

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

Kalpana Gyawali, PhD

Lecturer

Health Physical and Population Education Department

Sanothimi Campus, Bhaktapur (T.U.)

gpkalpana81@gmail.com

Abstract

The globally increasing trend of COVID -19 pandemic has got worldwide attention from several nations. Along with physical health, pandemic diseases have shown a tremendous negative impact on mental health in the general population throughout the world. To find out the impact of this pandemic on the mental health of students, a systematic review of different national and international literatures was carried out to complete this study. Elevated anxiety, depression, stress, and sleeping disorder were found as the major mental disorders among the students. Most of the results of reviewed studies were based on online survey. In Nepalese context studies on the impact of Covid -19 on mental health are very limited, hence the findings might be useful to explore the possible mental problems among the Nepalese students; and the result will be helpful to follow the necessary further steps to minimize the COVID-19 induced mental problems among the targeted group.

Keywords: Pandemic, COVID -19, mental health, student

Introduction

The 2019 Coronavirus disease (COVID-19) has gained intense attention globally, posing serious threats to people's lives. To date (June 7, 2021), over 173 million confirmed cases and 3.72 million deaths attributable to this disease have been reported (World Health Organization [WHO], 2021) globally. In Nepal, on 13 January, 2020 a 31-year-old Nepali student of Wuhan University, who had returned home on 5 January 2020, admitted with mild symptoms (Bastola and others, 2020) was the first case of COVID

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

-19; and after that, the spread of the virus was increased rapidly, and currently positive cases are above 2000 per day. The data on June 7, 2021 reported that the total number of confirmed cases of the disease has reached up to 591494 and with 7990 cases of death (Ministry of Health and Population [MOHP], 2021). To manage the disease spread among the community, different countries have adopted the process like the shutdown of schools and colleges, home confinement of students, limited mobility, postponed student examinations, shutdown of the recreational and amusement centres, etc. During the pandemic disease spreading situation, unpredictability, uncertainty, seriousness of the disease, misinformation, and social isolation have been found associated with physical and psychological distress and symptom of mental illness (Yang and others, 2020).

The impact of COVID- 19 might be noticed in all cultures, geography, age, sex, and occupation. Among them, students may constitute a particularly vulnerable population for mental health problems in the light of challenges commonly associated with transitions to adulthood and the frequent economic and material difficulties of this population [Auerbach and others, 2020 as cited by Husky and others, 2020). As a new disease, the empirical studies on the impact of COVID- 19 on the mental health of the students are very limited. In the Nepalese context, empirical studies on the impact of the mental health of Nepalese students are rare. Hence, this study is intended to summarize the results of other national and international studies related to the effect of COVID -19 on the general population with a focus on student's mental health situation globally and in the Nepalese context. The result of the study might be useful to identify the possible mental disorders and the result might be useful to develop an appropriate strategy to reduce the mental disorders on the students which arise due to the COVID-19.

Methods

The current article is a narrative review of the existing literature on mental health effects due to the COVID-19 pandemic among school and university students. A search of the Elsevier database, science direct, lanset phychiartry, and google scholars and other online resource materials were undertaken using the search terms "COVID-19", "mental health", "anxiety", "stress", "depression", "students", in various combinations. Three broad themes were identified across and were used to organize the review, which are: (i) Attempt to focus on the general mental health implication during widespread pandemic, (ii) Impact of COVID-19 on the general population,

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

and (iii) Impact of COVID-19 on student's mental health. The review is based on the studies based on the primary data collected collected by different scholars and institutes.

Results and Discussion

The important points derived from the review of literature on the effects of COVID-19 pandemic are summarized hereafter under the relevant themes.

General mental health implications during the spread of pandemic

Large-scale disasters, whether traumatic, natural, or environmental, are almost always accompanied by increase in depression, post-traumatic stress disorder (PTSD), substance use disorder, a broad range of other mental and behavioral disorders, domestic violence, and even child abuse (Galea and others, 2020). About 10% of New Yorkers showed the signs of major depressive disorder in the month following the 9/11 attacks, in addition to 25% who reported increased alcohol use (Amal, 2020). A higher level of stress was reported after the devastating earthquake in Nepal in 2015 (Baral and KC, 2019). Like the other adverse situations, during the outbreak of the epidemic and pandemic diseases like SARS in 2003 and Ebola in 2014, several psychiatric disorders like anxiety, depression, and post-traumatic stress disorder were found particularly in survivors and healthcare workers (Bortel and others, 2016; Mak and others, 2010). Currently, COVID-19 has spread throughout the world and a larger population in the world has been affected. The practice of physical/social distancing and lockdown associated with COVID-19 has led to alternation in behavioral pattern and discontinuation of routine functioning with possible long term effects for mental health and psychological well-being; and home confinement through self-isolation and quarantine have affected persons to be suffered from temporally undetermined stress. It has increased anxiety and depression while disrupting sleep, with the consequences upon emotional functioning as other past natural and traumatic incidence and disease pandemic (Altena and others, 2020; Majumdar and others, 2020).

The possible impact of the COVID-19 pandemic on different types of mental disorder symptoms in the victim has been reported by several scholars. According to Shanafelt and others, (2020), different sorts of anxiety symptoms like cognitive symptoms, emotional symptom, somatic symptoms, autonomic symptoms, and behavioral symptoms have been seen in COVID-19 pandemic situation; and higher fear and insecurity has been

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

found in the victim. Similarly, Montemurro (2020) and Gunnell and others (2020) have reported that the COVID-19 outbreak may generate emotional distress and anxiety and other psychological distress that may lead to self-killing and intensification in the suicide rates. The fear of passing on the disease to their loved one, fear of dying alone and staying away from family are all contributing factors, misinformation about the disease is the other possible cause behind the mental disorder in the general population. At large, all of the studies that have examined the psychological disorders during the COVID-19 pandemic, and have reported that the affected individuals show several symptoms of mental trauma, such as emotional distress, depression, stress, mood swings, irritability, insomnia, attention deficit hyperactivity disorder, post-traumatic stress, and anger (Brook and others, 2020; Wang and others, 2020). Thus, these studies have well explained the poor mental health among people due to Covid -19 pandemic disease outbreak.

Impacts on general population

The prevalence of different types of mental disorders has been reported in the population living at different geographical regions, races, ages, and income groups. Zandifar and Badrfam (2020) highlighted the role of unpredictability, uncertainty, seriousness of disease, misinformation, and social isolation contributing to stress and mental morbidity in Iran. According to Brooks and others (2020), individuals being in the quarantine may experience psychological distress in the form of anxiety, anger, confusion, and post-traumatic stress symptoms. Similarly, Wang and others (2020) have reported 16.5% moderate to severe depressive symptoms with 28.8% moderate to severe anxiety symptom and 8.1% moderate to severe stress on the general population in China (n= 1210); and female gender, student status were associated with a greater psychological impact of the outbreak and higher levels of stress, anxiety, and depression. Likewise, Huang and Zhao (2020) have reported the cases of higher sleeping disorder among 18.2% (n=7236) respondents in China; and health care professionals were found more likely to have poor sleep quality in comparison to other occupational groups.

In Israel, at least one type of psychiatric symptom related to COVID- 19 has been reported in 793 among 976 participants (Lahav, 2020). Lahav found that younger children, females, people having a below-average income, being diagnosed with the disease, living alone during the outbreak, having high-risk health problems, and those negatively self-rating one's health status

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

were associated with elevated distress. In another systematic and meta-analysis survey among 33062 participants, carried out by Pappa and others (2020), the prevalence of anxiety was estimated to be 23.2% while that of depression was 22.8% among the studied group and female health care professionals and nurses, who were seen with higher rates of affective symptoms compared to males and medical staffs respectively. Regarding the prevalence of insomnia, it was estimated to be 38.9% among them. From these above studies, the prevalence of different types of mental disorders was found higher in females, students, and low-income groups.

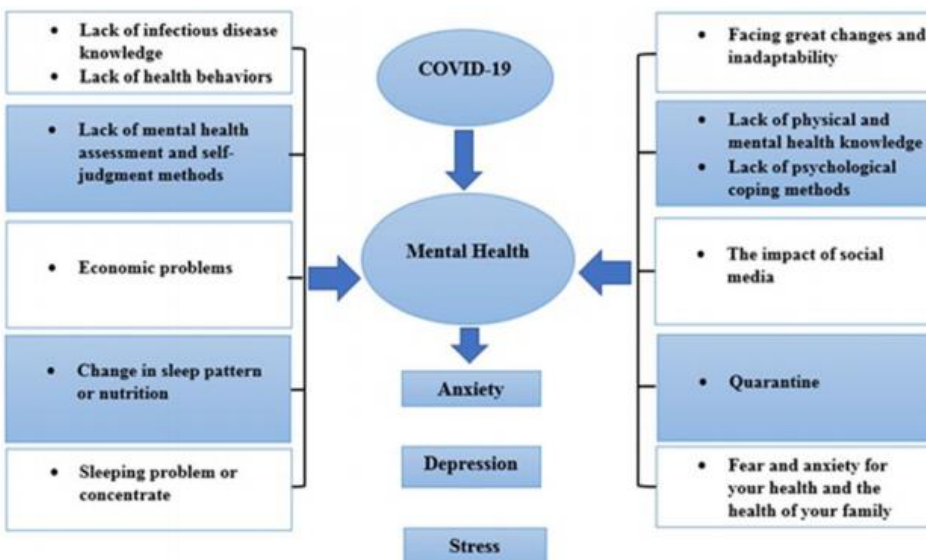


FIGURE 1: IMPACT OF COVID-19 PANDEMIC ON MENTAL HEALTH (SOURCE: SALARI AND OTHERS, 2020)

An online cross-sectional study undertaken by Gao and others (2020) among 4872 Chinese citizens aged 18 years, from Jan 31 to Feb 2, 2020 reported that the prevalence of depression, anxiety, and combination of depression and anxiety (CDA) was 48.3% (95%CI: 46.9%-49.7%), 22.6% (95%CI: 21.4%-23.8%) and 19.4% (95%CI: 18.3%-20.6%). It also showed the severity of mental disorder due to COVID-19 among the general population. In another study in China, Huang and Zhao (2020) have reported that the

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

overall prevalence of generalized anxiety disorder (GAD), depressive symptoms, and sleep quality were 35.1%, 20.1%, and 18.2% respectively among the participants. The study has also shown that younger people reported a significantly higher prevalence of GAD and depressive symptoms than older ones.

In the USA, a tracking poll study was conducted among American people, which reported that 57% (n=1226) of the population has their lives majorly disrupted by the pandemic (Kirzinger and others, 2020). Similarly, in another study conducted among 5470 respondents by Czeisler and others (2020), overall, 40.9% of the respondents who completed surveys during June reported an adverse mental or behavioral health condition, including anxiety disorder or depressive disorder (30.9%), trauma and stressor related disorder (TSRD) symptoms related to COVID-19 (26.3%), increased substance uses to cope with stress and emotions related to COVID-19 (13.3%) and having seriously considered suicide in the preceding 30 days (10.7%) in the USA. In a similar report by Czeisler and others (2020) in a different socio-demographic group, at least one adverse mental or behavioral health symptom was reported by more than half of the respondents who were aged 18-24 years (74.9%) and 25-44 years (51.9%), of Hispanic ethnicity (52.1%), who held less than a high school diploma (66.2%), and those who were essential workers (54.0%), and unpaid caregivers for adults (66.6%). In this study, in the USA also, the prevalence of different types of mental problems were found higher among the students. Elevated rates of anxiety, depression, harmful alcohol use, and decrease in mental well-being was reported by Ahmed and others, (2020) among young people aged 21-40 years in comparison to other age groups from the study among 1074 Chinese people living in the US.

There is a very little literature available on the mental health effect that arises due to COVID in the context of Nepal. From the limited available studies, lockdown, curfews, self-isolation, social distancing, and quarantine have been found associated with the overall physical, mental, spiritual, and social well-being of Nepali people (Poudel and Subedi, 2020). The study by Acharya and others (2020) also shows a significant association between self-perceived stress and COVID-19. Among the respondents, 76.7% reported that they had moderate self-perception of stress after the outbreak of COVID-19; and 5.3% of them reported high stress. In another qualitative cross sectional study by Sigdel and others (2020) conducted among the general population of Nepal (n=349) it was found that prevalence rates of

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

depression, anxiety, and depression-anxiety co-morbidity was 34.0%, 31.0%, and 23.2% respectively. The same report also showed that females, those living alone, health professionals, and those who spent more time accessing information about COVID-19 were significantly more likely to have depression and anxiety.

Along with depression, anxiety and stress, a higher suicide rate has also been seen in the current situation. A total of 1,647 cases were filed as of June 27 in police stations in Nepal, with an average of 18 people killing themselves every day since the enforcement of the lockdown (*The New Indian Express*, 7 July 2020). According to Singh and others (2020), during the COVID-19 pandemic, suicide cases in Nepal have increased by 20% and the rate of mental health illness is predicted to see a further rise after the pandemic. Starting from 24th March 2020, within 74 days of lockdown measures to reduce the transmission of COVID-19, on an average 16.5 people have lost their lives in a day, while in the year 2019 the rate was 15.8 a day (*The Jakarta Post*, 2020 as cited by Singh and others, 2020). In this way, increase in suicide cases is somehow linked to the COVID-19 pandemic in Nepal (*My Republica*, 2020).

From the above-mentioned studies, COVID-19 was found to be linked with many mental disorders among the general population in the globe. The common mental disorders were low mood, irritability, stress, anxiety, insomnia, emotional exhaustion, anger, depression, and post-traumatic stress symptoms. Among them, anxiety and stress along with sleeping disorders are found most common in different geographical areas and age groups. In Nepalese situation COVID-19 related mental health risk factors in Nepalese youths might have been caused due to deficiency of funding in youth mental health services, social media use, a suddenly-imposed lockdown, lack of understanding of lockdown restrictions, sudden work/student life changes, and abrupt postponement of Secondary Education Examination (SEE) (Sharma and others, 2020).

Impacts on students' mental health

Among the different vulnerable groups affected by COVID- 19, students have also been found suffering from various mental disorders. The results of some studies on the mental health effect among students have been summarized in table 1.

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

Table 1

OBSERVATIONAL STUDIES OF MENTAL HEALTH CONCERNS RELATED TO COVID- 19 ON STUDENTS.

<i>Author</i>	<i>Country of origin</i>	<i>Population</i>	<i>Methodology</i>	<i>Instruments</i>	<i>Results</i>
Chen and others (2020)	China	College students	Cross-sectional study online	Depression (PHQ-9), living rhythm	7.7% of the students have depressive symptom due to COVID-19 Pandemic.
Husky and others (2020)	France	University students (n=291)	Online survey (DASS 21 and IES)	Stress and anxiety	Stress elevated in the overall 61.6 % , depression elevated 60.2%
Khan and others (2020)	Bangladesh	Students	Online survey	Depression , stress and anxiety	Perceived COVID-19 symptoms were significantly associated with higher scores in DASS stress, depression and anxiety.
Marelli and others, 2020	Italy	University Students and administrat	Web based survey	Insomnia, anxiety	Insomnia reached 40% , 27.8% showed

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

		ive staff (n= 493)			depressive symptoms, 34.3% showed anxious symptoms
Son and others, 2020	United states	Collage student (N=195)	Interview survey	Stress, anxiety	(71%) indicated increased stress and anxiety
Dangi and George (2020)	India	Students (n= 1530)	non-experime ntal-survey design	Anxiety	76.44% students were having severe anxiety and 23.66% students were having moderate anxiety.
Acharya (2020)	Nepal	School, college and university student (n= 300)	Online	Stress	42 % has increased stress,

Most of the studies have been carried out through online survey. Chen and others (2020) have conducted a study to describe living rhythms, depressive symptoms and regulatory emotional self-efficiency (RESE) among the 1210 students across the territory of China; and depressive symptom was detected among 7.7% participants. Major symptoms were lack of energy, lack of pleasure and sleep disorder; and the rate of depressive symptoms among students was found higher than in the general population during this pandemic situation.

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

In another study conducted by Son and others (2020) in the United States among 195 students, 138 (71%) respondents indicated increased stress and anxiety due to the COVID-19 outbreak. Multiple stressors were identified that contributed to the increased levels of stress, anxiety, and depressive thoughts among students. These included fear and worry about their health and of their loved ones (91%), difficulty in concentration (89%), disruptions in sleeping patterns (86%), decreased social interactions due to physical distancing (86%), and increased concerns on academic performance (82%). Higher level of anxiety among the students during the confinement period was reported by Husky and others (2020) in France in the online study conducted among 291 university students.

COVID-19 outbreak has disrupted the lives of many people across the world. The worldwide rapid increase of infected cases has created a sense of uncertainty and anxiety about what is going to happen. A tremendous level of stress among the university fraternity, inclusive of students along with the unfavorable effects on learning and psychological health, has also been reported by Alrabiaah and others (2020). The major higher degree of depression, anxiety and stress was also reported on the students in Bangladesh (Khan and others, 2020). Similarly, a higher level of depression, anxiety and stress among university students from different countries in Australia has been reported by Collins (2020). Along with the other forms of mental disorder, Marelli and others (2020) have reported a higher level of sleeping problem and insomnia among the students in Italy; and similarly higher sleeping problem has been reported in China by Chen and others (2020). According to YoungMinds' survey in the United Kingdom, 83% of young people think that their already existing mental health conditions got worse as a result of the suspension of educational activities along with loss of routine and limited social communication (YoungMinds, 2020). Approximately one out of every four students were found suffered from anxiety in China (Cao and others, 2020); and in another study, about 60% of the students seemed to have moderate to severe IES score (Odriozola-González and others, 2020 as cited by Khan and others, 2020). Hence the rates of mental disorders have been found different at different locations and circumstances.

In India, Majumdar and others (2020) surveyed among 325 undergraduate and postgraduate students, and found more extensive feelings of sleepiness, with significantly ($p < .05$) increased daytime nap duration, and depressive symptomatology ($p < .001$) as compared to before COVID -19 pandemic.

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

The same report has illustrated that the chronic stress of living through a pandemic led to a host of physical symptoms like headaches, insomnia, digestive problems, hormonal imbalances and fatigue.

There are rare instances of systematic study on the effect of COVID-19 among students in the Nepalese context. A preliminary online survey conducted by Acharya (2020) among the students of the school, college, and university level has shown 42% elevated stress among the respondents due to COVID -19 in Nepal. Similarly, schools, colleges, and universities were closed due to the government lockdown in the country. The majority of students' final exams were postponed until further notice. The uncertain academic progression could have had a negative impact (Samadarsi and others, 2020).

Generally, it is considered that aging increases the risk of COVID-19 infection and mortality; however, the results of existing studies show that during the pandemic, the levels of anxiety, depression and stress are significantly higher in the age group of adolescents and youths. The main reason for this seems to be that this age group takes more concern over the future consequences and economic challenges caused by the pandemic, as they are key active working forces in society and are, therefore, mostly affected by redundancies and business closures (Hang and Zhao, 2020). Hence, the epidemic has brought not only the risk of death from the viral infection but also unbearable psychological pressure among the students of different levels (Yang and others, 2020).

Conclusion

COVID-19 pandemic has rapidly increased and created calamity throughout the world. This contagious virus has not only raised concerns over general public health but has also shown the psychological and mental disorders among the general population. From this review, it has been concluded that the COVID-19 pandemic has a huge effect on mental health of individuals, and the rate of its prevalence has differed according to the age group, geographical areas, and income level. In this context, it is vital to identify the individuals prone to psychological disorders from different groups and at different layers of populations. Students are among the more sensitive groups and the negative effect on their mental health might affect their own future life as well as in the national development ultimately. In the context of Nepal, systematic studies in this regard are not sufficient. Hence it is

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

essential to develop and implement some appropriate psychological strategies, techniques, and interventions, to preserve and improve the mental health of students and other general population through more specific studies in local context.

References

- Acharya, Samikksha. (2020). *Stress in the students after lockdown due to outbreak of corona virus (COVID-19)*. Retrieved from: <http://dx.doi.org/10.2139/ssrn.3627022>
- Acharya, Shiva Ram; Shin, Yong Chul; and Moon, Deog Hwan. (2020). COVID-19 outbreak and suicides in Nepal: Urgency of immediate action. *International Journal of Social Psychiatry*. DOI: <https://doi.org/10.1177/0020764020963150>
- Ahmed, Md Zahir; Ahmed, Oli; Aibao, Zhou; Hanbin, Sang; Siyu, Liu; and Ahmad, Akbaruddin (2020). Epidemic of COVID-19 in China and associated psychological problems. *Asian Journal of Psychiatry*, 51. DOI: <https://doi.org/10.1016/j.ajp.2020.102092>
- Arabiaah, Abdulkarim; Temsah, Mohamad-Hani; Al-Eyadhy, Ayman; Hasan, Gamal M; Al-Zamil, Fahad; Alsubaie, Sarah; Alshime, Falah; Jamal, Amr; Alhaboob, Ali; Al-Saadi, Basma and Somily, Ali Mohammed. (2020). Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) associated with stress among medical students at a university teaching hospital in Saudi Arabia. *Journal of Infection and Public Health*. *13*. DOI: [10.1016/j.jiph.2020.01.005.31](https://doi.org/10.1016/j.jiph.2020.01.005.31).
- Altena, Ellemarije; Baglioni, Chiara; Espie, Colin; Ellis, Gavriloff, Dimiri; Holzinger, Brigitte;Schlarb, Angelika; Frase, Lukas; Jernelöv, S Susanna; and Riemann, Dieter. (2020). Dealing with sleep problems during home confinement due to the COVID-19 outbreak: Practical recommendations from a task force of the European CBT-I Academy. *Journal of Sleep Research*. *10.1111/jsr.13052*.
- Amal, Khalil. (2020). Prevalence of mental disorders and the pandemic of COVID-19: A contemporary literature review. *Saudi Journal of Biomedical Research* DOI: [10.36348/sjbr.2020.v05i09.001](https://doi.org/10.36348/sjbr.2020.v05i09.001).
- Baral, Ishwari Adhikari; and K.C., Bhagawati (2019). Post-traumatic stress disorder and coping strategies among adult survivors of the earthquake, Nepal. *BMC Psychiatry*. *19(1)*:118.

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

- Bastola, Anup; Sah, RNajot; Morales, Alfonso J Rodriguez; Lal, Bibek Kumar; Jha, Runa; Ojha, Hemanta Chanrda; Shrestha, Bikas; Chu, Daniel KW; Poon, LeoLM; Costello, Antony; Morita, Kouichi and Pandey, Basu Dev. (2020). The first 2019 novel coronavirus case in Nepal. *The Lancet*, 20(3), pp. 279-80. DOI: [https://doi.org/10.1016/S1473-3099\(20\)30067-0](https://doi.org/10.1016/S1473-3099(20)30067-0)
- Brooks, Samanta K; Webster, Rebecca K; Smith, Louise E; Woodland, Lisa; Wessely, Simon; and Greenberg, Neil. (2020). The psychological impact of quarantine and how to reduce it: A rapid review of the evidence. (2020). *Lancet*. 14; 395, pp. 912-920. DOI: [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Bortel, Van Tine; Basnayake, Anoma; Wurie, Fatou; Jambai, Musu; Koroma, Alimamy; Muana, Andrew; Hann, Katrina; Eaton, Julian; Martin, Steven; and Nellums, Laura. (2016). Psychosocial effects of an Ebola outbreak at individual, community and international levels. *Bulletin of the World Health Organisation* 94. 10.2471/BLT.15.158543.
- Cao, Wenjun; Fang, Ziwei; Hou, Guoqiang; Han, Mei; Xu, Xinrong; Dong, Jiabin; and Zheng, Jianzhong (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, 112934. Doi: <https://doi.org/10.1016/j.psychres.2020.112934>
- Chen, Rong-ning; Liang, Shun-wei; Peng, Yang; Li, Xue-geo; Chen, Jianbin; Tang, Si-yao; and Zhao, Jing-bo. (2020). Mental health status and change in living rhythms among college students in China during the COVID-19 pandemic: A large-scale survey. *J. Psychosom Res* 137:110219, DOI: 10.1016/j.jpsychores.2020.110219
- Collins, Francesca E. (2021). Measuring COVID-19-related fear and threat in Australian, Indian, and Nepali university students. *Personality and Individual Differences*, 175, 110693. DOI: <https://doi.org/10.1016/j.paid.2021.110693>
- Czeisler, Mark. É; Lane, Rashon I; Petrosky, Emiko; Wiley, Joshua F; Christensen, Aleta; Njai, Rashid; Weaver, Matthew D; Robbins, RRebecca; Facer-Childs, Elies R; Barger, Laura K; Czeisler, Charles A; Howard, Mark E; and Rajaratnam, Shantha. (2020). Mental health, substance use, and suicidal ideation during the COVID-19 pandemic - United States, June 24-30, 2020. *MMWR. Morbidity and Mortality*

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

Weekly Report, 69(32), 1049-1057. DOI: <https://doi.org/10.15585/mmwr.mm6932a1>

- Dangi, Ravi; and George, Mathew. (2020). Psychological perception of students during COVID-19 outbreak in India (June 11, 2020). *High Technology Letters* 26(6): 142-144, Retrieved from <https://ssrn.com/abstract=3625571>
- Galea, Sandro; Merchant, Raina M; and Lurie, Nicole. (2020). The mental health consequences of COVID-19 and physical distancing: The need for prevention and early intervention. *JAMA Internal Medicine* 180(6):817-818. DOI: [10.1001/jamainternmed.2020.1562](https://doi.org/10.1001/jamainternmed.2020.1562)
- Gao, Junling; Zheng, Pinpin; Jia, Yingnan; Chen, Hao; Mao, Yimeng; Chen, Suhong; Wang, Yi; Fu, Hua and Dai, Junming. (2020). Mental health problems and social media exposure during COVID-19 outbreak. *PLoS ONE* 15(4): DOI: <https://doi.org/10.1371/journal.pone.0231924>
- Gunnell, David; Appleby, Louis; Arensman, Ella; Hawton, Keith; John, Ann; Kapur, Nav; Khan, M; O'Connor, Rory C; and Pirkis, Jane. (2020). Suicide risk and prevention during the COVID-19 pandemic. *The Lancet Psychiatry*, 7(6), pp. 468-71. Retrieved from [https://doi.org/10.1016/S2215-0366\(20\)30171-1](https://doi.org/10.1016/S2215-0366(20)30171-1)
- Huang, Yeen; and Zhao, Ning (2020). Generalized anxiety disorder, depressive symptoms, and sleep quality during the COVID-19 outbreak in China: A web-based cross-sectional survey. *Psychiatry Res.*;288:112954.
- Husky, Mathild M; Masfety, Viviane K; and Swendsen, Joel D. (2020). Stress and anxiety among university students in France during COVID-19 mandatory confinement. *Comprehensive Psychiatry*, 102: DOI: <https://doi.org/10.1016/j.comppsy.2020.152191>
- Khan, Abid Hasan; Sultana, Mst. Sadia; Hossain, Sahadat; Hasan, M. Tasdik; Ahmed, Helal Uddin; and Sikder, Md. Tajuddin. (2020). The impact of COVID-19 pandemic on mental health and wellbeing among home-quarantined Bangladeshi students: A cross-sectional pilot study. *Journal of Affective Disorders*, 277, 121-128. Retrieved from: <https://doi.org/10.1016/j.jad.2020.07.135>
- Kirzinger, Ashles; Kearney, Audrey; Hamel, Liz; and Brodie, Mollyann. (2020). *KFF health tracking poll—early April 2020: The impact of coronavirus on life in America*. Retrieved from

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

<https://www.kff.org/coronavirus-covid-19/report/kff-health-tracking-poll-early-april-2020/>.

- Lahav, Yael. (2020). Psychological distress related to COVID-19 - The contribution of continuous traumatic stress. *Journal of Affective Disorders*, 277, 12316. Retrieved from <https://doi.org/10.1016/j.jad.2020.07.141>.
- Majumdar, Piya; Biswas, Ankita and Sahu, Subhashis. (2020). COVID-19 pandemic and lockdown: Cause of sleep disruption, depression, somatic pain, and increased screen exposure of office workers and students of India, *Chronobiology International*, 37(8), 1191-1200, DOI: 10.1080/07420528.2020.1786107.
- Mak, Ivan Wing; Chu, Chung Ming; Pan, Pey Chyou; Yiu, Michael G; Ho, Suzanne C and Chan, Veronica Lee. (2010). Risk factors for chronic post-traumatic stress disorder (PTSD) in SARS survivors. *Gen. Hosp. Psychiatry* 32(6): 590-598. DOI: 10.1016/j.genhosppsy.2010.07.007.
- Marelli, Sara; Castelnuovo, Alessandra; Somma, Antonella; Castronovo, Vincenza; Mombelli, Samantha; Bottoni, Daniela; Leitne, Ccaterina; Fossati, Andea; and Ferini-Srambi, Luigi. (2020). Impact of COVID-19 lockdown on sleep quality in university students and administration staff. *J Neurol*. DOI: <https://doi.org/10.1007/s00415-020-10056-6>.
- Ministry of Health and Population. (2021). Last 24-hour update of COVID-19. (7 June 2021). Retrieved from <https://covid19.mohp.gov.np/>
- My Republica. (2020). *Suicide cases on the rise, mental health experts warn of a 'grim' situation*. Retrieved from: <https://myrepublica.nagariknetwork.com/news/suicide-cases-on-the-rise-mental-health-experts-warn-of-a-grim-situation/>
- Montemurro, Nicola. (2020). The emotional impact of COVID-19: From medical staff to common People. *Brain Behave Immun* 87: 23-24 DOI: 10.1016/j.bbi.2020.03.032.
- Pappa, Sofia; Ntella, Vasiliki; Giannakas, Timoleon; Giannakoulis, Vassilis. G; Papoutsis, Eleni; and Katsaounou, Patsaounou. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain, Behavior, and Immunity* 88. pp. 901-907. DOI: 10.1016/j.bbi.2020.05.026

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

- Poudel, Kritika; and Subedi, Pramod. (2020). Impact of COVID-19 pandemic on socioeconomic and mental health aspects in Nepal. *International Journal of Social Psychiatry*, 66(8), pp. 748-755. DOI: <https://doi.org/10.1177/0020764020942247>
- Salari, N.; Hosseinian-Far, A.; Jalali, R.; Raygani, A.V., Rasoulpoor, S.; Mohammadi, M.; Rasoulpoor, S; and Pavel, B.K. (2020). Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review, and meta-analysis. *Global Health* 16, DOI: <https://doi.org/10.1186/s12992-020-00589>.
- Samadarshi, Saurav Chandra Acharya; Sharma, Sharmistha; and Bhatta, Jeevan. (2020). An online survey of factors associated with self-perceived stress during the initial stage of the COVID-19 outbreak in Nepal. *The Ethiopian Journal of Health Development (EJHD)*, 34(2). Retrieved from <https://ejhd.org/index.php/ejhd/article/view/2968>.
- Shanafelt, Tait; Ripp, Jonathan; and Trockel, Mickey. (2020). Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA*, 323(21), 2133–2134. DOI: <https://doi.org/10.1001/jama.2020.5893>
- Sharma, Vinita; Ortiz, Miguel Reina; and Sharma, Nandita. (2020). Risk and protective factors for adolescent and young adult mental health within the context of COVID-19: A perspective from Nepal. *The Journal of Adolescent Health*, 67(1), 135-37. Retrieved from <https://doi.org/10.1016/j.jadohealth.2020.04.006>
- Singh, Rakesh; Baral, Kedar; and Mahato, Sharika. (2020). An urgent call for measures to fight against increasing suicides during the COVID-19 pandemic in Nepal. *Asian Journal of Psychiatry* 54, 102259. DOI: <https://doi.org/10.1016/j.ajp.2020.102259>.
- Sigdel, Anil; Bista, Anu; Bhattarai, Navaraj; Pun, Bimal Chandra; Giri, Govind; Marqusee, Hanna; and Thapa, Subash. (2020). Depression, anxiety, and depression-anxiety comorbidity amid COVID-19 pandemic: An online survey conducted during the lockdown in Nepal. *MedRxiv*. 2:1–11 Retrieved from <https://www.medrxiv.org/content/10.1101/2020.04.30.20086926v1.full.pdf>
- Son, Changwon; Hegde, Sudeep; Smith, Alec; Wang, Xiaomei; and Sasangohar, Farzan. (2020). Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of*

Effect of COVID -19 Pandemic on Mental Health of Students: A Contemporary Literature Review

Medical Internet Research, 22(9), e21279. DOI: <https://doi.org/10.2196/21279>

The New Indian Express. (7 July, 2020). *Suicide cases on the rise in Nepal during COVID-19 lockdown*. Retrieved from <https://www.newindianexpress.com/world/2020/jul/07/suicide-cases-on-the-rise-in-nepal-during-covid-19-lockdown-2166528.html>

Wang, Cuiyan; Pan, Riyu.; Wan, Xiaoyang; Tan, Yilin; Xu, Linkan; Ho, Cyrus. S and Ho, Roger C. (2020). 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. DOI: <https://doi.org/10.3390/ijerph17051729>

Wang, Yongguang; Xu, Baihua; Zhao, Guoqiu; Cao, Rifang; He, Xiaoyan and Fu, S.(2011). Is quarantine related to immediate negative psychological consequences during the 2009 H1N1 epidemic? *Gen Hosp Psychiatry*. 2011;33(1): 75-7.

World Health Organization. (2021). WHO Corona virus (Covid-19) Dash board, Retrieved from: covid19.who.int

Yang, Yuan; Li, Wen; Zhang, Qinge; Zhang, Ling; Cheung, Teris; and Xiang, Yu-Tao. (2020). Mental health services for older adults in China during the COVID-19 outbreak. *Lancet Psychiatry* 7 (4) DOI: [https://doi.org/10.1016/S2215-0366\(20\)30079-1](https://doi.org/10.1016/S2215-0366(20)30079-1).

YoungMinds. (2020). *Coronavirus: Impact on young people with mental health needs Survey 2: Summer 2020*. Retrieved from <https://youngminds.org.uk/media/3904/coronavirus-report-summer-2020-final.pdf>.

Zandifar, Atefeh; and Badrfam, Rahim. (2020). Iranian mental health during the COVID-19 epidemic. *Asian J. Psychiatr*. DOI: 10.1016/j.ajp.2020.101990.

