

# COVID-19 Pandemic its Effects on Students Mental Health

Dhastagir Sultan Sheriff<sup>1</sup>, Razeena Bhol<sup>2</sup>

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**Author's Affiliation:** <sup>1</sup>Professor, Department of Medicine, Benghazi University, Benghazi 152231, Libya, <sup>2</sup>MBBS Student, Medical College, Durban, South Africa.

**Corresponding Author:** Dhastagir Sultan Sheriff, Professor, Department of Medicine, Benghazi University, Benghazi 152231, Libya.

**E-mail:** drdsheriff@gmail.com

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**Abstract**

COVID-19 pandemic has had a negative impacts on higher education. There is a need to develop interventions and preventive strategies to address the mental health of college students. Government, professional organizations, civil society bodies, and other relevant stakeholders have come up with various measures in the context of mental health in a short period.

Acute stress, anxiety and depressive symptoms are prevalent during the Covid-19 pandemic and may continue for a prolonged period. Multiple epidemic and psychosocial factors, such as family members being infected, massive media exposure, low social support, senior year, and prior mental health problems were associated with increased risk of mental health problems among the students. However, there remains much to be learned about the psychological impacts facing students and what can be done to reduce their negative effects.

**Keywords:** COVID 19; Mental health; Students; Higher education.

**Introduction**

In December 2019, the World Health Organization (WHO) announced that they had identified a cluster of pneumonia cases from the city of Wuhan in China. The causative agent was later confirmed to be 'Severe Acute Respiratory Syndrome Coronavirus 2' (SARS-CoV-2) and is what we now know to cause 'Coronavirus Disease 2019' (COVID-19). On the 30th of January 2020, the Covid-19 pandemic was declared as a Public Health Emergency of International Concern (PHEIC) by WHO.

Since the onset of the Covid-19 pandemic, it has now been shown that Covid-19 does not only impact physical health and well being but also mental health. Overall, this pandemic has had

a catastrophic effect on the healthcare systems present all around the world but has also posed a significant mental health risk to different communities. Student mental health across the world within higher education has been a recent trend of growing concern and is, therefore, one of the communities placed at risk.

History according to Jalloh F, et al.<sup>1</sup> shows that every infectious disease occurrence resulting in a pandemic brings with itself massive global challenges posing major setbacks in the fields of not only physical health but mental health as well. An example of this includes the Ebola outbreak in the year 2014, where there is evidence that stress, anxiety, and depression were still prevalent after a year since the Ebola response had been established.<sup>1</sup>

Another significant example includes the definition of the relationship between HIV-infected individuals and their substantially higher prevalence of mental health issues when compared with the general population.<sup>2</sup>

The effects of the Covid-19 pandemic on socio-economic conditions and impact there of on under-developed or developing countries can be worse than developed countries due to the absence or insufficiency in existing health care infrastructure. Symptoms relating to Post-Traumatic Stress Disorder (PTSD) during and after a pandemic can pose an enormous challenge to the mental health system of any country.<sup>3</sup>

The outbreak of the Covid-19 pandemic, therefore, has the potential to demand enormous requirements for mental health care needs amongst the students and general population.<sup>4,5</sup> The present study aims to understand the possible symptoms, stress and anxiety triggers and mental health care needs related to the Covid-19 pandemic among the higher education and medical students.

## Methods

The current assignment reviews the existing literature on mental health issues and interventions relevant to the Covid-19 pandemic. A search of the electronic database of the National Center of Biotechnology Information (NCBI) and its popular resource PubMed and google scholar was undertaken, using the search terms Covid-19, pandemic, student's mental health affecting various aspects, and in various permutations and combinations.

A thorough search of all published journal articles, newspaper articles, webpages including World Health Organisation, Ministry of Health and Wellness Mauritius, State governments, and non-government organizations. The review was limited to search output up to 31st November 2021.

Evidence was created into two broad captions namely, mental health issues during the Covid-19 pandemic specifically in the context of students and possible reasons thereof. Interventions are recommended locally and based on the evidence amalgamation, the author has referred to a conceptual framework for mental health risk during the Covid-19 pandemic and a recommendation framework to provide intervention strategies regarding a low income and developing country like Mauritius.

## *Review of study design and study methodology*

With the review of various study designs and methodologies for mental health implications of different outbreaks, epidemics, and pandemics globally, from the current literature of available research papers and journals as described below. Online surveys and cross-sectional studies are commonly used due to their accessibility to invite respective participants.

According to Talevi D, et al.<sup>6</sup> fifteen case studies related to the original research on the general population, on health care workers, and patients with Covid-19 were conducted. From these the most common study design used was cross-sectional online surveys. Cross-sectional surveys included mobile phone app based data retrieval and telephonic interviews, there was also one study conducted with online ecological recognition (OER). Whilst Mohindra R, et al.<sup>7</sup> used study design and methodology of qualitative analysis.

For Ebola virus survivors the studies were comprised of health questionnaires, depression scores, and anxiety disorders whilst other studies for the Ebola virus epidemic were conducted using a symptoms checklist. A systematic review was used for SARS 2003 outbreak for health workers Roy A, et al.<sup>8</sup>

According to experts, it is essential to note that specific attention is needed for other groups or communities like students, who are at risk of further developing mental health issues and that they may need personalized interventions and support systems.<sup>6</sup>

The study conducted by Ma Z, et al.<sup>9</sup> amongst college students in China related to Covid-19 pandemic factors and mental health issues was also of cross-sectional design, and regression analysis was performed to determine factors associated with mental health problems for students.

Student mental health related study was conducted by Son C, et al.<sup>10</sup> for the effects of Covid-19 pandemic having used a semi-structured interview survey guide to determine the mental health status of students both quantitatively and qualitatively in the United States of America.

Another study conducted by Cao W, et al.<sup>11</sup> described the impact on college students due to the Covid-19 pandemic. Their study was conducted with the use of structured questionnaires and clustered sampling. The methods used for analysis were univariate and ordinal regression analysis.

Lastly, a web based cross-sectional survey was conducted by Banerjee I, et al.<sup>12</sup> across medical students in Mauritius. This study was analyzed

with logistics regression analysis to determine the psychological and educational impacts of lockdown on the students due to Covid-19.

### Measurements and Analysis

The measurements of various variables and attributes used by various researchers related to challenges faced by college students' mental health during Covid-19 were listed to determine the negative impact of Covid-19 as being mild, moderate, severe, or none.

The variables being listed above were concerns on general health, difficulty in concentration, disruptions to the sleeping pattern, impact of social isolation, educational impact, disruption to the eating pattern, changes in living environment, financial difficulties, increased class workload, depressive thoughts. The study's purpose was to assess students' general stress levels using the Perceived stress scale (PSS) followed by impact on participants and their peer's stress and anxiety levels.<sup>10</sup>

According to the study conducted by Ma Z, et al.<sup>9</sup> factors related to mental health that were measured included stress, depression, and anxiety by using a Chinese version of the impact of event scale-6, health questionnaire-9, and anxiety disorder-7 correspondingly. Most reviews used descriptive and Likert scales to seek participant feedback on mental health related impacts. As mentioned above, the Likert scale or more so the 5-point Likert scale with a self-guiding question depicting strongly-disagree as 1, disagree as 2, neutral as 3, agree as 4, and strongly-agree as 5. Descriptive questionnaires with yes/no and info types; using multiple questions linking with demographic profile, age, gender, year of study, habitual smoking, alcohol

use and prior health concerns, family and friends having been infected with Covid-19, etc. Similarly, a different study for college students' mental health was focused on assessing impact relating to lockdown on education quality and related psychological impact on those students.<sup>12</sup>

Whilst some researchers used variable scales and included aspects of psychological and psychosocial aspects, exposure to covid cases, gender, age, proximity as well as exposure of covid-19 cases, impact on mental health, educational impact. Most importantly, the three fundamental questions routinely asked were related to stress, anxiety, and depression.

From the review of the case studies, the following can be summarized: various factors were collected in various studies for measurements and classifications; Psychosocial factors, psychological impact, exposure to Covid-19 cases, social support during Covid-19 pandemic, stress symptoms, depressive symptoms, anxiety symptoms and educational impact including burnout. Other notable factors included the exposure to social media, year of study within degree course, the impact of Covid-19 infections and death amongst friends and family, financial burden of tuition fees or health care and suicidal thoughts or ideation, etc.

Most case studies regarding Covid-19 related surveys had data captured through online surveys which were coded through thematic methods, validated, and analyzed through the available application software packages along with the application of descriptive statistical methods to outline the summary of the results and related findings.<sup>8</sup>

## Results

### Exhibit-A: Prevalence of depression and suicidality

**Table 1:** Prevalence of depression and suicidality in 251 medical students in preclinical and clinical years

|                                                   | Preclinical %<br>(95% CI) | Clinical %<br>(95% CI) | Total %<br>(95% CI) |
|---------------------------------------------------|---------------------------|------------------------|---------------------|
| 'Caseness' on the BDI-FS (Scored)                 | 36% (28% to 45%)          | 41% (33% to 49%)       | 39% (33% to 45%)    |
| Significant depression or anhedonia on the BDI-FS | 15% (9.7% to 23%)         | 17% (12% to 24%)       | 16% (12% to 21%)    |
| Suicidality on BDI-FS                             |                           |                        |                     |
| Thoughts only                                     | 17% (11% to 25%)          | 19% (13% to 26%)       | 18% (14% to 23%)    |
| Suicidal wishes                                   | 2.7% (0.9% to 8.1%)       | 2.1% (0.8% to 6.3%)    | 2.4% (1.4% to 2.3%) |
| Total                                             | 111                       | 140                    | 251                 |

Source: Fitzpatrick O, et al. BMJ Open 2019;9:e023297. doi:10.1136/bmjopen-2018-023297

**Exhibit-B:** Level of anxiety amongst college students

Number of students with different anxiety level (n = 7143).

| Anxiety level | Number | Ratio (%) |
|---------------|--------|-----------|
| Normal        | 5367   | 75.1      |
| Mild          | 1518   | 21.3      |
| Moderate      | 196    | 2.7       |
| Severe        | 62     | 0.9       |

**Source:** Cao et al. (2020) Vol.287, 12934, <https://doi.org/10.1016/j.psychres.2020.112934>.

The review of various research case studies and journal publications aided in the summarization of results. This can assist with the future development and implementation of a plan of action or way forward strategies that address the research outcome and review related inquiry questions, in this case, it is the impact of the Covid-19 pandemic and its effects on mental health for college students.

***Covid-19 pandemic and its effects on student's mental health***

The study conducted for medical students in Ireland, with measures of depression based on the Beck Depression Inventory-Fast Screen (BDI-FS), is tabulated in Exhibit-A.

As per Exhibit-A above, their study suggests that

16% of students had significant depression, 18% had experienced suicidal thoughts and 2.4% had suicidal wishes. The study was conducted amongst 251 students and there was a 39% prevalence of depression caseness on the BDI-FS.<sup>13</sup>

According to a study conducted by Cao W, et al.<sup>11</sup> they have related the psychological effects of the Covid-19 pandemic on college students in China to assess the mental state of college students during the Covid-19 pandemic to deliver a theoretical basis for psychological interventions with college students and support them likewise. Exhibit-B below clearly depicts these 7143 college students with different anxiety levels and how their mental health was affected to varying degrees during the Covid-19 pandemic.

As per Exhibit-B above, anxiety symptoms

**Exhibit-C:** Factors influencing the students' anxiety

Ordinal logistic regression analysis of factors influencing college students' anxiety.

| Factors                                                | Number | $\chi^2$ | OR    | P      | OR(95%CI)      |
|--------------------------------------------------------|--------|----------|-------|--------|----------------|
| <b>Place of residence</b>                              | 2570   | 0.068    | 0-810 | 0.002  | (0.709.0.92S)  |
| Urban                                                  | 2570   | 0.068    | 0-810 | 0.002  | (0.709.0.0925) |
| Rural urfcsn                                           | 1442   | 0.074    | 0.928 | 0.310  | (0.803.1X173)  |
| Rural                                                  | 3131   | -        | -     | -      | -              |
| <b>Steady family income</b>                            |        |          |       |        |                |
| Yes                                                    | 3367   | 0060     | 0.726 | <0.001 | (0.645.0.817)  |
| No <sup>a</sup>                                        | 3776   | -        | -     | -      | -              |
| <b>Living with parents</b>                             |        |          |       |        |                |
| Yes                                                    | 6789   | 0.119    | 0.752 | 0.017  | (0.596.0.950)  |
| No <sup>a</sup>                                        | 354    | -        | -     | -      | -              |
| <b>Relative or acquaintance infected with COVID-19</b> |        |          |       |        |                |
| Yes                                                    | 39     | 0.120    | 3X107 | <0.001 | (2-377. 3.804) |
| No <sup>a</sup>                                        | 7104   | -        | -     | -      | -              |

SF. Std. Error. OR Odds ratio. CI Confidence interval. <sup>a</sup>reference group.**Source:** Cao et al. (2020) Vol.287, 12934, <https://doi.org/10.1016/j.psychres.2020.112934>.

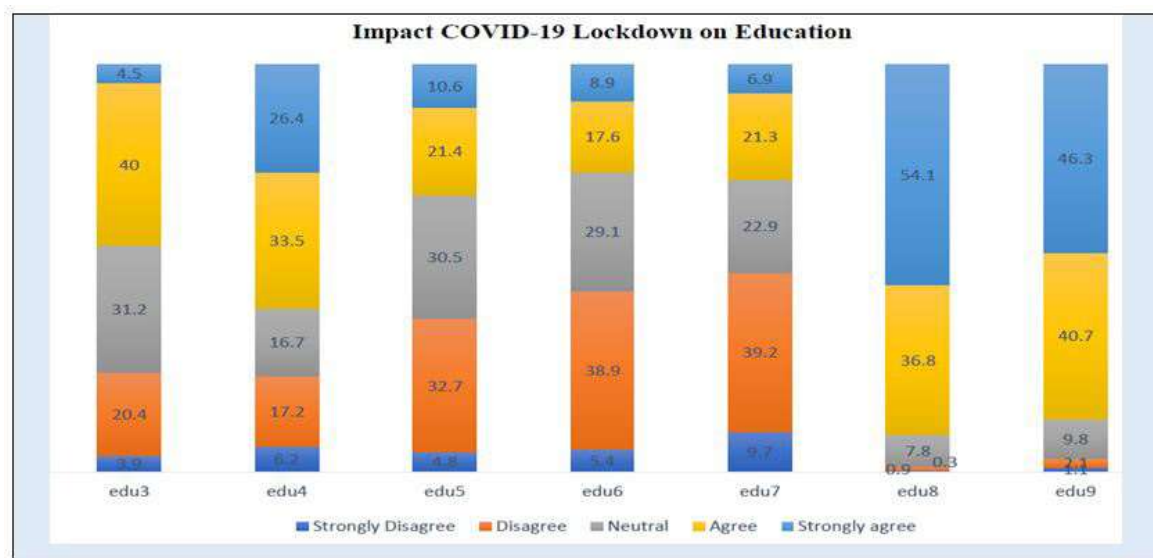
**Exhibit-D:** Correlation between Covid-19 related stressors and students Anxiety

Correlation analysis between the COVID-19-related stressors and college students' anxiety when facing the epidemic.

| Related stressors               | Anxiety level |        |
|---------------------------------|---------------|--------|
|                                 | R             | P      |
| Worry about economic influences | 0.327         | <0.001 |
| Worry about academic delays     | 0.315         | <0.001 |
| Influence on daily-life         | 0.316         | <0.001 |
| Social support                  | -0.151        | <0.001 |

*r* Correlation coefficient.

**Source:** Cao et al. (2020) Vol.287, 12934, <https://doi.org/10.1016/j.psychres.2020.112934>.

**Exhibit-E:** Covid-19 Lockdown Impact on Education for college students (%)**Source:** Banerjee et al. Nepal J Epidemiol. 2021;11(2):1006-1022.DOI:10.3126/nje.v11i2.36951

were affecting students to varying degrees due to pandemic as 21.3% shows mild symptoms of anxiety, 2.7% low, and 0.9% severe; however, 75.1% had no symptoms.<sup>11</sup>

Exhibit-C below reflects the factors influencing the anxiety among college students during the Covid-19 pandemic it is important to note that knowing whether an immediate family member, relative, or friend had been infected with Covid-19 was a risk factor for anxiety. However, according to the study the students who resided in urban areas had a lesser anxiety experience compared with those living in rural areas. Steady family income and living with one's family were also protective factors against anxiety.<sup>11</sup>

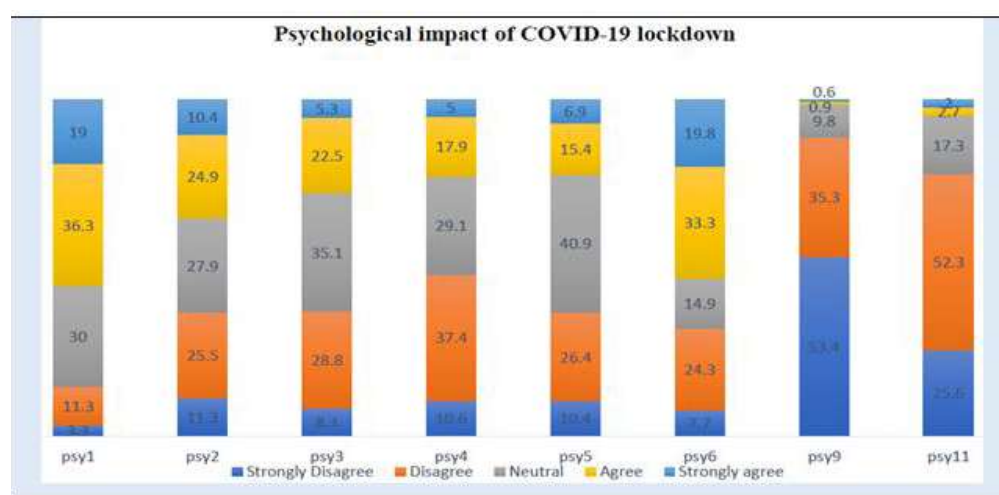
Exhibit-D below shows the correlation between economic situation, effect on daily life, and worries relating to study delays and levels of anxiety due to Covid-19 pandemic. Students worrying about the

economic situation, delay in studies, and effect on daily life were positively impacted whilst there's a negative association between social support and anxiety symptoms of college students due to Covid-19 pandemic.<sup>11</sup>

The study was conducted in Mauritius with the application of the 5-point Likert scale and Results are tabulated below as per Exhibit-E and Exhibit-F.<sup>12</sup>

A Likert scale consisting of a score from 1-5 was used to determine the impact of lockdown on medical students with the consideration of the effects of lockdown due to the Covid-19 pandemic and its impact on student's education and the psychological impact of Covid-19 pandemic related lockdown on college students.

As per Exhibit-E above, 40% of students agreed that they were not impacted negatively from their study perspectives (edu3), whilst 33.5% agree and 26.4% strongly agree to online classes being used as

**Exhibit-F: Covid-19 Lockdown and its Psychological Impact on students (%)**

Source: Banerjee *et al.* Nepal J Epidemiol. 2021;11(2):1006-1022.DOI:10.3126/nje.v11i2.36951

an effective and acceptable learning method over the more traditional methods of teaching (edu4).

The fifth bar (edu5) depicts that 32.7% of students disagree in terms of its appropriateness for online classes to continue whilst 38.9% of students disagree with an adaptation of online classes, 29.1% feel neutral in terms of adaptation to online teaching methods (edu6). Considering distraction for students from online learnings 39.2% disagree, 22.9% neutral and 9.7% strongly disagree (edu7).

By interpreting these results (edu8), the impact on students' clinical skills may weaken due to lack of exposure in hospital, 54.1% strongly agree and 36.8% of students agree. Students' future interaction in absence of real hospital visits (edu9), may impact their interface with their patients whereby 46.3% of students strongly agree and 40.7% agree.<sup>12</sup>

Exhibit-F above displays various psychological factors impacting students. Students feeling guilty regarding their level of productivity agreed by 36.3% and strongly agree by 19% during the lockdown period (psy1).

Students who experienced feelings of depression due to a new way of adapting to life and learning agree by 24.9% and neutral 27.9% (psy2). Managing time effectively felt neutral by 35.1% and disagree by 28.8% (psy3). With regards to lockdown giving the students an opportunity for module revision and to address weakness in subjects 37.4% of the students disagreed (psy4). When asked if lockdown had been a pleasurable experience 40.9% of students were neutral and 26.4% disagreed (psy5).

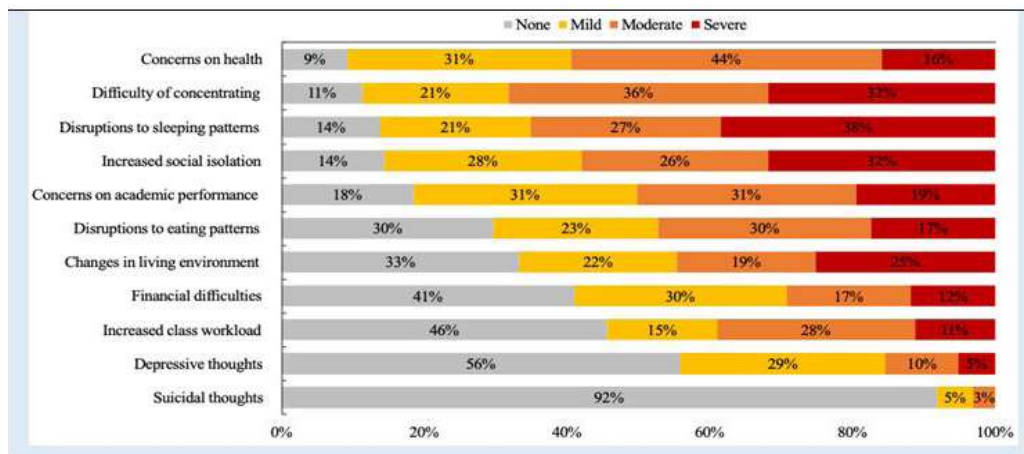
33.3% of students agreed to have kept a normal sleeping pattern during lockdown whilst 19.8%

strongly agreed (psy6). Delighted on choosing a medical career versus the Covid-19 pandemic effect they felt, 53.4% of students strongly disagree and 35.3% disagree that choosing this degree (psy9). Lastly, 52.3% of students disagree and 25.6% strongly disagree as the Covid-19 pandemic has inspired them to study more diligently to be part of the medical community.<sup>12</sup>

The study conducted for exposure to social media during the Covid-19 pandemic by Gao J, et al.<sup>14</sup> examined the prevalence of panic and health anxiety among college students and its relations with social media during the Covid-19 pandemic. The prevalence of panic and health anxiety was 17.2% and 24.3% respectively. It is essential to note that psychological interventions are required for college students during the COVID-19 pandemic.

According to another study for college students in China, the prevalence rates of probable acute stress amongst the participants was found to be 34.9%, anxiety 21.1%, and depression symptoms at 11.0%, and these three symptoms were expected to be comorbid in combination as 6.3%. Whilst comorbidity of acute stress and depressive symptoms at 5.5%, followed by depressive and anxiety symptoms 3.3%, and acute stress and anxiety symptoms at 0.9%.<sup>9</sup>

Exhibit-G below displays challenges to college students' mental health during Covid-19 concerning the various students' ratings in percentage on mental health aspects (mild, moderate, and severe) in an order of negative impacts. Students' answers to twelve questions relating to academic activities, health, and lifestyle were evaluated to understand the impact of various factors on students' mental

**Exhibit-G:** Covid-19 Mental health aspects in an order of negative impacts as rated by students'

Source: Son et al. (2020) J Med Internet Res 2020;22(9):e21279 doi: 10.2196/21279

health.

Disruption in sleep patterns, difficulty in concentrating, and social isolation were severely negatively impacted at 38%, 32%, and 32% respectively. Changes in living environment, academic performance concerns, and disruptions to eating patterns followed by concerns on health where the noted impact was severe at 25%, 19%, 17%, and 16% respectively.<sup>10</sup>

Other severe factors were at 12% or below. In terms of moderate impact factors, the top five were concerns on health, difficulty in concentrating, academic performance concerns, and disruptions to eating patterns followed by increased class workload at 44%, 36%, 31%, 30%, and 28% respectively. Indication of stress and anxiety increase because of Covid-19 pandemic was shown by 71%, for 20% it remained the same and 9% revealed decreased stress and anxiety levels, whilst at least 54% of participants indicated negative impacts.<sup>10</sup>

Based on the study conducted amongst 2111 young people with a history of mental health needs by the Government of the United Kingdom that showed what the impact of the Covid-19 pandemic on existing mental health issues was. Many respondents reported increased anxiety, sleeping problems, and panic. 32% reported that Covid-19 made their mental health much worse, 51% a bit worse, 9% no difference, 6% a bit better, and 1% much better. However, it is to be noted that 74% were still able to access some form of mental health support, whereas 26% were not able to access mental health support.<sup>15</sup>

### *Covid-19 pandemic in Mauritius context*

The Republic of Mauritius first detected cases of Covid-19 on the 18th of March 2020 and thus experienced its first wave of Covid-19, the second wave followed by beginning around the 5th of March 2021. Compared to the first wave, the school classes and examinations were maintained during the second wave. During wave 1 Ministry of Health and Wellness (MoHW) had decided upon the closure of all educational institutes ranging from Primary School, National Certificate of Education, Higher School Certificate as well Tertiary Colleges and Universities. During wave 2 however, according to the Ministry of Education, Tertiary Education, Science, and Technology school examinations were maintained and Sanitary protocols for the examination centers had been kept in place. Staggered school hours and resumption of classes, online classes, and distant learning were implemented.<sup>16</sup>

According to MoHW, Mauritius initiated the Covid-19 vaccination campaign program as one of the key strategies to control the impact and spread of Covid-19 infections. Along with fundamental communications relating to social distancing, frequent handwashing, and sanitization of frequently used places and public places, wearing of face masks covering mouth and nose were implemented as preventive infectious measures. Implemented along with the above measures were strategies for red zones, mass testing, contact tracing, and reporting of possible infectious cases. Additional preventive measures included the border control closure for neighboring countries, international expatriates returning home including visitors. Covid-19 is however still a matter of great concern and sustaining the above-mentioned efforts is crucial but requires improvements.<sup>17</sup>

**Exhibit-H:** Comparison of key indicators for wave-1 and wave-2 [Mauritius]

| Key Indicators                         | Wave 1:18 March to 26 April 2020 | Wave 2: 5 March to 3 June 2021 |
|----------------------------------------|----------------------------------|--------------------------------|
| Total number of local cases            | 241                              | 808                            |
| Total number of deaths due to COVID-19 | 10                               | 8 (7 local and 1 imported)     |
| Total number of PCR tests done         | 14550                            | 203534                         |
| Incidence rate                         | 1.68 per 10000 population        | 6.38 per 10000 population      |
| Case fatality rate                     | 4.15%                            | 0.87%                          |

**Source:** WHO (2021).<https://www.afro.who.int/publications/comparative-analysis-public-health-measures-implemented-related-covid-19-across-first>

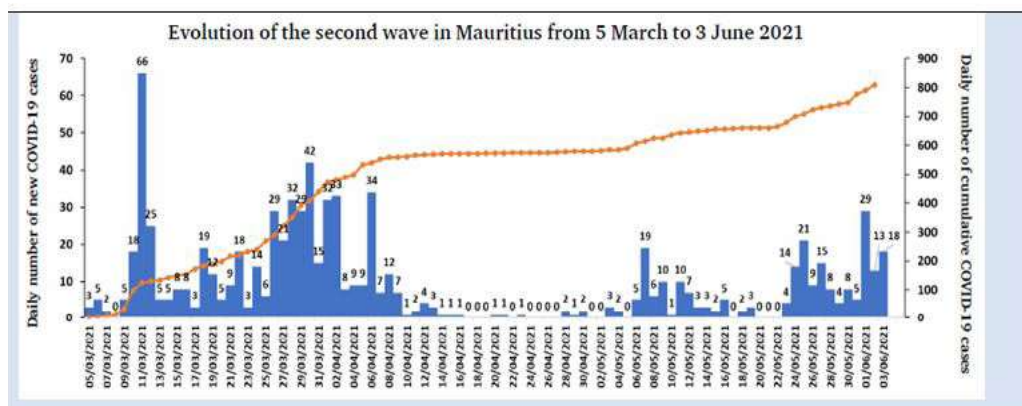
Exhibit-H below describes key indicators for Mauritius, the incidence rate for wave-2 is much higher than the wave-1 incidence rate, as well as several local cases are higher than wave-1. Mauritius implemented quick health measures including lockdown, strict sanitary measures, sanitary curfew.<sup>16</sup> Border closure implemented to contain further Covid-19 outbreak amongst the general population.<sup>18</sup>

Exhibit-I below describes wave-2 related Covid-19 infections. According to MoHW Vaccination became a key pillar in Mauritius' fight against Covid-19 and the Government was proactive in acquiring Covid-19 vaccines by securing 2000 doses via WHO's COVAX facility, On 8 January 2020, the Covid- 19 vaccination campaign was started. The campaign was halted due to wave-2 and restarted with the recruitment of more than 100 doctors and nurses, to work in the 15 vaccination centers and 5 mobile vaccination centers. Mauritius had a lower number of deaths in wave-2 and learnings from the key strategies which proved to be effective during the Covid-19 pandemic will assist Mauritius to better contain the spread of Covid-19 infections.<sup>16</sup>

### *Intervention strategies for mental health issues during Covid-19*

A proposition can be made to propose a multi-pronged and multi-stakeholder approach based on the experiences and evidence available from different case studies and research reviewed from various countries. The multi pronged approach should comprise of a helpline number for easy access to mental health support, strict control over misinformation in social media, provision of a variety of care services at all levels, financial support as viable from countries economic infrastructures point of view, and employment security to helpless groups including minorities, regulatory and legal provisions against discrimination and humiliation of health care workers and other forces involved in pandemic response. Frameworks are needed for involvements and recommendations for specific population groups, underdeveloped and developing countries based on the possible reasons associated with their enhanced risk to mental health problems including students.

Various researchers have described mental health effects on student's due to the Covid-19

**Exhibit-I:** Evolution of wave-2 and daily cumulative number of Covid-19 infections (Mauritius)

**Source;** WHO (2021). <https://www.afro.who.int/publications/comparative-analysis-public-health-measures-implemented-related-covid-19-across-first>

pandemic may be as a result of inimitable stressors like educational activities interruptions, concern about online classes and lack of technology, imposed lockdown resulting in lack of physical activities and disruptions to their education, social isolation, lack of college activities and impact on clinical and social interactions, impact on family income, assessment impact on their grades, threat relating to affordability of their future education and doubt about their future job security.<sup>19-21</sup> The concept of crisis communication is therefore what is needed to manage the mental health issues in the times of the Covid-19 pandemic.

The government will need to fully recognize the growing mental health impact and ensure that addressing this is a key element of their response. Availability of funding and resources for helplines, counseling, digital, virtual, posturized, and telephonic services deliveries via schools and universities including students who are incapable to access remote support, communication with students and their families regarding their wellbeing and mental health. Additional mental health support may include face to face therapeutic or emotional support, Covid-19 and mental health specific advice, practical information and advice related to the outbreak locally, and university education agenda and a way forward advisory relating to the resumption of classes, teaching schedule, etc.

## Discussion

With the use of a critical review in evaluating discussions and feedback from the consolidation of various reviews and discussions, gaps are identified. According to WHO the mental health has been considered an important component of overall health and wellbeing and one of the key factors of health policies globally. The studies conducted on college students' mental health due to the Covid-19 pandemic bring to light the effects and predicaments that educational organizations can address added to the ongoing issues relating to mental health.<sup>22</sup>

Various studies have shown diverse results regarding the association between social media use and its mental health impact on college students. The relationship is even more complex during the Covid-19 pandemic. Disproportionate social media use during the Covid-19 pandemic was interrelated with worse mental health outcomes. However, receiving more accurate updates on Covid-19 pandemic-related health information is correlated

with lower levels of psychological distress.<sup>23</sup>

For college students to predict psychological symptoms health risk communication is key as this will eliminate perception and understanding the risk will decrease panic.<sup>24</sup> Likewise, knowledge of the diagnosis of Covid-19 lessens the anxiety due to the Covid-19 pandemic. Awareness led to effective prevention measures to prevent infection and reduce panic and anxiety.<sup>23</sup>

It is important to note that college students with the improved social network are less likely to have anxiety symptoms.<sup>25</sup> It is further stated that students with well established learning groups at college might improve their psychological behaviors positively and encourage a positive environment which increases the social support and in turn lessens negative psychological symptoms and anxiety during the Covid-19 pandemic.<sup>26</sup>

Another study relating to resilience among college students showed 17% had moderate to severe depression, and 49% had burnout. The reason for the depression was found to be associated with students' inability to cope. Moreover, a greater risk of depression was associated with insufficient support from fellow medical students and family and friends.<sup>27</sup>

According to the study by the Government of the United Kingdom, relating to the impact on young people with mental health needs due to pandemic as Covid-19 lead to the closure of schools and universities which created uncertainty among the most students for education as well as future employment. Students faced various concerns relating to lost contact with friends, loss of safe and stable learning environment, loss of formal guidance and support from tutors, loss of structure that educational institute presents as well as assessment of their grades, home learning from practicality as well as inhouse safety and resources availability were rather aggravating factors to mental health issues that already existed.<sup>15</sup>

In this review, it is found that several psychological and Covid-19 pandemic related factors are linked with mental health issues for college students.<sup>28-30</sup> It includes, confirmed or suspected cases of infection in the community, this has a lesser impact than students who had family, relatives, or friends being infected on the risk relating to anxiety. Witnessing loved ones infected with Covid-19 leads to fear, pain, hardship, and even loss of life and as a result, students may also experience psychological suffering.<sup>9</sup>

Exhaustion is common in medical students,

and it increases as students progress from early year to college campus to the clinical and practical components seen in hospital.<sup>31</sup> Stress and exhaustion increase significantly in the clinical years being closer to graduation and increased workload due to final examinations as well as worries about post-graduation plans.<sup>32</sup> This is highlighted as a critical time in medical students' educational pathway, whereby relevant and effective support services to students can be more beneficial towards improving academic performance and preventing burnout and stress among college students.<sup>33</sup>

Research insights show that the impact of disruption in studies considering various impact factors as discussed above for students may lead to students having reduced motivation towards academic achievements, increased pressure due to autonomous learning, and hypothetically higher rates of dropout as direct consequences of pandemic related measures.<sup>34</sup>

## Conclusion

In conclusion, findings show there is a high prevalence of mental health problems, which are positively associated with frequent social media exposure, during the COVID-19 outbreak. These findings implicated the government's need to pay more attention to mental health among the general population and students while combating COVID-19. Governments worldwide have provided mental health services through varied channels including hotlines, online consultation, online courses, and outpatient consultation.<sup>35</sup> Fortunately, Mauritius MoHW has implemented key strategies and communicated likewise nationally to support the financial, social, economic, educational, and health care services.

Due to the long lasting pandemic situation and numerous measures such as lockdown and stay-at home orders, the COVID-19 pandemic brings negative impacts on higher education. The findings of this study highlight the urgent need to develop interventions and preventive strategies to address the mental health of college students. Government, professional organizations, civil society bodies, and other relevant stakeholders have come up with various measures in the context of mental health in a short period.

According to a study survey of college students around the world as derived from various case studies, acute stress, anxiety, and depressive symptoms are prevalent during the Covid-19 pandemic and may continue for a prolonged period.

Multiple epidemic and psychosocial factors, such as family members being infected, massive media exposure, low social support, senior year, and prior mental health problems were associated with increased risk of mental health problems among the students. However, there remains much to be learned about the psychological impacts facing students and what can be done to reduce their negative effects.

Psychosocial support and mental health services should be provided to those students at risk and need to build coping strategies as well as policies intended towards addressing mental health. It is evident from discussion and results as well that, government and educational institutes need to strengthen the mental health focus, intensify awareness programs and their importance during and after the Covid-19 pandemic.

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## Conflict of interest

The author declared no potential conflicts of interest concerning the research, authorship, and or publication of this assignment, provided the institution Anna Medical College has given written consent.

## Ethical standards and limitations of this review

The author declares that all procedures contributing to this work relating to the review of various case studies from available resources comply with the ethical standards of the relevant institution, publisher and it is as stipulated on the relevant URL for sourcing information.

The author has searched various information systems to collect review information and compiled results from medical journals, research papers, literature, and theoretical textbooks and this assignment gives us a detailed overview of the impact of the Covid-19 pandemic and its effects on student's mental health. However, the limitation of this review is various case studies have different time frames, different size sample groups, regional and geographical boundaries, and analysis

techniques, thus there could be generalization to the factors affecting and impact on student's mental health.

## References

1. Jalloh M. F., Li W., Bunnell R. E., Ethier K. A., O'Leary A., Hageman K. M., Sengeh P., Jalloh M. B., Morgan O., Hersey S., Marston B. J., Dafaie F., Redd J. T. Impact of Ebola experiences and risk perceptions on mental health in Sierra Leone, July 2015. *BMJ Global Health*, 3(2), e000471. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5873549/>.
2. World Health Organization. (2008). HIV/AIDS and mental health report by the Secretariat. Available from [https://apps.who.int/gb/archive/pdf\\_files/EB124/B124\\_6-en.pdf](https://apps.who.int/gb/archive/pdf_files/EB124/B124_6-en.pdf).
3. Clay J. M., Parker M. O. Alcohol use and misuse during the COVID-19 pandemic: a potential public health crisis? *The Lancet Public Health*, 5(5), e259. (2020). Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7195126/>.
4. Xiao, C. A novel approach of consultation on 2019 novel coronavirus (COVID-19)-Related psychological and mental problems: structured letter therapy. *Psychiatry* 7 (2), 175-176. (2020).
5. Duan, L. Psychological interventions for people affected by the COVID-19 epidemic. *The Lancet Psychiatry*. (2020).
6. Talevi D., Socci V., Carai M., Giulia Carnaghi G., Faleri S., Trebbi E., Di Bernardo A., Francesco Capelli F., Pacitti F. Article in *Rivista di Psichiatria*: 55(3): 137-144. June 2020. Mental health outcomes of the Covid-19 pandemic. Available from doi: 10.1708/3382.33569.
7. Mohindra R., Ravaki R., Suri V., Bhalla A., Singh S. M. Issues relevant to mental health promotion in frontline health care providers managing quarantined/isolated COVID19 patients. *Asian Journal of Psychiatry*, 51, 102084. (2020). Available from doi: 10.1016/j.ajp.2020.102084.
8. Roy A., Singh A., Mishra S., Chinnadurai A., Mitra A., Bakshi O. *Int J Soc Psychiatry*. 2021 Aug; 67(5): 587-600. Published online 2020. Available from doi: 10.1177/0020764020950769.
9. Ma Z., Zhao J., Li Y., Chen D., Wang T., Zhang Z., Chen Z., Yu Q., Jiang J., Fan F. Mental health problems and correlates among 746 217 college students during the coronavirus disease 2019 outbreak in China. *Epidemiology and Psychiatric Sciences* 29, e181, 1-10. Available from <https://doi.org/10.1017/S2045796020000931>.
10. Son C, Hegde S, Smith A, Wang X, Sasangohar F. Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *J Med Internet Res* 2020;22(9):e21279 Available from doi: 10.2196/21279.
11. Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., Zheng, J. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, Article 112984. Available from <https://doi.org/10.1016/j.psychres.2020.112934>.
12. Banerjee I, Robinson J, Mohabeer P, Kashyap A, Shukla A, Sathian B. COVID-19: Lockdown and its impact on medical students: A cross sectional study. *Nepal J Epidemiol*. 2021;11(2): 1006-1022. Available from doi: 10.3126/nje.v11i2.36951.
13. Fitzpatrick O, Biesma R, Conroy RM, McGarvey A. Prevalence and relationship between burnout and depression in our future doctors: a cross-sectional study in a cohort of preclinical and clinical medical students in Ireland. *BMJ Open* 2019 May 01;9(4):e023297. Available from doi: 10.1136/bmjopen-2018-23297.
14. Gao J, Zheng P, Jia Y, Chen H, Mao Y, Chen S, et al. Mental health problems and social media exposure during COVID-19 outbreak. *PLoS ONE* 15(4): e0231924. (2020). Available from <https://doi.org/10.1371/journal.pone.0231924>.
15. Youngminds. (2020). Coronavirus: Impact on young people with mental health needs. Available from [https://youngminds.org.uk/media/3708/coronavirus-report\\_march2020.pdf](https://youngminds.org.uk/media/3708/coronavirus-report_march2020.pdf).
16. World Health Organisation (2021). WHO Africa Publication-Mauritius. Available from [https://www.afro.who.int/publications/comparative-analysis-public-health-measures-implemented-related-covid-19-across-first-wave-\(2020\)-and-second-wave-\(2021\)](https://www.afro.who.int/publications/comparative-analysis-public-health-measures-implemented-related-covid-19-across-first-wave-(2020)-and-second-wave-(2021)).
17. Ministry of Health and Wellness - MoHW. (2021). Vaccination campaign Mauritius. Available from <https://publicnotice.govmu.org/publicnotice/?p=3783> [Accessed 29 November 2021].
18. Government of Mauritius (2021) Government of Mauritius. Quarantine Act 2020, the entry of aircraft and ships into Mauritius. Available from [https://gpd.govmu.org/HomeDownloadSection/26\\_Ext%20Ord\\_110321.pdf](https://gpd.govmu.org/HomeDownloadSection/26_Ext%20Ord_110321.pdf) [Accessed 30 November 2021].
19. Conrad R, Koire A, Pinder-Amaker S, Liu C. College student mental health risks during the COVID-19 pandemic: implications of campus relocation. *J Psychiatr Res*. 2021;136:117-26.
20. Liu CH, Pinder-Amaker S, Hahm HC, Chen JA. Priorities for addressing the impact of the COVID-19 pandemic on college student mental health. *J Am Coll Heal*. 2020;1-3.
21. Sankhi S, Marasine N. Impact of COVID-19 pandemic on mental health of the general population, students, and health care workers. *Europasian J Med Sci*. 2020;2(Covid-19 Special Issue):1-9. Available from <https://doi.org/10.46405/ejms.v2i2.131>.

22. Grubic N., Badovinac S., Johri A. (2020). Student mental health in the midst of the COVID-19 pandemic: A call for further research and immediate solutions. 2020:66:5:517-518. Available from <https://doi.org/10.1177/0020764020925108>.
23. Li M, Liu L, Yang Y, Wang Y, Yang X, Wu H Psychological Impact of Health Risk Communication and Social Media on College Students During the COVID-19 Pandemic: Cross-Sectional Study J Med Internet Res 2020;22(11):e20656 Available from doi: 10.2196/20656.
24. Schaller M, Park J, Kenrick D. Human evolution and social cognition. In: Oxford Handbook of Evolutionary Psychology. Oxford, UK: Oxford University Press; 2007.
25. Levula A, Harré M, Wilson A. The Association Between Social Network Factors with Depression and Anxiety at Different Life Stages. Community Mental Health J 2018 Aug;54(6):842-854.
26. Chang S, Lin Y, Lin C, Chang H, Chong PP. Promoting positive psychology using social networking sites: a study of new college entrants on Facebook. Int J Environ Res Public Health 2014 Apr 29;11(5):4652-4663 Available from <https://doi.org/10.3390/ijerph110504652>.
27. Thompson G., McBride RB, Hosford CC., Halaas G. (2016). Resilience Among Medical Students: The Role of Coping Style and Social Support. Teach Learn Med. 2016;28(2):174-82. Available from doi: 10.1080/10401334.2016.1146611. PMID: 27064719.
28. Torales, J., Higgins, M. O., Castaldelli-maia, J. M., Ventriglio, A. (2020). The outbreak of COVID-19 coronavirus and its impact on global mental health. International Journal of Social Psychiatry. Available from <https://doi.org/10.1177/0020764020915212>.
29. Unger K. Handbook on Supported Education: Providing Services for Students with Psychiatric Disabilities. Charleston, SC: Book Surge Publishing; 2007.
30. Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. et al. (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), Article 1729. Available from <https://doi.org/10.3390/ijerph17051729>.
31. Dyrbye L., West C., Satele D., et al. (2014). Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. Acad Med 2014;89:443-51. Available from doi:10.1097/ACM.0000000000000134.
32. Dahlin M., Joneborg N., Runeson B. (2005). Stress and depression among medical students: a cross-sectional study. Med Educ 2005;39:594-604. Available from doi:10.1111/j.1365-2929.2005.02176.x.
33. Lyndon M., Henning M., Alyami H, et al. Burnout, quality of life, motivation, and academic achievement among medical students: A person-oriented approach. Perspect Med Educ 2017;6:108-14. Available from doi:10.1007/s40037-017-0340-6.
34. Wickens, C. M. The academic and psychosocial impact of labor unions and strikes on university campuses. In Poulsen, M. E. (Ed.), Higher education: Teaching, internationalization, and student issues (pp. 107-133). (2011). Nova Scotia Publishers.
35. National Health Commission (2019) National Health Commission of the People's Republic of China. Guideline for psychological crisis intervention during 2019-nCoV. Available from [http://www.gov.cn/zhengce/zhengceku/2020-01/27/content\\_5472433.htm](http://www.gov.cn/zhengce/zhengceku/2020-01/27/content_5472433.htm). [accessed November 20, 2021].

