy & Abdelaziz, 2020; Gritsenko et al., 2020; Haktanir et al., 2020; Hossain et al., 2020; Huang et al., 2020; Huarcaya-Victoria et al., 2020; Konstantinov et al., 2020; Limcaoco et al., 2020; Qiu et al., 2020; Nguyen et al., 2020b; Oducado et al., 2021a; Rodríguez-Hidalgo et al., 2020; Sakib et al., 2020; Tsipropoulou et al., 2020; Tzur et al., 2020). However, Dadfar and Lester (2021) found no sex difference in levels of concern over the pandemic in Iranian university students,

and Perz et al. (2020) reported no sex differences in fear of COVID-19 in an American college sample.

Considering the severity of the COVID-19 pandemic worldwide, more understanding is needed about its harmful impacts on the mental health of university students and how to manage them. This study provided information that could be used by healthcare professionals, educators, and policymakers to identify those university students with a high risk of mental health problems during this and future pandemics and other similar crises.

LIMITATIONS

First, this study was conducted solely with university students in Iran, and so the results may not generalize to other populations. Second, the use of university students introduces an age range restriction. Third, the COVID-19DS did not explore discrimination by other countries due to COVID-19. Fourth, the COVID-19DS may have a lower confidence on medical services during the pandemic. As the pandemic continues, more studies will become available, and this will permit meta-analytic reviews and firmer conclusions. Future research should explore the correlates of the mental health problems caused by COVID-19 to identify the risk factors and the protective factors.

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REFERENCES

- Abu-El-Noor, N. I. (2021). Psychological impact of the COVID-19 pandemic on Palestinian nursing students: A cross-sectional study. *Mathews Journal of Psychiatry & Mental Health*, 6(2), 1–8. <https://doi.org/10.30654/MJPMH.10032>
- Acharya, L., Jin, L., & Collins, W. (2018). College life is stressful today – emerging stressors and depressive symptoms in college students. *Journal of American College Health*, 66(7), 655–664. <https://doi.org/10.1080/07448481.2018.1451869>
- Adibi, A., Jamshidbeigi, H., Jamshidbeigi, T., Mozafari, A., & Sahebi, A. (2020). Anxiety and obsession following the COVID-19 outbreak. *Iranian Journal of Psychiatry and Behavioral Sciences*, 14(2), e105919. <https://doi.org/10.5812/ijpbs.105919>
- Ahmed, M. Z., Ahmed, O., Aibao, Z., Hanbin, S., Siyu, L., & Ahmad, A. (2020). Epidemic of COVID-19 in China and associated psychological problems. *Asian Journal of Psychiatry*, 51, 102092. <https://doi.org/10.1016/j.ajp.2020.102092>
- Ahorsu, D. K., Lin, C.-Y., Imani, V., Saffari, M., Griffiths, M. D. & Pakpour, A. H. (2020). The Fear of COVID-19 Scale: Development and initial validation. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00270-8>
- Almomani, E. Y., Qablan, A. M., Almomany, A. M., & Atrooz, F. Y. (2021). The coping strategies followed by university students to mitigate the COVID-19 quarantine psychological impact. *Current Psychology*, 1–10. <http://doi.org/10.1007/s12144-021-01833-1>
- Amiri, M., Dowran, B., Salimi, H., Zarghami, M. H., & Gholami Fesharaki, M. (2019). The relationships between student stressors with psychological problems in students in a military Medical Sciences University in Tehran. *Journal of Military Medicine*, 21(4), 380–389.
- Amirpour, L., Dadfar, M., Heydari Charvadeh, M., & Birashk, B. (2018). Reliability, validity, and factorial structure the Farsi version of the Paranoia Checklist with Iranian students. *SAGE Open*, 8(4), 1–7. <https://doi.org/10.1177/2158244018817129>
- Arpaci, I., Karataş, K., & Baloğlu, M. (2020). The development and initial tests for the psychometric properties of the COVID-19 Phobia Scale (C19P-S). *Personality and Individual Differences*, 164, 110108. <https://doi.org/10.1016/j.paid.2020.110108>
- Arslan, G. & Yıldırım, M. (2021). Coronavirus stress, meaningful living, optimism, and depressive symptoms: A study of moderated mediation model. *Australian Journal of Psychology*, 73(2), 113–124. <https://doi.org/10.1080/00049530.2021.1882273>
- Arslan, G., Yıldırım, M., & Aytaç, M. (2020). Subjective vitality and loneliness explain how coronavirus anxiety increases rumination among college students. *Death Studies*, 1–10. <https://doi.org/10.1080/07481187.2020.1824204>
- Ashraf, F., Lee, S. A., & Crunk, A. E. (2020). Factorial validity of the Urdu version of the Obsession with COVID-19 Scale: Preliminary investigation using university sample in Pakistan. *Death Studies*. <https://doi.org/10.1080/07481187.2020.1779436>
- Asmundson, G. J. G., & Taylor, S. (2020). Coronaphobia: Fear and the 2019-nCoV outbreak. *Journal of Anxiety Disorders*, 70, 102196. <https://doi.org/10.1016/j.janxdis.2020.102196>
- Atef Vahid, M. K., Dadfar, M., Abdel-Khalek, A. M., & Lester, D. (2016). Psychometric properties of Persian version of the Love of Life Scale. *Psychological Reports*, 119(2), 505–515.
- Atef Vahid, M. K., Dadfar, M., Kessler, R. C., Bahrami, F., & Lester, D. (2015). Validation of Farsi version of the Kessler Psychological Distress Scale (K10) in college students. *European Journal of Social Sciences*, 49(1), 115–124.
- August, R., & Dapkwicz, A. (2020). Benefit finding in the COVID-19 pandemic: College students' positive coping strategies. *Journal of Positive School Psychology*, 1–4. <https://www.journalppw.com/index.php/JPPW/article/view/245>

- Barbosa-Camacho, F. J., García-Reyna, B., Cervantes-Cardona, G. A., Cervantes-Pérez, E., Chavarria-Avila, E. et al. (2020). Comparison of fear of COVID-19 in medical and nonmedical personnel in a public hospital in Mexico. *Research Square*. <https://doi.org/10.21203/rs.3.rs-37662/v1>
- Barrios, I., Ríos-González, C., O'Higgins, M., González, I., García, O., Díaz, N. R., Castaldelli-Maia, J. M., & Ventriglio, A. (2020). Psychometric properties of the Spanish version of the Fear of COVID-19 Scale (FCV-19S). *Research Square*. <https://doi.org/10.21203/rs.3.rs-33345/v1>
- Bitan, D. T., Grossman-Giron, A., Bloch, Y., Mayer, Y., Shiffman, N., & Mendlovic, S. (2020). Fear of COVID-19 scale: Psychometric characteristics, reliability and validity in the Israeli population. *Psychiatry Research*, 289, 113100. <https://doi.org/10.1016/j.psychres.2020.113100>
- Brailovskaia, J., & Margraf, J. (2020). Predicting adaptive and maladaptive responses to the Coronavirus (COVID-19) outbreak: A prospective longitudinal study. *International Journal of Clinical and Health Psychology*, 20(3), 183–191. <https://doi.org/10.1016/j.ijchp.2020.06.002>
- Broche-Pérez, Y., Fernández-Fleites, Z., Jiménez-Puig, E., Fernández-Castillo, E. & Rodríguez-Martin, B.C. (2020). Gender and fear of COVID-19 in a Cuban population sample. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00343-8>
- 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: Rapid review of the evidence. *Lancet (London, England)*, 395, 912–920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Bueno-Notivol, J., Gracia-García, P., Olaya, B., Lasheras, I., López-Antón, R., & Santabárbara, J. (2021). Prevalence of depression during the COVID-19 outbreak: A meta-analysis of community-based studies. *International Journal of Clinical and Health Psychology*, 21(1), 100196. <https://doi.org/10.1016/j.ijchp.2020.07.007>
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, 112934. <https://doi.org/10.1016/j.psychres.2020.112934>
- Caycho-Rodríguez, T., Barboza-Palomino, M., Ventura-León, J., Carbajal-León, C., Noé-Grijalva, M., Gallegos, M., Reyes-Bossio, M., & Vivanco-Vidal, A. (2020). Traducción al español y validación de una medida breve de ansiedad por la COVID-19 en estudiantes de ciencias de la salud [Spanish translation and validation of a brief measure of anxiety by the COVID-19 in students of health sciences]. *Ansiedad y Estrés*, 26(2020), 174–180.
- Chang, K.-C., Hou, W. L., Pakpour, A. H., Lin, C.-Y. & Griffiths, M. D. (2020). Psychometric testing of three COVID-19-related scales among people with mental illness. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00361-6>
- Cochran, W. G. (1963). *Sampling Techniques*, 2nd ed. New York: Wiley.
- Dadfar, M. & Nasr Esfahani, M. (2020). *Coping with distress and loss resulting from the COVID-19 pandemic: Proposed strategies for promoting mental health in Iran*. Unpublished paper.
- Dadfar, M., & Lester, D. (2021). Measuring concern over coronavirus in an Iranian non-clinical sample using the Coronavirus Disease Concern Scale (COVID-19CS). *Research Square*. Preprint posted online on January 08, 2021. <https://doi.org/10.21203/rs.3.rs-141240/v1>
- Dadfar, M., & Lester, D. *The COVID-19 Depression Scale (COVID-19DS)*. Unpublished paper.
- Dadfar, M., & Sanadgol, S. (2021). Self-efficacy on the Coronavirus Disease-2019 (COVID-19). *Research Square*. <https://doi.org/10.21203/rs.3.rs-143799/v1>. Available in Europe PMC <https://europepmc.org/article/PPR/PPR266068>
- Dadfar, M., Lester, D., & Turan, Y. (in press). *The development and validation of the COVID-19 Depression Scale (COVID-19DS): Association with the Perceived Health-related Components Scale. Mental Health, Religion & Culture*. <http://doi.org/10.1080/13674676.2021.1978958>
- Dadfar, M., Lester, D., Atef Vahid, M. K., & Abdel-Khalek, A. M. (2017). Psychometric properties of Farsi version of the Wish to be Dead Scale. *Omega: Journal of Death and Dying*, 76(1), 78–88.

- Dadfar, M., Lester, D., Hosseini, A. F., & Islami, M. (2021). The Patient Health Questionnaire-9 (PHQ-9) as a brief screening tool for depression: a study of Iranian college students. *Mental Health, Religion & Culture*, 24(8), 850-861. <https://doi.org/10.1080/13674676.2021.1956884>
- Dadfar, M., Lester, D., Momeni Safarabad, N., & Roshanpajouh, M. (2018). The Kessler Psychological Distress Scale (K6) as a screening instrument: A study of Iranian university students. *Annals of Depression and Anxiety*, 5(2), 1097.
- Dadfar, M., Mohagegh, F., Sanadgol, S., & Eslami, M. (2021). The Fear of COVID-19 Scale (FCV-19S): A study of Iranian students. *Mankind Quarterly*, 61(3), 707-722. <https://doi.org/10.46469/mq.2021.61.3.19>
- Dadfar, M., Salabifard, S., Dadfar, T., Roudbari, M., & Momeni Safarabad, N. (2019). Validation of the Patient Health Questionnaire-2 with Iranian students. *Mental Health, Religion & Culture*, 22(10), 1048-1056. <https://doi.org/10.1080/13674676.2019.1699042>
- Dehdari, T., Yarahmadi, R., Taghdisi, M. H., Daneshvar, R., & Ahmadpour, J. (2013). The relationship between having meaning in life with stress, anxiety and depression in students of Iran University of Medical Sciences in 2013. *Journal of Health Education and Health Promotion*, 1(3), 83-92. <https://journal.ihepsa.ir/article-1-94-en.html>
- Doshi, D., Karunakar, P., Sukhabogi, J. R., Prasanna, J. S. & Mahajan, S. V. (2020). Assessing coronavirus fear in Indian population using the Fear of COVID-19 Scale. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00332-x>
- Elsharkawy, N. B. & Abdelaziz, E. M. (2020). Levels of fear and uncertainty regarding the spread of coronavirus disease (COVID-19) among university students. *Perspectives in Psychiatric Care*. <https://doi.org/10.1111/ppc.12698>
- Fitzpatrick, K. M., Harris, C., & Drawve, G. (2020). Fear of COVID-19 and the mental health consequences in America. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(1), 17-21. <https://doi.org/10.1037/tra0000924>
- Galea, S., Merchant, R. M. & Lurie, N. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine*, 10.1001/jamainternmed.2020.1562
- Gashi, F. (2020). Koronavirüse Yakalanmış Kişilerde Tedavi Döneminde Dini Başa Çıkmanın Etkisi [The effect of religious coping during the treatment period of people who are caught coronavirus]. *Pamukkale Üniversitesi İlahiyat Fakültesi Dergisi [Pamukkale University Journal of Divinity Faculty]*, 7(1), 89-112.
- Geldsetzer, P. (2020). Knowledge and perceptions of COVID-19 among the general public in the United States and the United Kingdom: A cross-sectional online survey. *Annals of Internal Medicine*. <https://doi.org/10.7326/M20-0912>
- Goyal, K., Chauhan, P., Chhikara, K., Gupta, P. & Singh, M. P. (2020). Fear of COVID 2019: First suicidal case in India! *Asian Journal of Psychiatry*, 49, 101989. <https://doi.org/10.1016/j.ajp.2020.101989>
- Gritsenko, V., Skugarevsky, O., Konstantinov, V., Khamenka, N., Marinova, T., Reznik, A. & Isralowitz, R. (2020). COVID 19 fear, stress, anxiety, and substance use among Russian and Belarusian university students. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00330-z>
- Grøtan, K., Sund, E. R., & Bjerkeset, O. (2019). Mental health, academic self-efficacy and study progress among college students – The SHoT Study, Norway. *Frontiers in Psychology*, 10, 45. <https://doi.org/10.3389/fpsyg.2019.00045>
- Guizzo, A. O., Fogel, A., Escoffier, N. & Ho, R. (2021). Effects of COVID-19-related stay-at-home order on neuropsychophysiological response to urban spaces: Beneficial role of exposure to nature? *Journal of Environmental Psychology*, 75. <https://doi.org/10.1016/j.jenvp.2021.101590>
- Haktanir, A., Seki, T. & Dilmac, B. (2020). Adaptation and evaluation of Turkish version of the fear of COVID-19 scale. *Death Studies*. <https://doi.org/10.1080/07481187.2020.1773026>

- Hilton, D. (2021). Art therapy and the Coronavirus (COVID-19) pandemic - public mental health and emotional well-being. *Mathews Journal of Psychiatry & Mental Health*, 6(1), 30. <https://doi.org/10.30654/MJPMH.10030>
- Hayes, A. F. (2018a). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Second edition. New York: The Guilford Press.
- Hayes, A. F. (2018b). The Serial Multiple Mediator Model. Part II. Mediation analysis (5.4. More than on mediator), In *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Second edition. (pp. 167–180). New York: The Guilford Press.
- Ho, C. S., Chee, C. Y., & Ho, R. C. (2020). Mental health strategies to combat the psychological impact of coronavirus disease 2019 (COVID-19) beyond paranoia and panic. *Annals, Academy of Medicine, Singapore*, 49(3), 155–160. PMID: 32200399.
- Hossain, M. A., Jahid, M. I. K., Hossain, K. M. A., Walton, L. M., Uddin, Z. et al. (2020). Knowledge, attitudes, and fear of COVID-19 during the rapid rise period in Bangladesh. *PLoS One*, 15(9), e0239646. <https://doi.org/10.1371/journal.pone.0239646>
- Huang, L., Lei, W., Xu, F., Liu, H. & Yu, L. (2020). Emotional responses and coping strategies in nurses and nursing students during Covid-19 outbreak: A comparative study. *PLoS One*, 15(8), e0237303. <https://doi.org/10.1371/journal.pone.0237303>
- Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. *Psychiatry Research*, 288, 112954. <http://doi.org/10.1016/j.psychres.2020.112954>
- Huarcaya-Victoria, J., Villarreal-Zegarra, D., Podestà, A. & Luna-Cuadros, M. A. (2020). Psychometric properties of a Spanish version of the Fear of COVID-19 Scale in general population in Lima, Peru. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00354-5>
- Islam, M. S, Ferdous, M. Z., Islam, U.S., Mosaddek. A. S. M., Potenza, M. N., & Pardhan, S. (2021). Treatment, persistent symptoms, and depression in people infected with COVID-19 in Bangladesh. *International Journal of Environmental Research and Public Health*, 18(4), 1453. <https://doi.org/10.3390/ijerph18041453>
- Jahanshahi, A. A., Dinani, M. M., Madavani, A. N., Li, J. & Zhang, S.X. (2020). The distress of Iranian adults during the Covid-19 pandemic – more distressed than the Chinese and with different predictors. *Brain, Behavior, and Immunity*, 87, 124-125. <https://doi.org/10.1016/j.bbi.2020.04.081>
- Jiang, R. (2020). Data for: Knowledge, attitudes and mental health of college students during the COVID-19 quarantine in China. *Mendeley Data*, V1, <https://dx.doi.org/10.17632/vfd44g4nvn.1>
- Kaplan, H., Sevinç, K., & İşbilen, N. (2020). Doğal Afetleri Anlamlandırma ve Başa Çıkma: Covid-19 Salgını Üzerine Bir Araştırma [Making sense of natural disasters and coping: A study on COVID-19 outbreak in Turkey]. *Journal of Turkish Studies*, 15(4), 579–598.
- Kazmi, S. S. H., Kashif, H., Talib, S., & Saxena, S. (2020). COVID-19 and lockdown: A study on the impact on mental health. *SSRN Electronic Journal*. <https://dx.doi.org/10.2139/ssrn.3577515>
- Khademian, F., Delavari, S., Koohjani, Z. & Khademian, Z. (2021). An investigation of depression, anxiety, and stress and its relating factors during COVID-19 pandemic in Iran. *BMC Public Health*, 21(1), 275. <https://doi.org/10.1186/s12889-021-10329-3>
- Khan, A. H., Sultana, S., Hossain, S., Hasan, M. T., Ahmed, H. U., & Sikder, T. (2020). The impact of COVID-19 pandemic on mental health & wellbeing among home-quarantined Bangladeshi students: A cross-sectional pilot study. *Journal of Affective Disorders*, 277, 121–128. <https://doi.org/10.1016/j.jad.2020.07.135>
- Konstantinov, V., Berdenova, S., Satkangulova, G., Reznik, A. & Isralowitz, R. (2020). COVID-19 impact on Kazakhstan university student fear, mental health, and substance use. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00412-y>

- Korkmaz, N. H., Öztürk, İ. E., Rodoslu, C. & Uğur, S. (2020). Ortaokul Öğrencilerinin COVID-19 Salgını Sürecinde Fiziksel Aktivite Düzeylerindeki Değişikliklerin İncelenmesi (Bursa İli Örneği) [Investigation of changes in physical activity levels of secondary school students during the COVID-19 outbreak process (Bursa case example)]. *Atatürk Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi*, 22(4), 101–115.
- Lauckner, C., Hill, M., & Ingram, L. A. (2020). An exploratory study of the relationship between social technology use and depression among college students. *Journal of College Student Psychotherapy*, 34(1), 33–39. <https://doi.org/10.1080/87568225.2018.1508396>
- Le, H. T., Lai, A., Sun, J., Hoang, M. T., Vu, L. G., Pham, H. Q., ... Ho, C. (2020b). Anxiety and depression among people under the nationwide partial lockdown in Vietnam. *Frontiers in Public Health*, 8, 589359. <https://doi.org/10.3389/fpubh.2020.589359>
- Le, X., Dang, A. K., Toweh, J., Nguyen, Q. N., Le, H. T., Do, T., ... Ho, R. (2020a). Evaluating the psychological impacts related to COVID-19 of Vietnamese people under the first nationwide partial lockdown in Vietnam. *Frontiers in Psychiatry*, 11, 824. <https://doi.org/10.3389/fpsy.2020.00824>
- Lee, S. A. (2020a). Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. *Death Studies*, 44(7), 393–401. <https://doi.org/10.1080/07481187.2020.1748481>
- Lee, S. A. (2020b). How much “thinking” about COVID-19 is clinically dysfunctional? *Brain, Behavior, and Immunity*. <https://doi.org/10.1016/j.bbi.2020.04.06>
- Lee, S. A., Mathis, A. A., Jobe, M. C., & Pappalardo, E. A. (2020). Clinically significant fear and anxiety of COVID-19: A psychometric examination of the Coronavirus Anxiety Scale. *Psychiatry Research*, 290, 113112. <https://doi.org/10.1016/j.psychres.2020.113112>
- Limcaoco, R. S. G., Mateos, E. M., Fernandez, J. M. & Roncero, C. (2020). Anxiety, worry and perceived stress in the world due to the COVID-19 pandemic, March 2020. Preliminary results. *medRxiv*. <https://doi.org/10.1101/2020.04.03.20043992>
- Lin, C.-Y. (2020). Social reaction toward the 2019 novel coronavirus (COVID-19). *Social Health and Behavior*, 3(1), 1–2. https://doi.org/10.4103/SHB.SHB_11_20
- Lin, C.-Y., Zhang, E., Wong, G. T. F., Hyun, S. & Hahm, H. C. (2020). Factors associated with depression, anxiety, and PTSD symptomatology during the COVID-19 pandemic: Clinical implications for U.S. young adult mental health. *Psychiatry Research*, 290, 113172. <https://doi.org/10.1016/j.psychres.2020.113172>
- Lorreta, G. Y., Marango, T., & Chitongo, L. (2020). The impact of social distancing as a response to COVID19 among foreign students in Wuhan, China. *Mankind Quarterly*, 61(2), 190–206. <https://doi.org/10.46469/mq.2020.61.2.3>
- Mahmood, Q. K., Jafree, S. R., & Qureshi, W.A. (2020). The psychometric validation of FCV19S in Urdu and socio-demographic association with fear in the people of the Khyber Pakhtunkhwa (KPK) Province in Pakistan. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00371-4>
- Mailliez, M., Griffiths, M. D. & Carre, A. (2020). Validation of the French version of the Fear of COVID-19 Scale and its associations with depression, anxiety and differential emotions. *Research Square*. <https://doi.org/10.21203/rs.3.rs-46616/v1>
- Mamun, M. A. & Griffiths, M.D. (2020). First COVID-19 suicide case in Bangladesh due to fear of COVID-19 and xenophobia: Possible suicide prevention strategies. *Asian Journal of Psychiatry*, 51, 102073. <https://doi.org/10.1016/j.ajp.2020.102073>
- Marelli, S., Castelnovo, A., Somma, A., Castronovo, V., Mombelli, S., Bottoni, D., Leitner, C., Fossati, A., & Ferini-Strambi L. (2021). Impact of COVID-19 lockdown on sleep quality in university students and administration staff. *Journal of Neurology*, 268(1), 8–15. <https://doi.org/10.1007/s00415-020-10056-6>
- Martínez-Lorca, M., Martínez-Lorca, A., Criado-Alvarez, J. J., Armesilla, M. D. C. & Latorre, J. M. (2020). The fear of COVID-19 scale: Validation in Spanish university students. *Psychiatry Research*, 293, 113350. <https://doi.org/10.1016/j.psychres.2020.113350>

- Masuyama, A., Shinkawa, H. & Kubo, T. (2020). Validation and psychometric properties of the Japanese version of the Fear of COVID-19 Scale among adolescents. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00368-z>
- Mazza, C., Ricci, E., Biondi, S., Colasanti, M., Ferracuti, S., Napoli, C., & Roma, P. (2020). A nationwide survey of psychological distress among Italian people during the COVID-19 pandemic: Immediate psychological responses and associated factors. *International Journal of Environmental Research and Public Health*, 17(9), 3165. <https://doi.org/10.3390/ijerph17093165>
- Mertens, G., Gerritsen, L., Duijndam, S., Salemink, E. & Engelhard, I. M. (2020). Fear of the coronavirus (COVID-19): Predictors in an online study conducted in March 2020. *Journal of Anxiety Disorders*, 74, 102258. <https://doi.org/10.1016/j.janxdis.2020.102258>
- Moghanibashi-Mansourieh, A. (2020). Assessing the anxiety level of Iranian general population during COVID-19 outbreak. *Asian Journal of Psychiatry*. <https://doi.org/10.1016/j.ajp.2020.102076>
- Muyor-Rodríguez, J., Caravaca-Sánchez, F., & Fernández-Prados, J. S. (2021). COVID-19 fear, resilience, social support, anxiety, and suicide among college students in Spain. *International Journal of Environmental Research and Public Health*, 18, 8156. <https://doi.org/10.3390/ijerph18158156>
- Nazari, N., Zekiy, A. O., Feng, L. S., & Griffiths, M. D. (2021). Psychometric validation of the Persian version of the COVID-19-Related Psychological Distress Scale and association with COVID-19 fear, COVID-19 anxiety, optimism, and lack of resilience. *International Journal of Mental Health and Addiction*, 1–16. Advance online publication. <https://doi.org/10.1007/s11469-021-00540-z>
- Nguyen, H. C., Nguyen, M. H., Do, B. N., Tran, C. Q., Nguyen, T. T. P., Pam, K. M., ... Duong T. V. (2020a). People with suspected COVID-19 symptoms were more likely depressed and had lower health-related quality of life: The potential benefit of health literacy. *Journal of Clinical Medicine*, 9(4), 965. <https://doi.org/10.3390/jcm9040965>
- Nguyen, H. T., Do, B. N., Pham, K. M., Kim, G. B., Dam, H. T. B., Nguyen, T. T., ... Duong, T. V. (2020b). Fear of COVID-19 scale-associations of its scores with health literacy and health-related behaviors among medical students. *International Journal of Environmental Research and Public Health*, 17(11), 4164. <https://doi.org/10.3390/ijerph17114164>
- Nourizadeh, M., Rasaei, M. J. & Moin, M. (2020). COVID-19 pandemic: A big challenge in Iran and the world. *Iranian Journal of Allergy, Asthma and Immunology*, 19(S1), 1–2. [https://doi.org/10.18502/ijaai.v19i\(s1.r1\).2846](https://doi.org/10.18502/ijaai.v19i(s1.r1).2846)
- Odrizola-González, P., Planchuelo-Gómez, Á., Iruñia, M. J., & de Luis-García, R. (2020). Psychological effects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university. *Psychiatry Research*, 290. <https://doi.org/10.1016/j.psychres.2020.113108>
- Oducado, R. M. F., Tuppal, C. P., Estoque, H. V., Sadang, J. M., Superio, D. L. et al. (2021a). Internet use, eHealth literacy and fear of COVID-19 among nursing students in the Philippines. *Research Square*. <https://doi.org/10.31219/osf.io/amn63>
- Olszewska-Guizzo, A., Fogel, A., Escoffier, N., & Ho, R. (2021). Effects of COVID-19-related stay-at-home order on neuropsychophysiological response to urban spaces: Beneficial role of exposure to nature? *Journal of Environmental Psychology*, 75. <https://doi.org/10.1016/j.jenvp.2021.101590>
- Özkul, Ç. (2020). Quality of life and related factors in university students during the coronavirus disease 2019 pandemic. *Journal of Exercise Therapy and Rehabilitation*, 7(3), 267–276.
- Pakpour, A. H., & Griffiths, M.D. (2020). The fear of COVID-19 and its role in preventive behaviors. *Journal of Concurrent Disorders*, 2(1), 58–63. Retrieved April 23, 2020, from <https://concurrentdisorders.ca/2020/04/03/the-fear-of-covid-19-and-its-role-in-preventive-behaviors/>

- Pakpour, A. H., Griffiths, M. D., Chang, K.-C., Chen, Y.-P., Kuo, Y.-J. & Lin, C.-Y. (2020). Assessing the fear of COVID-19 among different populations: A response to Ransing et al. (2020). *Brain, Behavior, and Immunity*, 89, 524–525. <https://doi.org/10.1016/j.bbi.2020.06.006>
- Pedrozo-Pupo, J. C., & Campo-Arias, A. (2020). Depression, perceived stress related to COVID, post-traumatic stress, and insomnia among asthma and COPD patients during the COVID-19 pandemic. *Chronic Respiratory Disease*, 17, 1–3. <http://doi.org/10.1177/1479973120962800>
- Perz, C. A., Lang, B. A. & Harrington, R. (2020). Validation of the Fear of COVID-19 Scale in a US college sample. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00356-3>
- Pokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher Education for the Future*, 8(1), 133–141. <https://doi.org/10.1177/2347631120983481>
- Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B. & Xu, Y. (2020). A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. *General Psychiatry*, 33, e100213. <https://doi.org/10.1136/gpsych-2020-100213>
- Rabani Bavojdan, M., Towhidi, A., & Rahmati, A. (2011). The relationship between mental health and general self-efficacy beliefs, coping strategies and locus of control in male drug abusers. *Addiction & Health*, 3(3-4), 111–118.
- Ransing, R., Adiukwu, F., Pereira-Sanchez, V., Ramalho, R., Orsolini, L. et al. (2020a). Mental health interventions during the COVID-19 pandemic: A conceptual framework by early career psychiatrists. *Asian Journal of Psychiatry*, 102085. <https://doi.org/10.1016/j.ajp.2020.102085>
- Ren, S. Y., Gao, R. D. & Chen, Y. L. (2020). Fear can be more harmful than the Severe Acute Respiratory Syndrome Coronavirus 2 in controlling the corona virus disease 2019 epidemic. *World Journal of Clinical Cases*, 8(4), 652–657. <https://doi.org/10.12998/wjcc.v8.i4.652>
- Ren, Z., Xin, Y., Ge, J., Zhao, Z., Liu, D., Ho, R. C. M., & Ho, C. S. H. (2021). Psychological impact of COVID-19 on college students after school reopening: A cross-sectional study based on machine learning. *Frontiers in Psychology*, 12, 641806. <https://doi.org/10.3389/fpsyg.2021.641806>
- Rodríguez-Hidalgo, A. J., Pantaleón, Y., Dios, I. & Falla, D. (2020). Fear of COVID-19, stress, and anxiety in university undergraduate students: A predictive model for depression. *Frontiers in Psychology*, 11, 3041. <https://doi.org/10.3389/fpsyg.2020.591797>
- Safa, F., Anjum, A., Hossain, S., Trisa, T. I., Alam, S. F., Abdur Rafi M., ... Hasan, M. T. (2020). Immediate psychological responses during the initial period of the COVID-19 pandemic among Bangladeshi medical students. *Children and Youth Services Review*. <https://doi.org/10.1016/j.childyouth.2020.105912>
- Sahu, P. (2020). Closure of universities due to Coronavirus Disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. *Cureus*, 12(4), e7541. <https://doi.org/10.7759/cureus.7541>
- Sakib, N., Mamun, M. A., Bhuiyan, A. I., Hossain, S., Al Mamun, F., Hosen, I., ... Mamun, M. A. (2020). Psychometric validation of the Bangla Fear of COVID-19 Scale: Confirmatory factor analysis and Rasch analysis. *International Journal of Mental Health and Addiction*, 1–12. <https://doi.org/10.1007/s11469-020-00289-x>
- Saravanan, C., Mahmoud, I., Elshami, W., & Taha, M. H. (2020). Knowledge, anxiety, fear, and psychological distress about COVID-19 among university students in the United Arab Emirates. *Frontiers in Psychology*, 11, 582189. <https://doi.org/10.3389/fpsyg.2020.582189>
- Satici, B., Gocet-Tekin, E., Deniz, M. E. & Satici, S. A. (2020). Adaptation of the Fear of COVID-19 Scale: Its association with psychological distress and life satisfaction in Turkey. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00294-0>
- Sever, M., & Özdemir, S. (2020). Koronavirüs (COVID-19) sürecinde öğrenci olma deneyimi: Bir fotoses (photovoice) çalışması [The experience of being a student during coronavirus (COVID-

- 19) pandemic: A photovoice study]. *Toplum ve Sosyal Hizmet*, 31(4), 1653–1679. <https://doi.org/10.33417/tsh.778615>
- Shamsaei, F., Yaghmaei, S., Sadeghian, E., Tapak, L. (2018). Survey of stress, anxiety and depression in undergraduate nursing students of Hamadan University of Medical Sciences. *Iranian Journal of Psychiatric Nursing*, 6(3), 26–31. <https://ijpn.ir/article-1-1096-fa.html>
- Shevlin, M., McBride, O., Murphy, J., Miller, J. G., Hartman, T. K., Levita, L., ... Bentall, R. P. (2020). Anxiety, depression, traumatic stress, and COVID-19 related anxiety in the UK general population during the COVID-19 pandemic. *PsyArXiv*, 6(6), e125, 1–9. <https://doi.org/10.1192/bjo.2020.109>
- Son, C., Hegde, S., Smith, A., Wang, X. & Sasangohar, F. (2020). Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research*, 22(9), e21279. <https://doi.org/10.2196/21279>
- Sønderskov, K. M., Dinesen, P. T., Santini, Z. I., & Østergaard, S.D. (2020). The depressive state of Denmark during the COVID-19 pandemic. *Acta Neuropsychiatrica*, 32(4), 226–228. <https://doi.org/10.1017/neu.2020.15>
- Soraci, P., Ferrari, A., Abbiati, F. A., DelFante, E., DePace, R., Urso, A. & Griffiths, M.D. (2020). Validation and psychometric evaluation of the Italian version of the Fear of COVID-19 Scale. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-020-00277-1>
- Sorokin, M. Y., Kasyanov, E. D., Rukavishnikov, G. V., Makarevich, O. V., Neznanov, N. G., Lutova, N. B. & Mazo, G. E. (2020). Structure of anxiety associated with the COVID-19 pandemic in the Russian-speaking sample: Results from on-line survey. *medRxiv*. <https://doi.org/10.1101/2020.04.28.20074302>
- Sun, L., Sun, Z., Wu, L., Zhu, Z., Zhang, F., Shang, Z. & Liu, N. (2020). Prevalence and risk factors of acute posttraumatic stress symptoms during the COVID-19 outbreak in Wuhan, China. *medRxiv*. <https://doi.org/10.1101/2020.03.06.20032425>
- Taghrir, M. H., Borazjani, R., & Shiraly, R. (2020). COVID-19 and Iranian medical students; A survey on their related-knowledge, preventive behaviors and risk perception. *Archives of Iranian Medicine*, 23(4), 249–254. <https://doi.org/10.34172/aim.2020.06>
- Tasnim, R., Sujan, M. S. H., Islam, M. S., Ritu, A. H., Siddique, M. A. B., Toma, T. Y., ... van Os, J. (2021). Prevalence and correlates of anxiety and depression in frontline healthcare workers treating people with COVID-19 in Bangladesh. *BMC Psychiatry*, 21(1), 271. <https://doi.org/10.1186/s12888-021-03243-w>
- Tee, M., Wang, C., Tee, C., Pan, R., Reyes, P. W., Wan, X., ... Ho, R. (2021). Impact of the COVID-19 pandemic on physical and mental health in lower and upper middle-income Asian countries: A comparison between the Philippines and China. *Frontiers in Psychiatry*, 11, 568929. <https://doi.org/10.3389/fpsy.2020.568929>
- Tran, B. X., Nguyen, H. T., Le, H. T., Latkin, C. A., Pham, H. Q., Vu, L. G., Le, X., Nguyen, T. T., Pham, Q. T., Ta, N., Nguyen, Q. T., Ho, C., & Ho, R. (2020). Impact of COVID-19 on Economic well-being and quality of life of the Vietnamese during the national social distancing. *Frontiers in Psychology*, 11, 565153. <https://doi.org/10.3389/fpsyg.2020.565153>
- Tsamakis, K., Tsiptsios, D., Ouranidis, A., Mueller, C., Schizas, D., Terniotis C., ... Rizos, E. (2021). COVID-19 and its consequences on mental health (Review). *Experimental and Therapeutic Medicine*, 21(3), 244, 1–7. <https://doi.org/10.3892/etm.2021.9675>
- Tsipropoulou, V., Nikopoulou, V. A., Holeva, V., Nasika, Z., Diakogiannis, I., Sakka, S., ... Parlapani, E. (2020). Psychometric properties of the Greek version of FCV-19S. *International Journal of Mental Health and Addiction*, 1, 1–10. <https://doi.org/10.1007/s11469-020-00319-8>
- Uçkaç, K. (2020). Sağlık Meslek Lisesi Öğrencilerinde COVID-19 Pandemi Sürecine Bağlı Uzaktan Eğitimin Öğrenci Duygu ve Davranışları Üzerindeki Etkileri [The effects of distance education related to COVID-19 pandemic process on students' emotions and behaviors in health vocational school students]. *Sağlık Bilimlerinde Eğitim Dergisi*, 3(1), 34–44.

- Wang, C., Chudzicka-Czupala, A., Grabowski, D., Pan, R., Adamus, K., Wan, X., ... Ho, C. (2020a). 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. *Frontiers in Psychiatry, 11*, 569981. <https://doi.org/10.3389/fpsyt.2020.569981>
- Wang, C., Chudzicka-Czupala, A., Tee, M. L., Núñez, M. I. L., Tripp, C., Fardin, M. A., ... Sears, S. F. (2021d). A chain mediation model on COVID-19 symptoms and mental health outcomes in Americans, Asians and Europeans. *Scientific Reports, 11*(1), 6481. <https://doi.org/10.1038/s41598-021-85943-7>
- Wang, C., Fardin, M.A., Shirazi, M., Pan, R., Wan, X., Tan, Y., ... Ho, R. (2021b). Mental health of the general population during the 2019 coronavirus disease (COVID-19) pandemic: A tale of two developing countries. *Psychiatry International, 2*(1), 71–84. <https://doi.org/10.3390/psychiatryint2010006>
- Wang, C., López-Núñez, M. I., Pan, R., Wan, X., Tan, Y., Xu, L., ... Aparicio García, M.E. (2021a). The impact of the COVID-19 pandemic on physical and mental health in China and Spain: Cross-sectional study. *JMIR Formative Research, 5*(5), e27818. <https://doi.org/10.2196/27818>
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020c). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health, 17*(5), 1729. <https://doi.org/10.3390/ijerph17051729>
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., McIntyre, R. S., ... Ho, C. (2020b). A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain, Behavior, & Immunity, 87*, 40–48. <https://doi.org/10.1016/j.bbi.2020.04.028>
- Wang, C., Tee, M. L., Roy, A. E., Fardin, M. A., Srichokchatchawan, W., Habib, H. A., ... Kuruchittham, V. (2021e). The impact of COVID-19 pandemic on physical and mental health of Asians: A study of seven middle-income countries in Asia. *PLoS One, 16*(2), e0246824. <https://doi.org/10.1371/journal.pone.0246824>
- Wang, Z., Yang, H-L., Yang, Y-Q., Liu, D., Li, Z-H., et al. (2020f). Prevalence of anxiety and depression symptom, and the demands for psychological knowledge and interventions in college students during COVID-19 epidemic: A large cross-sectional study. *Journal of Affective Disorders, 275*, 188–193.
- Winter, A.E. (2021). The impact of the World Military Games on the COVID-19 pandemic. *Irish Journal of Medical Science, 1–2*. Advance online publication. <https://doi.org/10.1007/s11845-020-02484-0>
- Winter, T., Riordan, B. C., Pakpour, A. H., Griffiths, M. D., Mason, A., Poulgrain, J. W. & Scarf, D. (2020). Evaluation of the English version of the Fear of COVID-19 Scale and its relationship with behavior change and political beliefs. *International Journal of Mental Health and Addiction. https://doi.org/10.1007/s11469-020-00342-9*
- World Health Organization (2020, March 11). *WHO Director-General's opening remarks at the media briefing on COVID-19*. Retrieved August 2, 2021, from <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- World University Rankings (2021). *How Covid-19 is changing research*. Available at <https://www.timeshighereducation.com › world-universi...>
- Worldometers (2021). December 17. <https://www.worldometers.info/coronavirus/>. Accessed: 17.12.2021.
- Yıldırım, M., & Güler, A. (2020). COVID-19 severity, self-efficacy, knowledge, preventive behaviors, and mental health in Turkey. *Death Studies, 16*, 1–8. <https://doi.org/10.1080/07481187.2020.1793434>
- Yıldırım, M., Arslan, G., & Alkahtani, A. M. (2021). Do fear of COVID-19 and religious coping predict depression, anxiety, and stress among the Arab population during health crisis? *Death Studies. https://doi.org/10.1080/07481187.2021.1882617*

- Zandifar, A. & Badrfam, R. (2020). Iranian mental health during the COVID-19 epidemic. *Asian Journal of Psychiatry*, 51, 101990. <https://doi.org/10.1016/j.ajp.2020.101990>
- Zhang, S. X., Liu, J., Jahanshahi, A. A., Nawaser, K., Yousefi, A., Li, J. & Sun, S. (2020). At the height of the storm: Healthcare staff's health conditions and job satisfaction and their associated predictors during the epidemic peak of COVID-19. *Brain, Behavior, and Immunity*, 87, 144–146. <https://doi.org/10.1016/j.bbi.2020.05>