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# **Nursing students' burnout, stress, and coping during the COVID-19 Pandemic: A systematic review**

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**Abstract---**Nursing students are not immune to the stress that comes with being a student nurse. Despite the fact that there is a lot of literature on the issue, there has been little attention paid to stress in student nurses. This study examined a number of scientific papers on nursing student burnout, stress, and coping techniques. This was done through the use of a systematic review and the collection of publications. This systematic study relied on the databases CINAHL, PubMed, Medline, and Google Scholar. These databases were selected for bibliographic information for publications on the study topic: burnout syndrome, stress, and coping skills, all of which were considered. Searches in English, during the previous two years (2020 & 2021). This systematic review revealed that nursing students were experiencing moderate to severe stress as a result of a shift in the way they were taught, a lack of clinical skills, and a concern of getting COVID 19. Nursing students, on the other hand, dealt with stress in a variety of ways. The review findings might help nursing educators build stress management strategies that are both scientifically verified and culturally suitable for their students.

**Keywords---**COVID-19, Nursing Students, Pandemic, Burnout, Stress, Coping.

**Introduction**

In March 2020, as in the wake of the lockdown 1.6 billion students education was affected, and they were not able to go to college in 2020. The introduction of electronic Learning Management Systems (LMS) in schools and colleges has been made mandatory. Students are required to own their education even though they

interact with their teachers via internet channels. People who were unhappy were doing so because of the fears of pandemics as well as personal transformations (Data.europe.eu. 2020; Pokhrel and Chhetri, 2020; Lis et al. in 2020).

Many studies have been conducted to study the impact of COVID-19 on nurses' health and the repercussions for the students as well as their families. The research was conducted in various locations across the globe. A variety of significant study paths were found. Concerning health-related issues and challenges the primary items that were examined included anxiety, stress and depression, among other factors. The study found that once COVID-19 was in the process of spreading, students across the globe became more scared and depressed, and less joyful (Korkmaz and Toraman in 2020; Fujiwara, 2020; Ahmed, 2022; Li et al., 2021 Ye et al., 2020).

People or groups are not capable of managing external or internal pressures or a mixture of both, either when they are on their own and in a group setting. According to the American Psychological Association. When they attend schools, nursing students can be under a number of pressures. Nursing students may be subject to many different kinds of stress. Although work and school obligations are the most common however, there are many other types of stress. When students are in school, they must to perform a lot of assignments, exams and other assignments. Another cause of stress for nursing students working in the clinical environment is the feeling that they do not have the appropriate professional competencies or are not sufficiently knowledgeable regarding the patient's diagnoses medical histories, diagnoses, or the treatment options for Covid 19 illness (AlAteeq et al., 2020; Hoyt et al. 2021 Aslan as well. in 2020).

Second, research on the causes of stress can be described. People must consider a range of factors, including anxiety about loneliness, job prospects, and their educational prospects. According to one study being diagnosed with COVID-19 in the field, and not receiving education on the prevention of COVID-19 can be a significant factor in nursing students their performance. This is due to the fact that nursing students face lots of pressure because of their roles as caregivers to sick patients (Thai et al., 2021; Aslan et al. 2021; Chhetri et al., 2021).

Nursing Students who take online nursing courses often complain about their inability to focus on discussions in class, complete homework on time, and adhere to deadlines for academics. Fear of not getting adequate knowledge while earning an education via distance learning could negatively impact the prospects of students for employment when they graduate. These traits, the study concludes, could cause stress for students to be higher (Bourion-Bedes et al., 2021, Abram Andersen. 2021, Petrides 2021).

The third study on the issue of the effects of burnout on students were discussed. Students were found to be more likely to burnout because of their self-evaluation and perfectionism, the need for help in managing their time, and an absence of encouragement of their educators. Burnout Syndrome is a chronic condition of stress marked by increased anxieties. It is characterized by a lot of emotional exhaustion as well as depersonalization in the workplace, however there is a lack of professional effectiveness. Stress can be detrimental to the

academic performance of nursing students due to the sheer volume of work they have to complete and the pressure to do effectively at the classroom. Nursing students working in health care settings suffer an increased amount of stress that can increase their anxiety (Woods 2021, Shafiq 2021, Ejdays 2021).

Strategies for coping that people can utilize to build their resilience to challenges. When faced with a challenging circumstance, people may resort to coping mechanisms triggered by an issue or emotional. Problem-solving is the most commonly used method for stress management among students, while the avoidance technique is not the most frequently utilized strategy for stress management among nursing students. It is among the students' strategies for coping to deal with COVID-19 and they have demonstrated remarkable resilience in dealing with it.

### **Purpose of the study**

The goal of this investigation was to find out if research was conducted on how nursing students responded to burnout, stress and other problems during the COVID-19 outbreak.

### **Methods**

This in-depth review was conducted in accordance with PRISMA principles. It has standards for reporting systematic reviews and meta-analyses that are supported by evidence. PRISMA offers a framework for researchers to ensure the integrity and correctness of systematic reviews and meta-analyses that are published (Liberati et al., 2009).

### **Strategy for Search**

Four databases on the internet, CINAHL, PubMed, Medline, Google Scholar, were selected for this comprehensive review. The databases selected include the bibliographic details of articles that cover the topic of study Burnout syndrome Stress and Coping strategies. A pair of members from the research team scoured the databases selected in December 2021. First, the term "nursing Students, stress, burnout syndrome, coping strategies" were searched for to locate the MeSH phrases on PubMed. The command line that was used when the search on PubMed is ("Nursing students"[Mesh[Mesh]]) and "Burnout, "[Mesh]) and "Coping strategies" [Majr]. The restrictions on searching included English language journal, scholarly journals, and two years of publications (2020 and 2021).

### **Keywords for Search**

Articles were considered included if (1) the principal goal was to investigate burnout, stress and coping strategies in nursing students, and (2) articles were published within the English language (3) released from 2020 and beyond.

## Search results

The initial search revealed the publication of two hundred sixty-seven (267) papers that were relevant to the review. According to the eligibility criteria the abstracts and titles were scrutinized and compared against the inclusion criteria, which resulted at eighty-three (83) articles. After reviewing the methodology of the papers seventeen (17) were selected as important to our review.

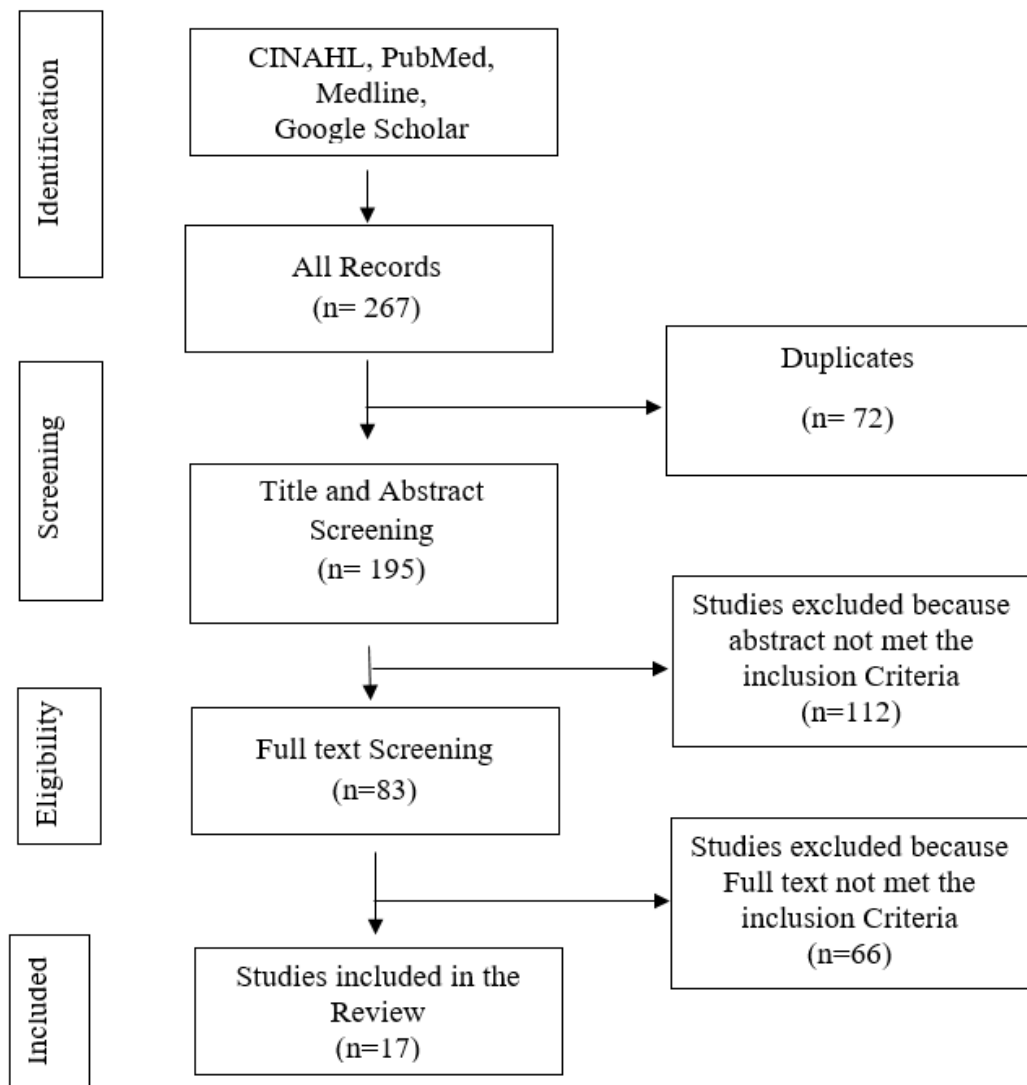


Fig 1: Prisma Flow Diagram

## Assessment of quality

To assess the credibility, rigour and methodological validity of the articles included by comparing them to the twelve (12)-item checklist created in

collaboration with the Center for Evidence-Based Medicine. The authors calculated the quality score of 0, 1, NA and NEI based on this process (not enough data). Every research study falls into three categories: medium, high medium or low (high medium, low, and high low) (Hafsteinsdottir et al., 2017).

### **Data extraction**

The data gathered from the research comprised: the authors names, the publication year and the country, as well as the size of the sample/sampling technique as well as the research methodology and the most important results were all derived directly from the research's outcomes and findings. The authors addressed any differences regarding the quality evaluation results by debating each aspect in depth before coming to an agreement on the overall. Since there was a wide range in the research methods, design and methods for data collection An inductive thematic analysis that was based on the research by Clarke as well as Braun was applied to determine the most important themes. The following six steps were employed to carry out the analysis: familiarization with the data, development of initial codes; identification of themes; examination of themes; identification as well as labeling of the themes and the writing of the report. Every participant in the research team discussed, re-examined and agreed on the overarching themes identified. The following three (3) topics emerged during the study including levels of stress and burnout factors, stress triggers, and strategies for coping.

### **Results**

The review's first section provides a summary of the information discovered during the research process and the sources chosen to be reviewed. The review's methodology is explained and the main conclusions and the most significant issues that were identified from seventeen papers.

### **Specifications in the Reviewed Studies**

Studies using cross-sections, mixed-methods as well as observational studies were all employed as investigative techniques during the review of research. The findings of the study were more applicable to other studies in nursing due to the sample of this study, which is comprised mainly student nurses. In addition, the study subjects hail from a broad variety of locations which include both advanced and emerging healthcare systems. In addition to India as well as Turkey, Saudi Arabia and Spain were represented in addition to those from the United States, Israel, China and Jordan.

### **Theme 1. Stress levels and Burnout**

Six articles were published, and the authors focused on the stress and exhaustion of nursing students were during the time of pandemic. Stress perception mental health, stress, and perceived support contributed over half of the variations in the level of personal burning out experienced by students who participated in this study as per the study from 1044 students in the nursing field. The study also found that the students' experiences with stress education, support, and stress

were the reason for 40% of variance regarding their burnout. The level of physical health and education of nursing students accounted for about 6% of the variance in the level of burnout among their students, while other factors contributed to 9 % of the variance.

In a cross-sectional study conducted at 14 Turkish institutions, 56 % participants were female. The three types of tests employed in this study were the Perceived Stress Scale (PSS-10), the Physical Activity Scale (PA), and the Sociodemographic Questionnaire. The moderate anxiety, and life dissatisfaction among students were all high. Generalized anxiety disorder (GAD), which affects more than half of students, or depression (52%).

Thirdly, the study looked at the impact of the COVID-19 pandemic the psychological wellbeing of Bangladeshi students, particularly their attitudes and perceptions of the outbreak. Nursing students were invited to take part in an online cross-sectional study. Based on the results of the survey, 26.66 % and 61.97 % of the respondents respectively, had experienced moderate to severe anxiety symptoms and 57.05 % reported having mild to severe symptoms of stress. Based on an analysis of multivariate logistic regression the age of students and gender, income of the family along with the place of residence, as well as family size were all connected with mental health issues. Researchers discovered that negative attitudes towards the effects of the pandemic on daily activities and mental health, as well as disturbances in health care, physical health problems and COVID-19-like symptoms were all related to low mental health.

## **Theme 2: Stress Triggers**

Five articles dealt with research on stress-related factors for nurses during Covid 19 Pandemic. With 1116 students of 13 nurse schools from Nepal an investigation of cross-sectional nature was conducted. The main goal of the study was to assess the effect of online learning on students in nursing during the COVID-19 epidemic across the United States. Based on the findings of the study that a lot of students' online courses were disrupted because of technological problems that have emerged when higher education institutions started offering online courses. 63 % of nursing students reported experiencing issues in obtaining the power. According to the study 66 % of nursing students reported problems with their internet connection, while only 64.4 % reported having internet access at home to take online courses. Another study that was conducted cross-sectionally in Israel focused on how 244 pupils from Ashkelon Academic College regarding the COVID-19 epidemic. Based on the findings of the study nursing students were experiencing higher levels of anxiety because of the challenges inherent in the distance learning environment.

Another study that was cross-sectional discovered that respondents felt as stressed and less attentive. The study interviewed 662 nursing students from Turkey to assess their attitude towards the COVID-19 epidemic and their stress levels. The study revealed that nurses experienced some amounts of stress. However, students who had been previously assessed reported higher levels of stress. Nursing students were worried about their practice in the clinic

and their lack of clinical expertise in the midst of the pandemic, since they were compelled to quit the college and study via online learning.

### Theme 3. Strategies for coping

Six articles focused on research into coping strategies for nursing students during the Covid 19 Pandemic. The cross-sectional study, which was carried out with 244 students in nursing, discovered that there was a significant amount of anxiety among nurses in general, and not just due to the illness itself as well as the interruption of their everyday life, financial challenges as well as the time they spend away from family and friends and the new model of education being conducted online through remote learning. The study revealed that nurses that maintained an optimistic mindset in seeking information and communicating with their peers had better mental well-being.

Only 2.6% of nursing students in a cross-sectional research of 38 participants reported moderate stress, whereas 97 % reported moderate stress and the majority reported using moderate coping mechanisms (97.4%). In this study, there was no statistically significant relationship between participants' coping mechanisms and their emotional stress.

Table 1: Summary of Literatures studied and Quality score

Author year, Country	Study Design	sampling methods and sample size	Instruments used	Principal Findings	Quality Score
Valiuniene et al. (2021) Poland, Turkey and India	Cross-sectional design	Convenient Sampling Technique, N=1097, Nursing Students	Psychological stress test (PSM-9), Copenhagen Burnout inventory	There was a moderate relationship between burnout and stress ( $r=0.581$ , $p=0.001$ ). An moderately positive correlation ( $r = 0.500$ , $P = 0.001$ ) is observed between exhaustion in students and their overall wellbeing.	5 **
Sveinsdottir et al. (2021) Iceland	Cross-sectional design	Convenient Sampling Technique, N=1044, Nursing Students	Copenhagen Burnout Inventory	Stress as well as mental health support explain 51% variance in burnout levels of students. In addition, students' reports of stress as well as support levels predicted 42 % of their burnout adversity. It was found that burnout from personal	6 **

				experiences was positively related to the academic stress ( $r = 0.61$ ) collaborating with other students ( $r = 0.222$ , $p 0.001$ ). The academic burnout also was associated positively with burnout when it came to working with other students ( $r = 0.343$ and $p 0.001$ ).	
Aslan et al. (2020), Turkey	Cross-sectional design	Purposive sampling, N= 358 Nursing Students	Perceived stress Scale (PSS-10),	Physically inactive and female students were more likely to have higher PSS-10 scores, suggesting high levels of stress moderate generalized anxiety and low satisfaction with their lives.	6 **
Savitsky et al. (2020) Israel	Cross-sectional design	Convenient Sampling, N=244, Nursing Students	Coping Behavior Questionnaire	By utilizing factor analysis, variable rotation and an unlimited quantity of variables. Scores for describing strategies for coping were developed. Self-esteem, seeking information and guidance, mental distancing more spiritual than science-based sources of help, and Humour was all mentioned as effective ways to cope.	5 **
Aslan & Pekince (2021), Turkey	Cross-sectional design	Simple random sampling N=662 Nursing Students	Perceived Stress Scale	A PSS scores averaged 31.69 with SD of 6.91 This suggests that the pupils were not stressed to the extent they are. The gender and age were also shown to be significant differences in PSS scores ( $P < 0.001$ ). The study also revealed it was clear that news stories, fears of infection	9 ***



				as well as the curfew were the primary stressors for the pupils.	
Husky et al. (2020), France	Cross-sectional design	Convenient Sampling, N=291, Students	Not Mentioned	The results showed that students experience an increased risk of having severe overall stress (27.6 % against 15.5 %, $X^2=7.67$ , $p=.031$ ) and stress levels regarding the health of their loved relatives (32.5 % as compared to 16.3 %, $X^2(1) = 7.67$ , $p = .006$ ).	4 *
Sayed et al. (2022), Bangladesh	Cross-sectional design	Convenient Sampling, N= 689 Students,	The Anxiety and Stress Scale (DASS 21)	Around 26.66 % and 61.97 % of students reported moderate to severe depression and anxiety symptoms respectively. In addition, 57.05 % reported mild to severe levels of stress.	6 **
Hamadi et al. (2021), USA	Repeated measures design	Convenient Sampling, N= 130 Students	Perceived The Stress Scale (PSS) Coping Behavior Inventory (CBI)	Prior to COVID-19 the stress score stood at 1.32 (low tension) as well as 1.95 (moderate tension) in COVID 19.	10 ***
Tiwari et al. (2021), India	A cross-sectional design	Purposive sample technique, N=38	Perceived Stress Scale as well as the Brief Coping Scale	Based on the findings that the vast majority of pupils (92.1 %) were aged between 19 to 25. The study revealed that only (2.6 %) of students experienced mild stress-related feelings, (97.4 %) experienced moderate stress and most students reported moderate coping strategies (97.4 % ).	3 *
Khoshaim et al. (2020), Saudi Arabia	A cross-sectional design	Convenient Sampling, N= 400 Students,	Zung Self-rating Anxiety Scale, Brief Coping Scale	According to the research findings 35% of students were afflicted with anxiety. There were a few instances of four coping strategies: seeking social support	5 **

				acceptance, acceptance, emotional detachment, and humane.	
Gupta et al. (2020), Nepal	A cross-sectional design	Convenient Sampling, N= 148 nursing students	DASS (Depression, anxiety scale, the stress scale) and ISI (Insomnia Index Scale).	The study found that the COVID-19 epidemic had a severe effect on nurses in Nepal. One of the major COVID-19-related worries for this group is the fear of not able to complete their studies in time.	6 **
Begam and Devi (2020), India	Cross-sectional design	Convenient Sampling, N= 244 nursing students	Perceived Stress Scale	Based on the results in the study, the participants been experiencing mild levels of stress due to COVID-19.	5 **
Mashaal et al. (2020), Jordan	Mixed methods	Convenient Sampling, N=335 nursing students	Higher Education Stress Inventory	According to this study COVID-19 is a major cause in stress to nursing school students taking part in online learning.	7 **
Fitzgerald & Konrad (2021),USA	Descriptive study	Convenient Sampling, N=50 nursing students	Ten-item Stress anxiety The symptoms to look out for. Check the list.	Nursing students were worried and stressed from having to balance the stress of academics and the anxiety caused by a lack of PPE at work. According to the study, which aimed to identify the anxiety and stress experienced by nurses during COVID-19.	3 *
Abolfotouh et al. (2020), Saudi Arabia	Cross-sectional design	Convenient Sampling, N=284 nursing students	Emotional Intelligence Scale and the Intolerance Uncertainty Scale	The COVID-19 epidemic, emotional intelligence was shown to be an essential ability to cope for nursing students from the two countries.	5 **
Gallego-Gomez et al. (2020), Spain	The observational	Convenient Sampling, N= 142 Nursing students	Student Stress Inventory-Stress Manifestations (SSI-SM)	During the lockdown, anxiety levels of the nursing students grew. In the course of this, they also had to contend with familial and financial problems as well as their primary	6 **

				method of coping was to exercise sport.	
Huang et al. (2020), China	Cross-sectional design	Convenient Sampling, 850 Nursing Students	Modified Brief COPE	The nursing students show a moderately good coping skills in the Covid 19 Pandemic.	8 **

\* - Poor Quality, \*\* - Average Quality \* - Low Quality, \*\* - Moderate Quality High Quality

## Discussion

Numerous studies show that student nurses are often subject to major stress in their clinical practice. The stress levels can vary in severity from light to extreme (Blomberg and al. 2014; Hamaideh et al., 2017). A qualitative review of 13 research studies found that around 50% of the studies studied found that nursing students were stressed. A cross-country study found that nurses studying from India, Nigeria, and the Philippines all reached a similar amount of achievement. The PSS score found was higher than the midpoint of its score, indicating that the people are anxious and stressed.

The authors of this study found that students were afflicted with a lot of stress throughout their nursing education and training. This is in line with other student nurses who have had similar experiences (Sheu et al., 2002; Yamashita et al. 2012). In terms of nurse education is generally recognized as being among the top stressful and emotionally draining areas of study. There plenty of evidence to prove this. As nursing students start treating patients, they have to deal with a lot of academic and professional obligations which further complicate the circumstance (Reeve, 2013).

The absence of the necessary expertise and knowledge regarding treatments, or the overall responses to COVID-19 infection could result in severe effects, as evidenced by the strain of training in clinical practice. As already explained in this article, maintaining a social distance, wearing masks or washing the hands is all effective methods to prevent the spread of the infection. They have to deal with microaggressions, and must make decisions about their health similar to those they make in a setting of active care or in a virtual learning setting (Ramos-Morcillo et al., 2020).

In addition to making a difference the nursing schools and universities allow nursing students to be in high-risk health conditions without equipping the required skills. Nursing students have gained the capacity to manage anxiety and stress due to the anxiety and stress associated with high-risk or learning situations. Based on the findings of the review students relied heavily on advice and information when preparing for the COVID-19 epidemic. This information allows them to escape from the confines of as well as to clear up confusion and help students learn different strategies to deal with COVID-19-related mental health issues (Cleofas 2021).

A variety of technological issues were triggered due to a increasing amount of universities and colleges providing online courses. A lot of students were forced to abandon online courses because of these problems. More than 63.2 % of nursing students experienced issues with electricity, and 63.6 % reported having issues in accessing the internet. Just 64.4 % of nursing students were connected to the internet at home to take their online classes. the disruption in education and the switch towards online education during the epidemic led to the absence of clinical experience and skills that were in the hands of nursing students (Klainin-Yobas et al., 2020).

The ability to deal with a range of life situations and stressors is dependent on the creation of positive coping strategies. In studies that the coping methods must be either emotionally or problem-focused. A stress-focused approach to management is deemed superior since it targets the main cause stress right away and offers an effective solution for stress over the long term and anxiety, each of them essential for a person's health as well as wellbeing (Ramos-Morcillo et al., 2020).

The results of this research revealed that nurses who were students had a higher likelihood than nurses of other professions to use positive coping strategies and to seek solutions to issues. Additionally, it helps nurses cope with anxiety. Due to the fact that positive coping strategies not only reduces student nurses feeling stressed however, it also helps them keep from the negative effects that pressure on their physical and mental wellbeing, they learn to deal with anxiety and stress in various ways through the guidance of the nursing faculty, who provide students with strategies for coping and stress management classes as well as a mentoring program for students on campus and a structured introduction to the field (Naveena et al., 2020; Lathamangeswari, et al. 2021).

## **Conclusion**

The comprehensive review focused on the level of stressors as well as coping mechanisms that nursing students faced during the COVID-19 epidemic and methods they employed to deal with the situation. The study adopted an evidence-based method. Based on the results in 17 study research papers. The review's inclusion of 17 studies and the subsequent examination of data revealed important stresses faced by nursing students as well as numerous strategies to manage the disruptions to the learning process brought on by the pandemic generally. Introduction of a novel technologically-based alternative method for providing nursing education has raised questions regarding internet connectivity, technical issues, as well as inadequate administration of sessions online. Nursing students face difficulties because of choosing traditional education over online and remote learning alternatives. The study's strategies for coping emphasize the necessity of maintaining a well-controlled learning environment to maximize the outcomes of nursing students as well as reducing their vulnerability to stress and burnout in their clinical training.

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### References

- 1 Abolfotouh, M. A., Almutairi, A. F., BaniMustafa, A. A. A., & Hussein, M. A. (2020). Perception and attitude of healthcare workers in Saudi Arabia with regard to Covid-19 pandemic and potential associated predictors. *BMC infectious diseases*, 20(1), 1-10.
- 2 Abram, M. D., & Jacobowitz, W. (2021). Resilience and burnout in healthcare students and inpatient psychiatric nurses: A between-groups study of two populations. *Archives of Psychiatric Nursing*, 35(1), 1-8.
- 3 Ahmed, O., Ahmed, M. Z., Alim, S. M. A. H. M., Khan, M. A. U., & Jobe, M. C. (2022). COVID-19 outbreak in Bangladesh and associated psychological problems: An online survey. *Death Studies*, 46(5), 1080-1089.
- 4 AlAteeq, D. A., Aljhani, S., & AlEesa, D. (2020). Perceived stress among students in virtual classrooms during the COVID-19 outbreak in KSA. *Journal of Taibah University Medical Sciences*, 15(5), 398-403.
- 5 Aslan, H., & Pekince, H. (2021). Nursing students' views on the COVID-19 pandemic and their perceived stress levels. *Perspectives in psychiatric care*, 57(2), 695-701.
- 6 Aslan, İ. (2021). Evaluating wellbeing and worries of university students during COVID-19 pandemic. *Atatürk Üniversitesi İktisadi Ve İdari Bilimler Dergisi*, 35(1), 245-261.
- 7 Aslan, I., Ochnik, D., & Çınar, O. (2020). Exploring perceived stress among students in Turkey during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 17(23), 8961.
- 8 Aslan, I., Ochnik, D., & Çınar, O. (2020). Exploring perceived stress among students in Turkey during the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 17(23), 8961.
- 9 Banna, M. H. A., Sayeed, A., Kundu, S., Christopher, E., Hasan, M. T., Begum, M. R., ... & Khan, M. S. I. (2022). The impact of the COVID-19 pandemic on the mental health of the adult population in Bangladesh: a nationwide cross-sectional study. *International Journal of Environmental Health Research*, 32(4), 850-861.
- 10 Begam, B., & Devi, K. (2020). A study to assess the perceived stress among nursing students during COVID-19 lockdown. *International Journal of Science and Healthcare Research*, 5(4), 388-393.
- 11 Blomberg, K., Bisholt, B., Kullén Engström, A., Ohlsson, U., Sundler Johansson, A., & Gustafsson, M. (2014). Swedish nursing students' experience of stress during clinical practice in relation to clinical setting characteristics and the organisation of the clinical education. *Journal of clinical nursing*, 23(15-16), 2264-2271.
- 12 Bourion-Bédès, S., Tarquinio, C., Batt, M., Tarquinio, P., Lebreuilly, R., Sorsana, C., ... & Baumann, C. (2021). Stress and associated factors among French university students under the COVID-19 lockdown: The results of the PIMS-CoV 19 study. *Journal of affective disorders*, 283, 108-114.
- 13 Chhetri, B., Goyal, L. M., Mittal, M., & Battineni, G. (2021). Estimating the prevalence of stress among Indian students during the COVID-19 pandemic:

- a cross-sectional study from India. *Journal of Taibah University Medical Sciences*, 16(2), 260-267.
- 14 Cleofas, J. V. (2021). Life interruptions, learnings and hopes among Filipino college students during COVID-19 pandemic. *Journal of Loss and Trauma*, 26(6), 552-560.
  - 15 Data.europa.eu. (2020). Education during COVID-19; moving towards e-learning. Available from: <https://data.europa.eu/en/impact-studies/covid-19/education-during-covid-19-moving-towards-e-learning>.
  - 16 Ejdys, J. (2021). Factors affecting the adoption of e-learning at university level. *WSEAS Transactions on Business and Economics*, 18, 313-323.
  - 17 Fitzgerald, A., & Konrad, S. (2021, April). Transition in learning during COVID-19: Student nurse anxiety, stress, and resource support. In *Nursing Forum* (Vol. 56, No. 2, pp. 298-304).
  - 18 Fujiwara, D., Dolan, P., Lawton, R., Behzadnejad, F., Lagarde, A., Maxwell, C., & Peytrignet, S. (2020). Wellbeing costs of COVID-19 in the UK.
  - 19 Gallego-Gómez, J. I., Campillo-Cano, M., Carrión-Martínez, A., Balanza, S., Rodríguez-González-Moro, M. T., Simonelli-Muñoz, A. J., & Rivera-Caravaca, J. M. (2020). The COVID-19 pandemic and its impact on homebound nursing students. *International Journal of Environmental Research and Public Health*, 17(20), 7383.
  - 20 Gupta, A. K., Mehra, A., Niraula, A., Kafle, K., Deo, S. P., Singh, B., ... & Grover, S. (2020). Prevalence of anxiety and depression among the healthcare workers in Nepal during the COVID-19 pandemic. *Asian journal of psychiatry*, 54, 102260.
  - 21 Hafsteinsdóttir, T. B., van der Zwaag, A. M., & Schuurmans, M. J. (2017). Leadership mentoring in nursing research, career development and scholarly productivity: A systematic review. *International Journal of Nursing Studies*, 75, 21-34.
  - 22 Hamadi, H., Borkar, S. R., Moody, L., Tafili, A., Wilkes, J. S., Franco, P. M., ... & Spaulding, A. (2021). Hospital-Acquired conditions reduction program, patient safety, and magnet designation in the United States. *Journal of patient safety*, 17(8), e1814-e1820.
  - 23 Hamaideh SH, Al-Omari H, Al-Modallal H. (2017). Nursing students' perceived stress and coping behaviors in clinical training in Saudi Arabia. *Journal of mental health*, 26(3):197-203.
  - 24 Hoyt, L. T., Cohen, A. K., Dull, B., Castro, E. M., & Yazdani, N. (2021). "Constant stress has become the new normal": stress and anxiety inequalities among US college students in the time of COVID-19. *Journal of Adolescent Health*, 68(2), 270-276.
  - 25 Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. *Psychiatry research*, 288, 112954.
  - 26 Husky, M. M., Kovess-Masfety, V., & Swendsen, J. D. (2020). Stress and anxiety among university students in France during Covid-19 mandatory confinement. *Comprehensive Psychiatry*, 102, 152191.
  - 27 Khoshaim, H. B., Al-Sukayt, A., Chinna, K., Nurunnabi, M., Sundarasan, S., Kamaludin, K., ... & Hossain, S. F. A. (2020). Anxiety level of university students during COVID-19 in Saudi Arabia. *Frontiers in psychiatry*, 11, 579750.

- 28 Kistan, K., Malka, S., & Musni, M. (2020). The relationship between knowledge, attitude, and readiness of academic community in Covid-19 spread prevention: Batari Toja Nursing Academy, Watampone. *International Journal of Health & Medical Sciences*, 3(1), 72-78. <https://doi.org/10.31295/ijhms.v3n1.155>
- 29 Klainin-Yobas, P., Keawkerd, O., Pumpuang, W., Thunyadee, C., Thanoi, W., & He, H. G. (2014). The mediating effects of coping on the stress and health relationships among nursing students: A structural equation modelling approach. *Journal of advanced nursing*, 70(6), 1287-1298.
- 30 Korkmaz, G., & Toraman, Ç. (2020). Are we ready for the post-COVID-19 educational practice? An investigation into what educators think as to online learning. *International Journal of Technology in Education and Science*, 4(4), 293-309.
- 31 Kumpikaitė-Valiūnienė, V., Aslan, I., Duobienė, J., Glińska, E., & Anandkumar, V. (2021). Influence of digital competence on perceived stress, burnout and well-being among students studying online during the COVID-19 lockdown: A 4-country perspective. *Psychology research and behavior management*, 14, 1483.
- 32 Lathamangeswari C, Pandurangan H, Ramaiah P, Muthukrishnan A. (2021). Adverse Events Following COVID 19 Vaccine Shot. *International journal current research and review*, 13(11):33-8.
- 33 Li, X., Lv, Q., Tang, W., Deng, W., Zhao, L., Meng, Y., ... & Li, T. (2021). Psychological stresses among Chinese university students during the COVID-19 epidemic: the effect of early life adversity on emotional distress. *Journal of affective disorders*, 282, 33-38.
- 34 Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P., ... & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Journal of clinical epidemiology*, 62(10), e1-e34.
- 35 Lis, M., Wolna, N., Moczulska, M., & Solińska, K. (2020). Social aspects of introducing online learning-the students' perspective. *e-mentor*, (4 (86)), 36-46.
- 36 Masha'al, D., Rababa, M., & Shahrour, G. (2020). Distance learning-related stress among undergraduate nursing students during the COVID-19 pandemic. *Journal of Nursing Education*, 59(12), 666-674.
- 37 Naveena JH, Arora S, Sharma V. (2020). Systematic review of reminiscence therapy: Global trends & Indian adaptations. *Int J Psychosoc Rehabil*, 24(8):1978-90.
- 38 Petrides, L. A. (2002). Web-based technologies for distributed (or distance) learning: Creating learning-centered educational experiences in the higher education classroom. *International journal of instructional media*, 29(1), 69.
- 39 Pokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher Education for the Future*, 8(1), 133-141.
- 40 Ramos-Morcillo, A. J., Leal-Costa, C., Moral-García, J. E., & Ruzafa-Martínez, M. (2020). Experiences of nursing students during the abrupt change from face-to-face to e-learning education during the first month of confinement due to COVID-19 in Spain. *International journal of environmental research and public health*, 17(15), 5519.

- 41 Reeve, K. L., Shumaker, C. J., Yearwood, E. L., Crowell, N. A., & Riley, J. B. (2013). Perceived stress and social support in undergraduate nursing students' educational experiences. *Nurse education today*, 33(4), 419-424.
- 42 Savitsky, B., Findling, Y., Erel, A., & Hendel, T. (2020). Anxiety and coping strategies among nursing students during the covid-19 pandemic. *Nurse education in practice*, 46, 102809.
- 43 Shafiq, S., Nipa, S. N., Sultana, S., Rifat-Ur-Rahman, M., & Rahman, M. M. (2021). Exploring the triggering factors for mental stress of university students amid COVID-19 in Bangladesh: a perception-based study. *Children and youth services review*, 120, 105789.
- 44 Sheu, S., Lin, H. S., & Hwang, S. L. (2002). Perceived stress and psychosocial status of nursing students during their initial period of clinical practice: the effect of coping behaviors. *International journal of nursing studies*, 39(2), 165-175.
- 45 Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2021). The COVID-19 pandemic. *International Journal of Health Sciences*, 5(2), vi-ix. <https://doi.org/10.53730/ijhs.v5n2.2937>
- 46 Sveinsdóttir, H., Flygenring, B. G., Svavarsdóttir, M. H., Thorsteinsson, H. S., Kristófersson, G. K., Bernharðsdóttir, J., & Svavarsdóttir, E. K. (2021). Predictors of university nursing students burnout at the time of the COVID-19 pandemic: A cross-sectional study. *Nurse Education Today*, 106, 105070.
- 47 Thai, T. T., Le, P. T. V., Huynh, Q. H. N., Pham, P. T. T., & Bui, H. T. H. (2021). Perceived stress and coping strategies during the COVID-19 pandemic among public health and preventive medicine students in Vietnam. *Psychology Research and Behavior Management*, 14, 795.
- 48 Tiwari J, Imam Z, Nagar S, Singh S, Gaur S, Verma J, Singh N. (2021). Covid-19 among Gnm 3rd year students in integral college of nursing Lucknow. *International Journal of Current Research*, 13(3) 16812-16816.
- 49 Woods Jr, R. H. (2002). How much communication is enough in online courses?--exploring the relationship between frequency of instructor-initiated personal email and learners' perceptions of and participation in online learning. *International Journal of Instructional Media*, 29(4), 377.
- 50 Yamashita, K., Saito, M., & Takao, T. (2012). Stress and coping styles in Japanese nursing students. *International Journal of Nursing Practice*, 18(5), 489-496.
- 51 Ye, B., Wu, D., Im, H., Liu, M., Wang, X., & Yang, Q. (2020). Stressors of COVID-19 and stress consequences: The mediating role of rumination and the moderating role of psychological support. *Children and youth services review*, 118, 105466.