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Original Research Article

Perceived Stress Levels and Relieving Strategies Among Medical Students During Three Waves of COVID Pandemic

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Abstract:

Introduction: The Coronavirus disease (COVID-19) spread globally in March 2020. From the beginning of the pandemic to October 4, 2021, the coronavirus infected 235.08 million people worldwide, and 5,009,716 of whom died. As a consequence, remote learning or work, as well as limitation of physical activity, forced unexpected changes in daily life routines. The COVID-19 pandemic impacted the mental health of people around the world, including a high prevalence of depression, anxiety, insomnia, posttraumatic stress disorder (PTSD), and psychological distress.

Objectives: To Assess the nervousness and anxiety level in medical students.

Methodology: The study design was Cross sectional study and qualitative and quantitative type from June 2022- August 2022. The study was planned and conducted among undergraduate medical students of NCRIMS, Meerut.

Result: 93% of respondent spent time with their family and friends, 80% of them used social media, 65% listened to music, 62% used sleep, 51% watched web series and shows, 51% do regular exercise, 39% consumed alcohol and smoking, 22% used to dance or do cooking, 21% read books, 20% do yoga and 8% do meditation to relieve their stress.

Conclusion: The stress is a vital factor that is responsible for a lot of physical and mental changes in medical students. The way a person deals with stress depends on a lot of factors ranging from personal to environmental.

Keywords: Corona Virus (COVID-19), Post Traumatic Stress Disorder (PTSD), Psychological Disorder, Physical Changes, Emotional Changes and Behaviour Changes.

Introduction

COVID-19 infection reported in Kerala, India. On January 27, 2020, a 20 year old female presented to the Emergency Department in General Hospital, Thrissur, Kerala, with a one-day history of dry cough and sore throat. There was no history of fever, rhinitis or shortness of breath.[1]

The second wave of the COVID-19 pandemic began on March 13, 2021, peaked on April 23 (17,937 cases), and ended on June 19, 2021, lasting 99 days.[2]

The third wave of the pandemic in India lasted from January till March 2022, and breakthrough infections were common. Third dose of vaccine was rolled out to priority groups in the beginning of 2022.[3]Stress is the mental and physical response and adaptation by our bodies to the real or perceived changes and challenges in our lives. A stressor is any real or perceived physical, social, or psychological event or stimulus that causes our bodies to react or respond.[3]

Medical education is inherently stressful and demanding. Medical students are likely to face many stressors considering the various roles and responsibilities in personal and professional domains. Medical students usually have long working-hours, need to face various clinical emergencies, and also have academic as well as research works in their training period. Hence, they are vulnerable to suffer from stress and related disorders.[4]

Chronic stress in medical professionals may have a negative impact on learning, performance, problem-solving and decision-making abilities, and ultimately patient care.[5] Chronic stress leads to a predisposition to medical illnesses, such as cardiovascular disorders, peptic ulcers, asthma, psychocutaneous disorders, and many more, which is a well-known fact.[6]

Any stress if left unattended can lead to burn out and can predispose the individual to psychiatric disorders such as depression and anxiety, substance use, and even suicide.[7] Incidence of suicide among young medical professionals is showing an upward trend. Hence, addressing to stress-related psychological problems in medical residents is a necessity of the hour.[8]Effects of stress are dependent on coping skills. A person's coping styles determine if he/she has negative consequences of stress. Coping refers to the thoughts and actions taken to deal with stress. It is a conscious effort to tolerate stress. The coping strategies can be adaptive or constructive that reduces stress levels. However, maladaptive or dysfunctional coping styles are counterproductive and can worsen stress.[9] An insight into the coping styles of the medical residents can be effective for the purpose of addressing their stress. This study was conducted to assess the perceived stress, various physical, emotional and behavioural changes and various relieving strategies adopted by them.

Materials and Methods

Design: The study design was Cross sectional study and qualitative and quantitative type. Data was gathered at NCRIMS. Meerut, UP from June 2022 August 2022. The study was planned to be conducted in 450 undergraduate medical students.

Study Population: Out of 450 undergraduate medical students 432 participated in this study.

Data Collection: The study instrument was PSS – 10 scale which included questionnaire on behavioural, physical and emotional changes along with relieving stress.

Statistical Analysis: Data analysis was carried out utilizing IBM SPSS (Statistical Package for Social Sciences developed by International Business Machines).The significance and relationship were analysed by using Pearson's chi-square test. A P-value of <0.05 was considered statistically significant.

Ethics Consideration: The study received Ethical approval from the Institute Ethics Committee of NCRIMS, Meerut. Anonymity of all students was assured.

Result

In regard to the demographic characteristics of the study subjects, 37% of the study population belonged to age group 23-25 years. 56% of the respondents were males as shown in [table 1].

Table 1: Demographic Data

Age Group	**Frequency**	**Percentage**
17-19	134	31%
20-22	138	32%
23-25	160	37%
Gender	**Frequency**	**Percentage**
MALE	242	56%
FEMALE	190	44%
TOTAL	432	100%

Our study revealed that the PSS-10 scoring shows 25% of the students had mild stress, 45% Moderate stress and 30% of the students had severe stress. The difference in stress levels among all three waves came out to be statistically non-significant. As shown in table-2.

Table 2:Stress Levels (PSS- 10 Scale)

Stress Levels	**Ist Wave**	**IInd Wave**	**IIIrd Wave**	**Frequency**	**Percentage**	**X^2(P)**
Mild	37	33	38	108	25%	
Moderate	72	56	66	194	45%	
Severe	36	43	51	130	30%	3.14
Total	145	132	155	432	100%	0.925

The table no. 3 revealed that 48% of the medical students were irritable, 48% experienced fatigue, 38% were restless and 45% had difficulty in concentrating.

48% of the students had headache, 45% had backache, 70% had constipation, 39% showed changes in eating habits and 12% showed changes in sleeping pattern in the form of Insomnia.57% of the MBBS students worried too much, 54% showed anger, 51% were afraid that the things may go wrong and 48% had intrusive thoughts. According to p value behavioural changes, physical changes & emotional changes all are statistically significant. Thus, they have a deep impact on stress level during all the three waves of covid.

Table 3: Various Behavioural, Physical and Emotional Changes

Behavioural Changes	**Yes**	**No**	**Chi Square**	**P Value**
Irritable	207 (48%)	225 (52%)	11.557	0,091
Fatigue	207 (48%)	225 (52%)		
Restless	164 (38%)	268 (62%)		
Difficulty In Concentrating	194 (45%)	238 (55%)		
Physical Changes	**Yes**	**No**	**Chi Square**	**P Value**
Headache	207 (48%)	225 (52%)	304.9	0.00001
Backache	194 (45%)	238 (55%)		
Constipation	302 (70%)	130 (30%)		
Changes In Eating Habits	168 (39%)	264 (61%)		
Changes In Sleep Patterns(Insomnia)	52 (12%)	380 (88%)		
Emotional Changes	**Yes**	**No**	**Chi Square**	**P Value**
Worry Too Much	246 (57%)	186 (43%)	7.8426	0.494
Anger	233 (54%)	199 (46%)		
Afraid That Things May Go Wrong	220 (51%)	212 (49%)		
Intrusive Thoughts	207 (48%)	225 (52%)		

The table no.4 reveals that 93% of respondent spent time with their family and friends, 80% of them used social media, 65% listened to music, 62% used sleep, 51% watched web series and shows, 51% do regular exercise, 39% consumed alcohol and smoking, 22% used to dance or do cooking, 21% read books, 20% do yoga, 8% do meditation and 68% was following spirituality to relieve their stress.

Table 4: Methods Adopted to Relieve Stress among the Medical Students

Methods	**Yes**	**No**
Listening Music	65%	35%
Using Social Media	80%	20%
Sleeping	62%	38%
Web Series And Shows	51%	49%
Spending Time With Friends And Family	93%	7%
Exercise	51%	49%
Yoga	20%	80%
Meditation	08%	92%
Prayer & Spirituality	68%	32%
Reading Books	21%	79%
Dancing	22%	78%
Cooking	22%	78%
Medication	7%	93%
Consuming Alcohol & Smoking	39%	61%

Discussion

There was significant correlation between the perceived stress among medical students during all the three waves of COVID. This indicates that high perceived stress in these students predisposed to psychiatric morbidity such as anxiety and depression. An another study was done by Goebert D, et al. 2009 [9] revealed that high levels of stress in medical residents lead to depressive symptoms and suicidal ideations. A study was done by Salleh R. 2008 [10] revealed that high levels of stress in medical residents lead to depressive symptoms and suicidal ideations. An another study was conducted by Schneiderman N, et al. 2005 [11] revealed that high levels of stress in medical residents lead to depressive symptoms and suicidal ideations. A study was done by Thomas H, et al. 1994 [12] revealed that the students who employed coping efforts characterized by Engagement strategies suffered from fewer depressive symptoms, the results suggest that training in these types of strategies may be a useful intervention to lessen the negative consequences of stress among medical students. A study was done by Kumar A, et al. 2013 [13]revealed that exercising is the most effecttive way to becoming stress-free. One should exercise daily. This will help to relax and keep mind off things that cause stress. There are a few simple exercises that can help release stress. Walking, light aerobics, jogging, and riding a cycle or bike are some of the simplest ways out of de-stressing. Playing games is also effective in releasing stress. A study was done by Merna A, et al. 2022 [14]which revealed that most of the university students who were recruited reported that the COVID-19 pandemic badly affected their lives and used negative ways to deal with stress, like staying alone and sleeping too much.

In our study, only 8% of respondents were doing meditation, 68% were following spirituality, 20% was doing yoga and 62% were sleeping, a similar study was done by Jain A, et al. 2016 [15] which revealed that positive coping strategies like

meditation, prayer and sleep was found to be very helpful in dealing stress. Negative coping strategies were drug use, smoking, use of social media and alcoholism.

Conclusion

The stress is a huge factor that is responsible for a lot of physical and mental changes in medical students. The way a person deals with stress depends on a lot of factors ranging from personal to environmental.

This study was conducted among medical students to assess the perceived stress levels among them, any physical, emotional or behavioural changes due to stress and various strategies adopted by them to relieve stress.

Recommendation: To combat this emerging problem of stress among medical youngsters. The Future of our nation, there is need of health awareness programme, Counselling sessions, BCC (Behaviour Change Communication) regarding importance of healthy life style for proper behavioural, physical and emotional development. At the institutional level, there is need of preparing "Stress Management Zone". Student council bodies to build their administrative abilities, research work with spiritual approaches, fasting, lifestyle modification along with regular exercise, yoga and meditation.

Limitations of Study: As the study results cannot be generalized to all young population as our sample size was limited to medical students. There is possibility of recall bias in our study which cannot be excluded. Our self-report method may be prone to underreporting the stress related problems.

Authors Contribution: RR had participated in the research study with concept, literature search, data collection. RR, BP, PP, SS,&SA contributed in preparing design, preparing manuscript, editing and reviewing of manuscript.

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