

+Evaluation of Perceived stress among medical students
during online education



For the partial fulfillment of the
Bachelor Degree of Physiotherapy

STUDENT NAME
BUSHRA PARVEEN

BPT- 4TH YEAR

Add. No: - 17SMAS101089

SUPERVISOR NAME
DR. MANGALAM SHARMA

Dept. of Physiotherapy

Galgotias University

DEPT OF PHYSIOTHERAPY

SMAS

GALGOTIAS UNIVERSITY

GREATER NOIDA

U.P.

2020-2021



DECLARATION

I, **BUSHRA PARVEEN** certify that the work embodied in this Project work is my own bona fide work carried out by me under the supervision of **DR. MANGALAM SHARMA** for a period of **1 YEAR** from **2020** to **2021** at Galgotias University. The matter embodied in this thesis has not been submitted elsewhere for the award of any other degree/diploma. I declare that I have faithfully acknowledged, given credit to and referred to the research worker wherever the work has been cited in the text and the body of the thesis. I further certify that I have not willfully lifted up some other's work, Para, text, data, results, etc. reported in the journals, books, magazines, reports, dissertations, theses, etc., or available at web-sites and have included them in this BPT Project / Desertion / thesis and cited as my own work.

Date:.....

(Signature of the Research Scholar)
(BUSHRA PARVEEN)

Place: **Galgotias University**
Greater Noida
U.P, INDIA



Certificate from the Supervisor

This is to certify that the research project / thesis entitled “EVALUATION OF PERCEIVED STRESS AMONG MEDICAL STUDENTS DURING ONLINE EDUCATION” Submitted by **BUSHRA PARVEEN** Reg. NO **17121010189** at Galgotias University for the Bachelor degree in **PHYSIOTHERAPY** is his/her original research work carried out by him/her under my guidance and supervision. This work is fully or partially has not been submitted for the award of any other degree or diploma. The assistance and help taken during the course of the study has been duly acknowledged and the source of literature amply recorded.

Supervisor signature:

Supervisor Name: **Dr. Mangalam Sharma**

Supervisor Designation:

Associate professor and

Department of Physiotherapy

SMAS

Galgotias University

Greater Noida

U.P INDIA



COPYRIGHT TRANSFER CERTIFICATE

“EVALUATION OF PERCEIVED STRESS AMONG MEDICAL STUDENTS DURING ONLINE EDUCATION”

Name of the student; **BUSHRA PARVEEN**

Copyright Transfer

The undersigned hereby assigns to the Galgotias University all rights under copyright that may exist in and for the above Dissertation /thesis submitted for the award of the BPT. Degree.

**Signature of student
BUSHRA PARVEEN**

Date:.....

Acknowledgement

I would like to remember and thank all the students participated in this survey

I owe a great thanks to many people who helped and supported me during the completion of the research project. My deepest thanks is to my guide, Dr. Mangalam Sharma (PT) for guiding and supporting me every time with attention and care. I also express my deep regards to my Head of Department and Director Dr. Rituraj Verma (PT). My deep sense of gratitude for my faculty for all the valuable support and also thanks to my batch mates

**Signature of the student
(BUSHRA PARVEEN)**



TABLE OF CONTENTS

DECLARATION.....	I
CERTIFICATE FROM THE SUPERVISOR.....	II
COPYRIGHT TRANSFER CERTIFICATE.....	III
ACKNOWLEDGEMENT.....	IV
TABLE OF CONTENTS.....	V
ABSTRACT.....	VI
CHAPTER 1 INTRODUCTION.....	1
CHAPTER2- METHODOLOGY	6
CHAPTER 3- PROCEDURE	7
CHAPTER 4- RESULT.....	8
CHAPTER 5- DISCUSSION.....	12
CHAPTER 6- CONCLUSION.....	14
CHAPTER 7 - REFERENCE.....	15
CHAPTER 8- ANNEXURE.....	16
PLAGIARISM REPORT.....	20
PUBLISHED ARTICLE.....	22

ABSTRACT

INTRODUCTION:- COVID-19 is a newly discovered contagious corona virus that was first appeared in Wuhan, China in 2019 that affected entire mankind globally and was declared pandemic by WHO (World Health Organization). This pandemic outbreak can have psychological health consequences worldwide due to enforced adaptation in lifestyle and education, so this study evaluated the perceived stress level among medical students during online education due to COVID-19 outbreak.

METHODS: - Through an online survey, a cross-sectional study was undertaken using self-reported data from students from multiple universities in Delhi, NCR, India (n = 578). A PSS (Perceived stress scale) questionnaire was developed and sends to the respondents through WhatsApp, emails etc. and data was analyzed through descriptive statistics.

RESULTS:-Out of 578 responses 49% were male and 51% were female. Majority of students shows moderate levels of stress (81%) while 10% students registered high levels and rest 9% were having low stress levels. Students that registered majority of moderate levels of stress were between 20-22 years of age.

CONCLUSION:- It is clear that this pandemic had elicited a strong and varied response from students and for that mental health issues should be considered across multiple domains and in all age groups ,groups and populations. Students, as well as general public, require stress management during COVID-19 pandemic. Student's stress levels during distant learning could be reduced by incorporating online counseling and stress management programs.

KEY WORDS: perceived, outbreak, education, stress, students.

CHAPTER-1

INTRODUCTION

A sudden invasion of COVID-19 globally has not only creating fatality but also leading to intolerable psychological pressure in the students as well as other groups. (1) At the Start of December 2019, China closely observed serial of pneumonia alike symptoms in patients in the city of Wuhan, of Hubei region.[2] The appearance of the Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2) that causes the extremely contagious disease and nerve-wracking situation for the entire humanity known as corona virus disease (COVID-19) , is a newly discovered infectious corona virus that spreads from one person to another through droplets and was first discovered in Wuhan, china at the end of December 2019 , which in less than three months spread throughout the globe. [3]

World health organization (WHO) declared the novel corona virus disease 2019 (COVID-19) a health emergency in January 2020 and declared it a pandemic in March 2020.[4] The World Health Organization and international mental health organizations have both warned that the present COVID-19 disease will lead to a significant increase in stress-related disorders and mental health difficulties around the world. This abrupt, widespread epidemic is linked to a variety of psychological distresses and has the characteristics of mental health problems.[1] Fear, uncertainty, loneliness as well as stress, anxiety and sadness have been recorded in general public worldwide following the emergence of COVID-19 disease, it has been claimed. As a result of this dire situation, targets were set to limit the transmission, early detection, dissemination of critical information about the disease, infection prevention etc., to attain these goals many countries enforced the state of lockdown.[4]

The Corona virus has an impact on every part of our lives including economy and education. In several countries, efforts to restrict the transmission of the COVID -19 virus among children and adults have resulted in the widespread shutdown of schools, colleges, universities and other educational institutions. As of March 25, 150 countries had shutdown schools and educational institutions across the country, affecting more than 80% of the global student population. Schools and institutions have been closed across the country, since mid- march 2020. The closure of schools, colleges and universities created a stressful situation for educational administration with extremely restricted choices. [4]

Within days, all universities, including medical schools, had switched to online study. [6] In India's educational system, online classes were a relatively new style of instruction that had not previously been a part of regular classes. [7] Distance learning has also been linked to stress, which has been linked to academic, economical, and social challenges. Students may find it difficult to cope with the online mode. This comprises a student's capacity to cope with technology, adequate home resources for on-line learning, and a stable internet connection. [5] Professors and students also confronted a slew of logistical, technical, financial, and social issues.[8]

In this study, we focused specifically on medical students. These students routinely encounter substantial emotional stress. [9] “Stress is a complex, multidimensional negative emotion” defined by 8, 9 defined stress is directly relates to features of psychology such as relaxation, broadening, reframing and creativity. [10] COVID-19 had thrown a wrench in the medical school’s routine as well as the rest of the community and world. For medical students, the COVID-19 pandemic had created an inconvenient paradox. [11] In terms of both, academics and emotional component of the students, medical education is the most demanding of all other professional degrees. Anxiety was discovered in one out of every three medical students worldwide, which was higher than the general population.[9] Previous studies demonstrated that student’s depression was a problem at all stages of medical education. Results from several studies revealed that depressive symptoms among medical trainees may harm the long-term health of physicians as well as the quality of care delivered by academic medical centers.[8] Due to the COVID-19 pandemic, medical schools faced numerous challenges, including the transition from face-to-face lectures to online courses, the impact on assessments and evaluation programmes, travel restrictions for students travelling long distances, social restrictions, personal financial impairment due to pandemic time, and mental health impact[12].

High levels of stress can have a psychological and negative impact on their educational approach, reducing their ability to concentrate and making them unaware of learning activities.[12] Previous studies revealed that disease outbreaks impacted person’s psychological health and well- being. It was found that females and youngsters between ages of 16 and 24 years exhibited higher risk of developing psychological stress.[13]

So, this study aimed to evaluate the perceived stress level among medical students during online education due to COVID-19 outbreak.

CHAPTER 2

METHODOLOGY

A sample of 585 students was recruited for the study. On the basis of inclusion and exclusion criteria, 578 respondents were included, rest of them were not according to the criteria of the study.

Study design – Cross section or online survey

Sample size- A sample of 512 medical students will be taken from various medical colleges/universities, Delhi, NCR, India.

Inclusion Criteria: -

- Age- 17 to 26
- Gender – Male and Female
- Medical students
- Knows English language

Exclusion Criteria: -

- Non- medical students
- Offline classes

CHAPTER 3

PROCEDURE

This was a self-reported study that took place entirely online. Using Google forms, we created an online Perceived Stress Scale questionnaire. Prior to the questionnaire, the participant was asked to sign a consent form via WhatsApp, emails and other social media channels. The subjects were encouraged and informed about the study when the link was distributed. That link sent me to the study's information and permission form automatically. Individual's must first accept the survey and then fill out demographic information before answering a series of questions.

Sheldon Cohen developed a Perceived Stress Scale in 1983 as a stress evaluation tool. The questionnaire included ten questions. The questions were supposed to be rated on a 5-point scale ranging from 0-13 representing low stress, 14-26 shows moderate stress and 27-40 indicates high stress.[10]

Descriptive statistics have been used in the study to analyze the findings. Mean, standard deviation and proportions have been used to estimate the results.

CHAPTER 4

RESULT

Medical students from several universities of Delhi, NCR, participated in this online self reported survey. There were total of 578 answers recorded. All students were between 17-26 years of age and were of Indian descent. Students with any form of psychiatric or mental problem were excluded from the study. The students who understand English language were included in the study.

The mean age of the participants was 23.45 ± 3.95 years.

Males made up 49% of the total subjects, while 51% were females. 81% individuals of overall strength were under moderate stress, 9% had a low level of stress and were able to relax while 10% of the participants were highly stressed.

LOW STRESS
MODERATE STRESS
HIGH STRESS

TOTAL

	LOW STRESS	MODERATE STRESS	HIGH STRESS
TOTAL	(9%)50	(81%)467	(10%)61

TABLE: - SHOWING STRESS PERCENTAGE.

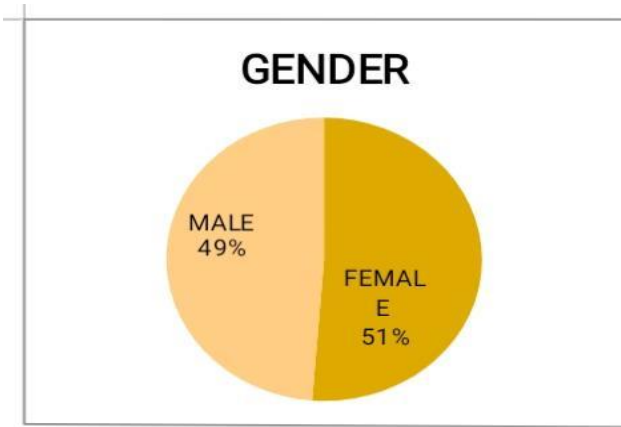


FIG: - GENDER DESCRIPTION

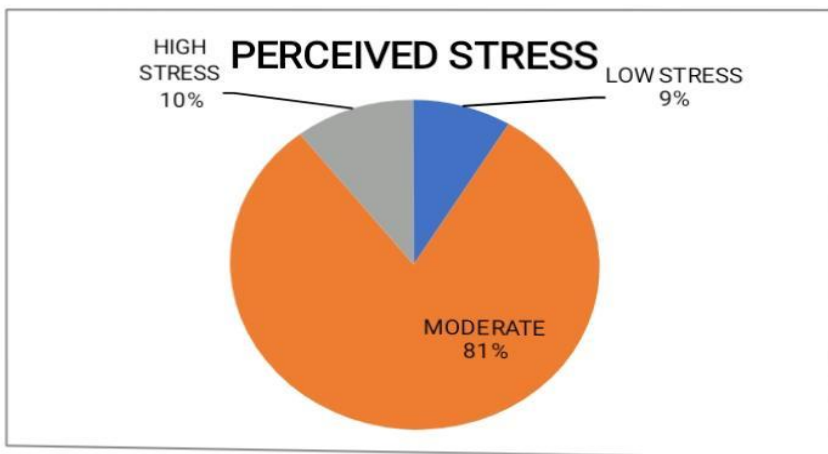


FIG: - SHOWING STRESS PERCENTAGE

CHAPTER 5

DISCUSSION

As the WHO had warned, the current corona virus pandemic is having negative impact on the psychological state of medical students. Lockdown restrictions and isolation can cause feelings of fear, anxiety, stress and depression. The purpose of this study was to assess medical student's perceptions of stress during online education.

In this study we had found that the majority (81%) of medical students reported moderate levels of stress, while 10% reported low levels of stress, which could be related to scholastic, economical or social challenges caused by a lack of social interaction during social distancing. Female students reported slightly higher stress levels than male students, which could be attributable to the fact that female participants made up the majority of the data. Exam results, broad curriculums, parental pressure, separation and fear about the future were all contributors of increased stress.

Because the poll was done during the third wave of COVID-19 disease, the outcomes were unsurprising. India, like many other regions of the world, particularly Europe, has seen a large increase in COVID -19 cases and deaths. In India, the majority of school examinations and higher competitive examinations take held between March and June. According to previous studies, many students in India committed suicide in 2020 as a result of the COVID-19 pandemic, which resulted in academic loss and examination postponement. In the year 2021, having a peak at this time instills worry in students owing to the uncertainty that numerous exams would be held around this time were delayed for unsure times.

Nearly one – third of students stated that online examinations were more stressful while about a quarter of students said that on-campus exams were more stressful. The unfamiliarity and lack of important qualities in the E-exam system may contribute to student's worry, given that this is their first encounter with distant E-exams. Remote -E exams have also been reported to be problematic in previous studies. [13] Several previous researches had revealed that stressed students were more likely to be in their first year of medical school than non-stressed students. Furthermore, a recent survey among medical and dental students at Liqueate College reported that 77 percent of students have negative perceptions towards e-learning and they did not choose online learning over the face-to-face modality during the lock down situation. 84 percent of these students said there was little interaction between them and their instructors.[14] COVID-19 had not been demonstrated to have a negative effect on university student's mental health in all research. A research carried out in China on undergraduate medical students showed that only few of this group had moderate (2.7%) or severe (0.9%) anxiety.

It is critical to provide education, guidance and acknowledgement about disease prevention and dissemination. The medical curriculum was disrupted by COVID-19 but the system is evolving to support our successful medical education, during the critical period of crisis.

Colleges/ Universities can supply students with resources, such as counseling, peer advocacy, and assistance. Additionally, those who are experiencing symptoms of anxiety and depression should seek professional mental health care.

CHAPTER 6

CONCLUSION

Students' perceptions of the impact of online education and their learning experiences during the covid-19 epidemic are investigated in this study. Although the concept of online classes is still developing, students have had problems with internet connectivity because to network problems. Online classes did not appear to be useful for the students in our survey. An interactive online conversation regarding the case study was one of the recommended alternatives. When the students return to offline classes, they will need to review some of the subjects presented during the online lectures.

CHAPTER 7

References

- 1) Mangalam, K., Adarsh, S., Akshay, A., Sakshi, A., Yamini, S., Jyoti, S. and Megha, Y., 2020. Impact of COVID-19 on Stress in Collegiate Student. Prof.(Dr) RK Sharma, 20(4), p.311.

- 2) MangalamKumari, A.A., Sakshi, A., Yamini, S., Jyoti, S., Megha, Y. and Sajjad, A., 2020. Impact on National and International Global events: The Novel Corona Virus. Website: www. ijpot. com, 14(3), p.132.

- 3) Hernández-García F, Gómez OG, González-Velázquez VE, Pedraza-Rodríguez EM, Zamora-Fung R, Herrera LA. Perceived stress by students of the medical sciences in Cuba toward the COVID-19 pandemic: results of an online survey. Revista Colombiana de Psiquiatría. 2021 Apr 30.

- 4) Torales J, Ríos-González C, Barrios I, O'Higgins M, González I, García O, Castaldelli-Maia JM, Ventriglio A. Self-perceived stress during the quarantine of COVID-19 pandemic in Paraguay: an exploratory survey. Frontiers in psychiatry. 2020 Oct 26;11:1155.

- 5) Sharma, J., Ahmad, I., Jamali, S.N., Sharma, Y., Yadav, M., Arora, S. and Kumari, M., 2021. Impact of covid-19 pandemic and national lockdown on mental health among general urban indian population: An online based cross-sectional survey. Medico-Legal Update, 21(1).

- 6) Khan N, Fahad S, Faisal S, Naushad M. Quarantine role in the control of corona virus in the world and its impact on the world economy. Available at SSRN 3556940. 2020 Mar 18.

- 7) Abdulghani HM, Sattar K, Ahmad T, Akram A. Association of COVID-19 pandemic with undergraduate medical students' perceived stress and coping. Psychology Research and Behavior Management. 2020;13:871.

- 8) D. Nambiar (2020). The impact of online learning during COVID-19: students' and teachers' perspective. International Journal of Indian Psychology, 8(2), 783-793. DIP:18.01.094/20200802, DOI:10.25215/0802.094 Educ. Sci. 2020, 10(9), 232; <https://doi.org/10.3390/educsci10090232>

- 9) O'Byrne L, Gavin B, Adamis D, Lim YX, McNicholas F. Levels of stress in medical students due to COVID-19. Journal of Medical Ethics. 2021 Jun 1;47(6):383-8.
- 10) Fatima, A., Kumari, M., Jahan, A., Sahu, P.K., Kukreti, P. and Sharma, M., 2021. Survey Based Study on Stress Level and Sleep Quality among Hostellers. Medico-Legal Update, 21(2).
- 11) Saraswathi, Ilango, et al. "Impact of COVID-19 outbreak on the mental health status of undergraduate medical students in a COVID-19 treating medical college: a prospective longitudinal study." PeerJ 8 (2020): e10164.
- 12) Park J, Chung S, An H, Park S, Lee C, Kim SY, Lee JD, Kim KS. A structural model of stress, motivation, and academic performance in medical students. Psychiatry investigation. 2012 Jun;9(2):143.
- 13) 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. Journal of medical internet research. 2020;22(9):e21279.
- 14) Browning MH, Larson LR, Sharaievska I, Rigolon A, McAnirlin O, Mullenbach L, Cloutier S, Vu TM, Thomsen J, Reigner N, Metcalf EC. Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. PloS one. 2021 Jan 7;16(1):e0245327.
- 15) Cohen S, Kamarck T, Mermelstein R. Perceived stress scale. Measuring stress: A guide for health and social scientists 1994;10(2):

CHAPTER-8

Annexure

QUESTIONNAIRE

EVALUATION OF PERCEIVED STRESS AMONG MEDICAL STUDENTS DURING ONLINE EDUCATION.

Email ID:-

.....

Your Name:-

.....

Your Age:-

.....

Gender:-

-Male

-Female

1. In the last month, how often have you been upset because of something that happened unexpectedly? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

2. In the last month, how often have you felt that you were unable to control the important things in your life? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

3. In the last month, how often have you felt nervous and "stressed". *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

4. In the last month, how often have you felt confident about your ability to handle your personal problems? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

5. In the last month, how often you felt that things were going your way? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

6. In the last month, how often have you found that you could not cope with all the things that you had to do? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

7. In the last month, how often have you been able to control irritations in your life? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

8. In the last month, how often have you felt that you were on top of things? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

9. In the last month, how often have you been angered because of things that were outside of your control? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? *

0 (never)

1 (almost never)

2 (sometimes)

3 (fairly often)

4 (very often)

EVALUATION OF PERCEIVED STRESS AMONG MEDICAL STUDENTS DURING ONLINE EDUCATION

ORIGINALITY REPORT

5%

SIMILARITY INDEX

PRIMARY SOURCES

- 1 Valentin Leducq, Jeanne Couturier, Benjamin Granger, Sarah Jolivet et al. "Investigation of healthcare-associated COVID-19 in a large French hospital group by whole-genome sequencing", *Microbiological Research*, 2022
19 words — 1%
Crossref
 - 2 cms.galenos.com.tr
Internet
18 words — 1%
 - 3 www.ncbi.nlm.nih.gov
Internet
17 words — 1%
 - 4 vocal.media
Internet
10 words — 1%
 - 5 Mücahit AVCİL, Akın Yolcubal, Yunus Emre Özlüer, Çağaç YETİŞ. "Matrix metalloproteinase-9 and substance-P as predictors for early-stage diagnosis of acute mountain sickness", *The American Journal of Emergency Medicine*, 2022
9 words — 1%
Crossref
-

How to Cite:

Praveen, B., Kumari, M., Fatima, A., Arora, S., Yadav, M., & Sharma, J. (2022). Evaluation of perceived stress among medical students during online education. *International Journal of Health Sciences*, 6(S4), 3280–3286. <https://doi.org/10.53730/ijhs.v6nS4.9166>

Evaluation of perceived stress among medical students during online education

Bushra Praveen

Undergraduate Scholar, Galgotias University

Mangalam Kumari

PhD Scholar, Sharda University

Corresponding author email: sharma.mangalam94@gmail.com

Ambreen Fatima

Assistant professor, Galgotias University

Sakshi Arora

Assistant professor, Galgotias University

Megha Yadav

Associate professor, Galgotias University

Jyoti Sharma

Associate professor, Galgotias University

Abstract---Purpose: COVID-19 is a newly discovered contagious coronavirus that was first appeared in Wuhan, China in 2019 that affected entire mankind globally and was declared pandemic by WHO (World Health Organization). This pandemic outbreak can have psychological health consequences worldwide due to enforced adaptation in lifestyle and education, so this study evaluated the perceived stress level among medical students during online education due to COVID-19 outbreak. Methods: Through an online survey, a cross-sectional study was undertaken using self-reported data from students from multiple universities in Delhi, NCR, India (n = 578). A PSS (Perceived stress scale) questionnaire was developed and sent to the respondents through WhatsApp, emails etc. and data was analysed through descriptive statistics. Result: Out of 578 responses 49% were male and 51% were female. Majority of students shows moderate levels of stress (81%) while 10% students registered high levels and rest 9% were having low stress levels. Students that registered majority of moderate levels of stress were between 20-22 years of age. Conclusion: It is clear that this pandemic had elicited a strong and varied response from students and for that mental health.

issues should be considered across multiple domains and in all age groups groups and populations. Students, as well as general public, requires stress management during COVID-19 pandemic. Student's stress levels during distant learning could be reduced by incorporating online counselling and stress management programmes.

Keywords---perceived, outbreak, education, stress, students.

Introduction

A sudden invasion of COVID-19 globally has not only creating fatality but also leading to intolerable psychological pressure in the students as well as other groups. (1) At the Start of December 2019, China closely observed serial of pneumonia alike symptoms in patients in the city of Wuhan, of Hubei region.[2] The appearance of the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS CoV-2) that causes the extremely contagious disease and nerve-wracking situation for the entire humanity known as coronavirus disease (COVID-19) , is a newly discovered infectious coronavirus that spreads from one person to another through droplets and was first discovered in Wuhan, china at the end of December 2019 , which in less than three months spread throughout the globe. [3]

World health organization (WHO) declared the novel coronavirus disease 2019 (COVID-19) a health emergency in January 2020 and declared it a pandemic in March 2020.[4] The World Health Organization and international mental health organizations have both warned that the present COVID-19 disease will lead to a significant increase in stress-related disorders and mental health difficulties around the world. This abrupt, widespread epidemic is linked to a variety of psychological distresses and has the characteristics of mental health problems.[1] Fear, uncertainty, loneliness as well as stress, anxiety and sadness have been recorded in general public worldwide following the emergence of COVID-19 disease, it has been claimed. As a result of this dire situation, targets were set to limit the transmission, early detection, dissemination of critical information about the disease, infection prevention etc., to attain these goals many countries enforced the state of lockdown.[4]

The Corona virus has an impact on every part of our lives including economy and education. In several countries, efforts to restrict the transmission of the COVID - 19 virus among children and adults have resulted in the widespread shutdown of schools, colleges, universities and other educational institutions. As of March 25, 150 countries had shutdown schools and educational institutions across the country, affecting more than 80% of the global student population. Schools and institutions have been closed across the country, since mid- march 2020. The closure of schools, colleges and universities created a stressful situation for educational administration with extremely restricted choices. [4]

Within days, all universities, including medical schools, had switched to online study. [6] In India's educational system, online classes were a relatively new style

of instruction that had not previously been a part of regular classes. [7] Distance
3282

learning has also been linked to stress, which has been linked to academic, economical, and social challenges. Students may find it difficult to cope with the online mode. This comprises a student's capacity to cope with technology, adequate home resources for on-line learning, and a stable internet connection. [5] Professors and students also confronted a slew of logistical, technical, financial, and social issues.[8]

In this study, we focused specifically on medical students. These students routinely encounter substantial emotional stress.[9] "Stress is a complex, multidimensional negative emotion" defined by 8,9 defined stress is directly related to features of psychology such as relaxation, broadening, reframing and creativity. [10] COVID-19 had thrown a wrench in the medical school's routine as well as the rest of the community and world. For medical students, the COVID-19 pandemic had created an inconvenient paradox [11] In terms of both, academics and emotional component of the students, medical education is the most demanding of all other professional degrees. Anxiety was discovered in one out of every three medical students worldwide, which was higher than the general population [9]. Previous studies demonstrated that student's depression was a problem at all stages of medical education. Results from several studies revealed that depressive symptoms among medical trainees may harm the long-term health of physicians as well as the quality of care delivered by academic medical centres.[8] Due to the COVID-19 pandemic, medical schools faced numerous challenges, including the transition from face-to-face lectures to online courses, the impact on assessments and evaluation programmes, travel restrictions for students travelling long distances, social restrictions, personal financial impairment due to pandemic time, and mental health impact[12].

High levels of stress can have a psychological and negative impact on their educational approach, reducing their ability to concentrate and making them unaware of learning activities.[12] Previous studies revealed that disease outbreaks impacted person's psychological health and well-being. It was found that females and youngsters between ages of 16 and 24 years exhibited higher risk of developing psychological stress.[13] So, this study aimed to evaluate the perceived stress level among medical students during online education due to COVID-19 outbreak.

Methods

Procedure

The present study was a cross-sectional, observational study including students from various Universities of Delhi, NCR, India. A sample of 585 students were recruited for the study. On the basis of inclusion and exclusion criteria, 578 respondents were included, rest of them were not according to the criteria of the study. This research comprised both male and female between the ages of 17 and 26. This was a self-reported study that took place entirely online. Using Google forms, we created an online Perceived Stress Scale questionnaire. Prior to the questionnaire, the participant was asked to sign a consent form via WhatsApp, emails and other social media channels.

The subjects were encouraged and informed about the study when the link was distributed. That link sent me to the

3283

study's information and permission form automatically. Individual's must first accept the survey and then fill out demographic information before answering a series of questions.

Sheldon Cohen developed a Perceived Stress Scale in 1983 as a stress evaluation tool. The questionnaire included ten questions. The questions were supposed to be rated on a 5-point scale ranging from 0-13 representing low stress, 14-26 shows moderate stress and 27-40 indicates high stress.[10] Descriptive statistics have been used in the study to analyse the findings. Mean, standard deviation and proportions have been used to estimate the results.

Result

Medical students from several universities of Delhi, NCR, participated in this online self-reported survey. There were total of 578 answers recorded. All students were between 17-26 years of age and were of Indian descent. Students with any form of psychiatric or mental problem were excluded from the study. The students who understands English language were included in the study. The mean age of the participants was 23.45 ± 3.95 years. Males made up 49% of the total subjects, while 51% were females. Out of 578 responses, 81% (467) individuals of overall strength were under moderate stress, in which (229) were males and (239) were females whereas 9% (52) had a low level of stress among which (25) were males and (27) were females while 10% (57) of the participants in which (28) were males and (29) were females were highly stressed.

	Low Stress	Moderate Stress	High Stress
TOTAL	(9%)52	(81%)467	(10%)57

Table:- showing stress percentage

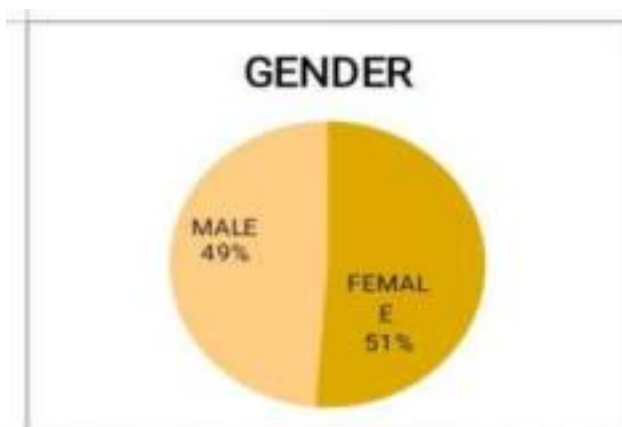


Fig: - Gender Description

3284

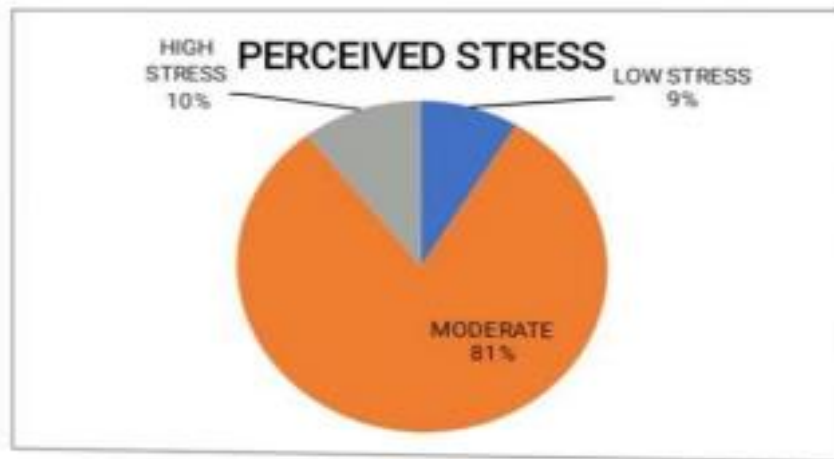


Fig:- Showing Stress Percentage

Discussion

As the WHO had warned, the current coronavirus pandemic is having a negative impact on the psychological state of medical students. Lockdown restrictions and isolation can cause feelings of fear, anxiety, stress and depression. The purpose of this study was to assess medical student's perceptions of stress during online education. In this study we had found that the majority (81%) of medical students reported moderate levels of stress, while 9% reported low levels of stress, which could be related to scholastic, economic or social challenges caused by a lack of social interaction during social distancing. Female students reported slightly higher stress levels than male students, which could be attributable to the fact that female participants made up the majority of the data. Exam results, broad curriculums, parental pressure, separation and fear about the future were all contributors of increased stress.

Because the poll was done during the third wave of COVID-19 disease, the outcomes were unsurprising. India, like many other regions of the world, particularly Europe, has seen a large increase in COVID -19 cases and deaths. In India, the majority of school examinations and higher competitive examinations take held between March and June. According to previous studies, many students in India committed suicide in 2020 as a result of the COVID-19 pandemic, which resulted in academic loss and examination postponement. In the year 2021, having a peak at this time instils worry in students owing to the uncertainty that numerous exams would be held around this time were delayed for unsure times. Nearly one - third of students stated that online examinations were more stressful while about a quarter of students said that on-campus exams were more stressful. The unfamiliarity and lack of important qualities in the E-exam system may contribute to student's worry, given that this is their first encounter with distant E-exams. Remote -E exams have also been reported to be problematic in previous studies. [13] Several previous researches had reveal that stressed students were more likely to be in their first year of medical school than non stressed students. Furthermore, a recent survey among medical and dental students at Liaquat College reported that 77 percent of students have negative

3285

perceptions towards e-learning and they did not choose online learning over the face-to-face modality during the lock down situation. 84 percent of these students said there was little interaction between them and their instructors.[14] COVID 19 had not been demonstrated to have a negative effect on university student's mental health in all research. A research carried out in China on undergraduate medical students showed that only few of this group had moderate (2.7%) or severe (0.9%) anxiety (16, 17).

It is critical to provide education, guidance and acknowledgement about disease prevention and dissemination. The medical curriculum was disrupted by COVID 19 but the system is evolving to support our successful medical education, during the critical period of crisis. Colleges/ Universities can supply students with resources, such as counselling, peer advocacy, and assistance. Additionally, those who are experiencing symptoms of anxiety and depression should seek professional mental health care.

Conclusion

The COVID-19 pandemic is causing death, economic devastation and mental health difficulties. It was evident that this pandemic had elicited a wide range of responses from students, psychiatrists and other allied professionals, and that psychological issues should be considered across different domains and in all age groups and citizens. During the outbreak of the Coronavirus, students like the rest of humanity, had to deal with anxiety and stress. Online stress management programmes are recommended to enhance stress and coping skills, as well as to prevent subsequent mental health difficulties.

References

1. Mangalam, K., Adarsh, S., Akshay, A., Sakshi, A., Yamini, S., Jyoti, S. and Megha, Y., 2020. Impact of COVID-19 on Stress in Collegiate Student. *Prof.(Dr) RK Sharma*, 20(4), p.311.
2. Mangalam Kumari, A.A., Sakshi, A., Yamini, S., Jyoti, S., Megha, Y. and Sajjad, A., 2020. Impact on National and International Global events: The Novel Corona Virus. *Website: www.ijpot.com*, 14(3), p.132.
3. Hernández-García F, Gómez OG, González-Velázquez VE, Pedraza-Rodríguez EM, Zamora-Fung R, Herrera LA. Perceived stress by students of the medical sciences in Cuba toward the COVID-19 pandemic: results of an online survey. *Revista Colombiana de Psiquiatría*. 2021 Apr 30.
4. Torales J, Ríos-González C, Barrios I, O'Higgins M, González I, García O, Castaldelli-Maia JM, Ventriglio A. Self-perceived stress during the quarantine of COVID-19 pandemic in Paraguay: an exploratory survey. *Frontiers in psychiatry*. 2020 Oct 26;11:1155.
5. Sharma, J., Ahmad, I., Jamali, S.N., Sharma, Y., Yadav, M., Arora, S. and Kumari, M., 2021. Impact of covid-19 pandemic and national lockdown on mental health among general urban indian population: An online based cross-sectional survey. *Medico-Legal Update*, 21(1).
6. Khan N, Fahad S, Faisal S, Naushad M. Quarantine role in the control of corona virus in the world and its impact on the world economy. Available at SSRN 3556940. 2020 Mar 18.
3286
7. Abdulghani HM, Sattar K, Ahmad T, Akram A. Association of COVID-19 pandemic with undergraduate medical students' perceived stress and coping. *Psychology Research and Behavior Management*. 2020;13:871.
8. D. Nambiar (2020). The impact of online learning during COVID-19: students' and teachers' perspective. *International Journal of Indian Psychology*, 8(2), 783-793. DIP:18.01.094/20200802, DOI:10.25215/0802.094 Educ. Sci. 2020, 10(9), 232; <https://doi.org/10.3390/educsci10090232>
9. O'Byrne L, Gavin B, Adamis D, Lim YX, McNicholas F. Levels of stress in medical students due to COVID-19. *Journal of Medical Ethics*. 2021 Jun 1;47(6):383-8.
10. Fatima, A., Kumari, M., Jahan, A., Sahu, P.K., Kukreti, P. and Sharma, M., 2021. Survey Based Study on Stress Level and Sleep Quality among Hostelers. *Medico-Legal Update*, 21(2).

11. Saraswathi, Ilango, et al. "Impact of COVID-19 outbreak on the mental health status of undergraduate medical students in a COVID-19 treating medical college: a prospective longitudinal study." *PeerJ* 8 (2020): e10164.
12. Park J, Chung S, An H, Park S, Lee C, Kim SY, Lee JD, Kim KS. A structural model of stress, motivation, and academic performance in medical students. *Psychiatry investigation*. 2012 Jun;9(2):143.
13. 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. *Journal of medical internet research*. 2020;22(9):e21279.
14. Browning MH, Larson LR, Sharaievska I, Rigolon A, McAnirlin O, Mullenbach L, Cloutier S, Vu TM, Thomsen J, Reigner N, Metcalf EC. Psychological impacts from COVID-19 among university students: Risk factors across seven states in the United States. *PloS one*. 2021 Jan 7;16(1):e0245327.
15. Cohen S, Kamarck T, Mermelstein R. Perceived stress scale. *Measuring stress: A guide for health and social scientists*1994;10(2):
16. 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>
17. Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2022). Post-pandemic health and its sustainability: Educational situation. *International Journal of Health Sciences*, 6(1), i-v. <https://doi.org/10.53730/ijhs.v6n1.5949>