Stress in Students During COVID -19: Impact on Mental Well-Being

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ABSTRACTZ

The COVID-19 pandemic had brought about significant changes in every aspect of students' life. These changes caused major disruptions in their life creating anxiety, despair and stress. The present research aims to review previous literature on the stress of students during COVID-19 across the world and its impact on their mental wellbeing. The findings of the paper help us understand the social and emotional changes along with the coping strategies that have brought about significant changes during the Coronavirus pandemic, particularly in students pursuing higher education.

INTRODUCTION

Communicable diseases have existed since the beginning of the human kind, formation of communities enabled the transmission which led to epidemics such as malaria, tuberculosis, leprosy etc. In worst cases scenarios, the diseases spread across the borders of a country leading to a pandemic. The world faced similar adversities towards the end of 2019 when a number of patients diagnosed with pneumonia of unknown etiology emerged in the city of Wuhan, Hubei Province, Central China. The disease was found to be caused by the novel coronavirus, namely severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)(Li et al., 2020). The disease being highly transmissible and pathogenic viral infection, killed more than eighteen hundred and infected over seventy thousand individuals within the first fifty days of the epidemic(Shereen et al., 2020).

Historically, mental health was considered to be outside the realm of health promotion and disease prevention, however in 2000 the U.S. Centres for Disease Control and Prevention (CDC) acknowledged the importance of mental health and incorporated it into their program. This resulted in the acknowledgement of interconnectedness of mind and body, which implied that it was impossible to address physical health without addressing mental health (Safran, 2009).

The abrupt and drastic changes brought about by the pandemic since the year 2019 has manifested into a source of chronic stress which may lead to emotional and psychosomatic consequences.(Babicka-Wirkus et al.,2021). Students are generally vulnerable to stress (Hurst et al., 2012) which in the wake of the pandemic has worsened. (Son et al., 2020; X. Wang et al., 2020; Wasil et al., 2021;Yang et al., 2021;Schwartz et al., 2021). Hence to investigate the consequences of the pandemic, the review aims to understand stressors due to the pandemic and their contributing factors which has elevated the stress factor in students. The major aspect impacted in a student's life is worth considering in the study since it is known that every student is different and has interacted with different environmental and social factors, especially during the Covid times. Thus, the researchers also aim to understand the major coping strategies that have been most commonly used by students across the world.

Preexisting   **Stressors**

A large number of researches indicate that intimate relationships, financial difficulties and exhaustive responsibilities and roles are the main source of stress for college students. A study by Hurst et al. (2012) identified eight stressor themes in students. The themes included relationships: the relationship of the individual with family, peers, faculty and romantic relations were identified as stressors in the domain of relationship. Lack of resources: Lack of adequate time, money, support, skills and even technology and sleep were found as the contributing factors of stress in students. Expectancy: Trying to live up to expectancies set up by oneself or by others can induce stress in students. Academics: The academic stressors include general academic activities, exams, classes and studying. Environment: disruptive or hostile environment be it relatively benign to overtly aggressive, unfamiliar or international environment all contributes to stress in students. Other: This category includes career, extracurricular activities, health and personal appearance. Diversity: They also found evidence that a specific demographic also experiences

certain types of stresses for example stress experienced due to their race or ethnicity, being students with disabilities, being first generation college students and sexual orientation. Transition was also accounted as a stressors for students in university.

Additional Stressors due to pandemic

Taylor (2020) explained that COVID-19 has affected more people emotionally than physically. Previous research associated the prevalence of epidemics with the development of new stressors including fear and worry for oneself or loved ones, constraints on physical movement and social activities due to quarantine, and sudden and radical lifestyle changes (Son et al., 2020). The severity of COVID-19 has even forced many governments into implementing several mandatory restrictions onto their citizens. Although these restrictions were necessary for the prevention of the contagion, the lack of proper understanding of the nature of the risk faced by the people and prolonged lockdown has worsened the fear in their minds (Brooks et al., 2020). A study by Yang et al. (2021) explained that factors such as the shift of education to online mode, distance education became a new trend, changing the communication patterns between teachers and students, increased the isolation and independence of the student and a significant source of pressure for the students. According to an article by UNESCO (*Education: From Disruption to Recovery*, 2021) close to half of the world's students are still affected by partial or full school closure, and over 100 million additional children will fall below the minimum proficiency level of reading as a result of the health crisis. Research by Son et al.(2020) also revealed that in the wake of the pandemic 138 out of 195 public university students in the US showed increased stress and anxiety due to COVID-19. Van Lancker & Parolin, (2020) explained that the prolonged school closure could have detrimental social and health consequences for children living in poverty and are likely to intensify the existing inequalities. Research by Alexander et al. (2007) explained that even summer holidays increase the achievement gap between students coming from lower and upper socioeconomic status as learning might continue for children from higher income households, children from lower income households are likely to struggle to complete homework and online courses because of their precarious housing situations. Moreover the shift to online mode of education affected not only the poverty driven students, it also had an overall negative psychosocial and physical effects. A descriptive cross-sectional design was conducted to investigate the relationship between. Research findings(Battashi et al., 2020) also suggest that prolonged use of smartphones exposes users to a

range of negative physical and psychosocial experiences. Dry eyes, carpal tunnel syndrome, repetitive strain injury, wrist, neck, back and shoulder pain, migraine headaches and thumb, index and middle finger pain, and phantom pocket vibration syndrome, are negative physical signs connected with smartphone addiction.

Furthermore, in a study by Sprang and Silman (2013) explained that nearly one-third of the children who experienced isolation or quarantine demonstrated symptoms that met the overall criteria for PTSD, this is because disease containment measures such as quarantine and isolation can be traumatising to a significant portion of children and parents warenting specific response strategies to address the behavioural health needs and disease containment measures. Adding on to it, studies(Bellos et al., 2020) suggest that overexposure to COVID 19 related news through media was also found to be associated with a higher depressive symptomatology.

Coping strategies

According to APA, coping strategy is an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation or in modifying one's reaction to such a situation. Coping strategies typically involve a conscious and direct approach to problems, in contrast to defence mechanisms. Lazarus and Folkman (1984) defined coping as a process-oriented phenomenon prone to constant change to meet specific demands and conflicts posed by a situation; it serves as a strategy to either manage or alter the problem causing the distress and coping that is directed at regulating emotional response to the problem.

Babicka-Wirkus et al. (2021) conducted a study in Poland and identified fourteen coping strategies namely, active coping, planning, acceptance, humour, religious Coping, seeking emotional Support, seeking instrumental support, self-distraction, denial, venting of emotions, substance use, behavioural disengagement and self blame. However, results suggested university students majorly used acceptance, planning and seeking emotional support to deal with stress during coronavirus pandemic, they are:

Acceptance : Acceptance is an adaptation on encountering unchangeable negative events by facing reality even if it does not fit one's expectations or desires, and the willingness to deal with this reality nevertheless

(Nakamura & Orth, 2005). For example: Due to lockdown we are forced to stay at home, instead of dwelling on that; a situation which cannot be changed, we can accept the fact that it is now a new reality and can work towards making the best out of the situation as much as we can.

Planning: Planning is a prospective self regulatory strategy to link concrete responses to future situations(Sniehotta et al., 2005). Planning makes it easier to identify situational cues, making it easier to perform to the planned responses during critical situations. For example: quarantine has heavily affected our daily routine, which can sometimes affect our mental health. By planning out our days we can give a structure to our day. Successful execution of the plans will also act as small achievements which can be motivating for the future.

Seeking emotional support: Oftentimes it can be challenging to face stressful events by oneself. In those situations seeking external support can immensely benefit to eliminate the stressors. For example: Sometimes accepting the situations or planning does not help us to get out of a negative mental state, in those times seeking emotional support, be it a friend, family or professional, might be a better idea than trying to handle a hard situation alone.

In a research from Bellos et al.(2020), conducted in Greece found that Positive strategies used by adults such as acceptance, humour, planning, positive reframing, and active coping. Supportive or distractive strategies included distraction, venting, emotional support, and instrumental support. Along with acceptance and planning, humour was also found to be common amongst coping strategies in both genders. Furthermore, Logel et al.(2021) found that maintaining social connections, trying out new activities and developing a satisfying routine was amongst the coping strategies used in students at Toronto.

METHODOLOGY

Eligibility criteria

All the studies and research papers selected were peer reviewed from 2020-2021 in English language. The demographics of both school and university students were considered. The studies were included regardless of the location of the study if it was related to mental health of school and college students. The eligibility consisted of experimental studies, mainly cross-sectional studies were chosen with one longitudinal study, both quantitative (descriptive, correlational, experimental and quasi - experimental) and qualitative experiments were included. All the doubles were excluded, only papers with peer review and open access were included in the study.

Information sources:

All the studies were selected from the following electronic databases: Pubmed, Sage journals, Google scholar, Research Gate, Liebertpub, and etc. APA citation generator was used in order to cite the references appropriately according to APA 7th edition.

Search strategies

A systematic review was conducted. The relevance of studies was identified using the following key search terms: (1) COVID19 stressors, (2) student's stress, (3) student's coping strategies in pandemic (4) mental well being, (5) impact on mental health, (6) Psychological stressors, and (7) academic impact. The references of the studies included in the articles found through electronic databases were also reviewed in order to find more relevant studies and strong research back up.

Data collection process:

The data extraction was performed by three student researchers. A total of 109 papers were collected and were identified if they fitted in the selection criteria. The first step performed by the student researchers while finding studies were to analyse the title and abstract of the research paper. The title and abstract was analysed according to the selection criteria considered. After looking into various studies with different findings, a rationale was decided amongst the student researchers. Later, the articles and studies were

grouped into categories according to their findings in order to articulate a better review literature. Articles that were relevant were reviewed completely again independently by all three researchers. Small remarks such as the demographics of the study and year published were noted. The feedback was provided to the students researchers by the supervisor. Articles were excluded on the premise of population, all the research conducted on population other than students were all excluded. Articles were also removed if the results were inconclusive or the articles were not research articles.

RESULTS:

A pool of 109 articles were selected by analysing the title and abstract from different databases. A total of 26 articles were screened by excluding articles on the premise of population (articles in which experiments are not conducted on students were excluded), articles (articles which are not research were excluded) and inconclusive results. The list was further examined for doubles, open access and peer review and 14 articles were finalised for the review.

Figure 1.

Flowchart of the screening process.
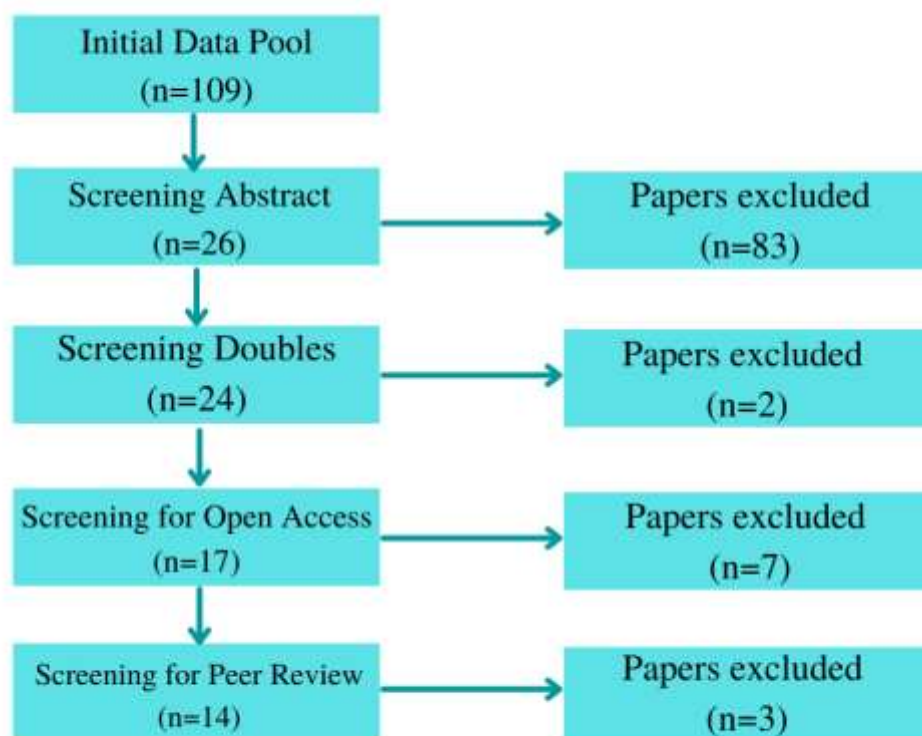
Note. Flow diagram representing the selection process for the articles selected.

All the studies included are in english language and large number of researches included in this research were conducted on population from China(n=4) and United States (n=3), others being Canada(n=1),Germany(n=1), Oman (n=1), Philippines(n=1), Poland(n=1), Iceland(n=1) and Finland(n=1) (Figure 2). Table 1 summarises all the main characteristics of the 14 finalised studies.

Figure 2

Geo Chart of the countries of the sample included in finalized articles.
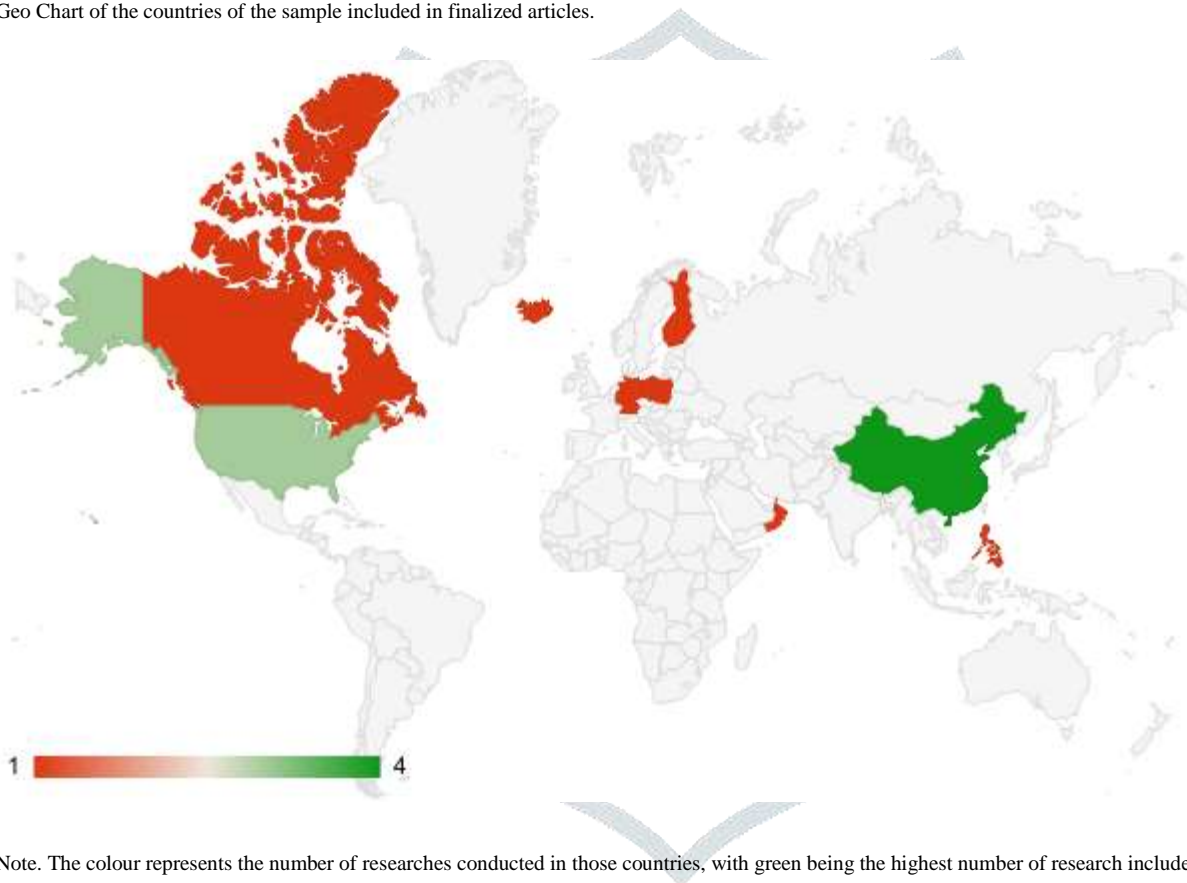
Note. The colour represents the number of researches conducted in those countries, with green being the highest number of research included from a specific

country(n=4) and red being the lowest number of research included from a specific country(n=1). White area implies no research was included from there and

mild colours implies any number from 1-4.

Table 1

Researcher/s	Results
(Babicka-Wirkus et al., 2021; Baloran, 2020;Son et al., 2020; Sveinsdóttir et al., 2021;Wasil et al., 2021)	Widely used coping strategies are acceptance, planning, seeking emotional support, following protective measures and quarantining.
(Babicka-Wirkus et al., 2021; Wang & Zhao, 2020; X. Wang et al.2020)	Age, gender and place of residence affect the degree of experienced stress and the choice of coping strategies.
(Hong et al., 2021; Jiang, 2021)	Social media indirectly assessed stress
(Schwartz et al., 2021; Salmela-Aro et al.2021; Son et al., 2020; X. Wang et al., 2020;Wasil et al., 2021; Yang et al., 2021)	Worry about their own health and health of loved ones, difficulty concentration, sleeping habits, social relation/ social isolation, academic performance, eating patterns, change in living environment, financial difficulties, class workload, depressive thoughts and suicidal thoughts.
(Jiang, 2021; Baloran, 2020; Malik & Javed, 2021;Matos Fialho et al., 2021; Salmela-Aro et al.2021; X. Wang et al., 2020)	Switching the mode of teaching (physical to remote or semi remote mode of teaching)

Stressors and contributing factors

Six papers reported that the major stressors during the pandemic are academics, health concerns, isolation, suicidal and depressive thoughts, and changes in lifestyle, eating and sleeping habits(Son et al., 2020; X. Wang et al., 2020; Wasil et al., 2021;Yang et al., 2021;Schwartz et al., 2021). Students were reported to have experienced high anxiety regarding their academics. Significant distress regarding successful completion of their academic year was also reported however, better mental well being suggested higher confidence about completing the semester (Matos Fialho et al., 2021.; Baloran, 2020; Jiang, 2021; Schwartz et al., 2021; Matos Fialho et al., 2021).it was also reported there was a significant difference in the levels of stress experiences among different genders and majors(Wang & Zhao,2020; Schwartz et al., 2021). X. Wang et al. (2020) found that some students reported experiencing the same levels of stress as before, moreover some reported their stress decreasing during the pandemic, which they speculated might be due to the fact that now students can save their time(e.g. Travelling) and flexibility to rewatch recorded lectures.It was reported that students experienced perceived stress due to the significant increase of the workload due to the changes in the teaching mode. This has also resulted in slight decline of the academic well being among the early and middle adolescent students. (Matos Fialho et al., 2021; Malik & Javed, 2021;Salmela-Aro et al., 2021). Salmela-Aro et al. (2021) also observed the occurrence of polarisation, students with different levels of mental well being experienced similar levels of engagement and burnout, thus reporting either well being or ill being. This may be because increasing study-related well-being were reflected by experiences of curiosity, grit or academic buoyancy, whereas decreasing well-being are more strongly linked with social factors such as social engagement, loneliness, and belongingness. The variability may also be dependent on the students' perceived stress, support and education level(Sveinsdóttir et al., 2021). Social media was another stressor that was linked with psychological distress, frequent exposure and rumination can cause anxiety(Jiang, 2021; Hong et al., 2021).

Coping Strategies

Three studies reported that most common coping strategies are acceptance, self management, seeking support from others (community, family and friends), health care services (Babicka-Wirkus et al., 2021; Son et al., 2020;X. Wang et al., 2020). Strict personal protective measures like wearing masks, sanitising and quarantining also helped against anxiety related to the contagion of the COVID-19 virus (Baloran,

2020). However, factors like age, gender and place of residence heavily influence the choice of coping strategies used(Babicka-Wirkus et al., 2021).Multiple prevention and control measures focusing on college students may lead them to have different degrees of stress and health problems.(Yang et al., 2021). Perceived family support was found to decrease perceived stress and increase academic performance (Malik & Javed, 2021) Better study conditions was another factor that was found to be associated with few depressive symptoms.(Matos Fialho et al., 2021).

Wasil et al. (2021) reported that behavioural activation activities such as physical activity, going outside, social activities and routine, and social support from friends, family, community etc are not only common but also effective coping strategies.

DISCUSSION

The review literature talks about how the pandemic has brought about several changes in the life of students. Student population in particular is in focus since even before the pandemic students were dealing with mental health disorders. (Auerbach & Mortier, 2018,). Schwartz et al,2021 and Auerbach & Mortier,2018 both suggest that female and older adolescents students have experienced higher levels of stress and anxiety as compared to male students. Aslan et al, 2020, Suggests that perceived stress has a positive correlation to the negative perception regarding the impact of Covid-19 on the students overall well being.

Our review suggests that higher levels of stress, anxiety and depressive symptoms among university students during the pandemic were found in China, especially in the city of Wuhan (Jiang,2021; Wang &Zhao, 2020). Apart from China, students from universities in the Philippines and United states also reported considerable increase in depressive symptoms and anxiety related to health and academics (Baloran,2020; Son et al,2020; X.Wang et al.,2020). A major stressor that was observed in college students was the exposure to social media. When students were exposed to stressful news related to covid19, it made them feel anxious, stressful and fearful of the situation. Thus, social media exposure led to psychological distress in students (Jiang, 2021 & Hong et al 2021). Another common stressor studied by Son et al.,2020 & Fritiyana et al., 2021 was the factor of social isolation during the pandemic. Being away from friends

and losing upon face to face communication also contributed to student stress which led to depressive thought patterns. Research findings (Battashi et al., 2020; Sansone & Sansone, 2013) also speaks that increase in the use of smartphone and digital means have impacted adolescent students both psychologically and physically. Psychological impact such as the urge to respond to the text messages and notifications led to an increase in stress levels. It also faded boundaries between work and personal life. Physical impacts such as dry eyes, migraine and headaches, pain in neck, wrist, back and shoulder was majorly reported. To sum up, we can say that the shift of the education system to online mode and digital communication itself is the root cause of many stressors to the students in terms of emotional and academic stress.

It was observed that college students have faced more stress and mental disturbance than middle school or high school students. A possible reason for that could be that college students entering young adulthood have more financial, social and career responsibilities. Out of all, medical students were most affected out of all courses since medical courses are one of the most practical courses across the world. Students had to compromise upon their internships and training.

Since the student population has gone through psychological distress globally, this review also analyses the common coping strategies acquired by students across the world to get through tough times. Research findings (Babicka-Wirkus et al.,2021 & X.wang et al.,2020) suggest that the most common coping strategies secured by students are Acceptance, planning and seeking emotional support from the community(friends, family and professionals). Gender differences in adoption of coping strategies was also observed. Girls tend to seek emotional support as a means of coping whereas boys use humour to cope with stressful situations. In terms of academics, it was noted that female students experience more stress than male students.

Coronavirus is an ongoing phenomenon with a myriad of researches occurring everyday, moreover there is no one time solution to stress as people are exposed to stressful situations everyday. Furthermore, although a number of coping strategies were suggested, there isn't any sufficient longitudinal research to prove that they work over time. The papers included in the review are rarely in the Indian context. There was not enough data on the decline of the student's academic quality during online learning. The research also lacked socio economic aspects of the students during the pandemic. Hence for future studies, these can be an objective for research. Adding on to it, there is a scope to explore how the shift to physical mode after

two years of virtual learning would again affect the performance of the students. The impact of the same on a student's mental well being could again be examined in future research.

CONCLUSION

The abrupt and drastic changes brought about by the pandemic since the year 2019 has manifested into a source of chronic stress which may lead to emotional and psychosomatic consequences. The articles in our study were screened by excluding articles on the premise of population (articles in which experiments are not conducted on students were excluded), articles (articles which are not research were excluded) and inconclusive results. The list was further examined for doubles, open access and peer review. Out of the initial 109 articles only 14 articles were finalised for the review. The recent findings help to comprehend the social and emotional changes brought on by the coronavirus pandemic, particularly in higher education. In this research we found that the students are generally vulnerable to stress, which in the wake of the pandemic has worsened. Recent studies suggests that the major stressors during the pandemic are academics, health concerns, isolation, suicidal and depressive thoughts, and changes in lifestyle, eating and sleeping habits. Students were reported to have experienced high anxiety regarding their academics. Social media was another stressor that was linked with psychological distress, frequent exposure and rumination can cause anxiety. Some studies reported that the most common coping strategies are acceptance, self management, seeking support from others (community, family and friends), and health care services. Strict personal protective measures like wearing masks, sanitising and quarantining also helped against anxiety related to the contagion of the COVID-19 virus. However, factors like age, gender and place of residence heavily influence the choice of coping strategies used.

As a result, it is suggested that university staff pay more attention and monitor the needs of the students during a pandemic. The counselling centre of the university could play an efficient role in catering the mental well being of the students. Stress is a broad topic and there is no one way of coping with it, everyday new research surfaces in quest to understand the phenomenon and find the best way to help people out of this ordeal.

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