

**Descriptive Study**

## **Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur During the COVID - 19 Pandemic: A Descriptive Study**

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### **ABSTRACT**

**Background:** COVID-19 has impacted every aspect of life around the world. Education has moved from offline to online classes. Undoubtedly, the period has been stressful for every student irrespective of different stream of studies. It has been observed that each year medical institute has its own unique and significant stresses preventing students from fully adapting to the challenges. Researches have reported that students have been highly vulnerable to mental health issues during the COVID-19 pandemic. So, the study was taken up to assess Perceived stress among the medical and health science undergraduate students during the pandemic. **Methods:** A descriptive study was conducted with the aim to evaluate the levels of perceived stress of medical and health science undergraduate students, to assess the relationship between perceived stress and stream of the study and socio demographic correlates with perceive stress among undergraduate students of RIMS, Manipur on a sample of 369 participants consisting of 276 female students and 93 male students. Self-prepared socio demographic data sheet and Perceived Stress Scale (PSS-10) were utilized. **Results:** The study showed that of the 369 participants 12% were having high perceived stress, 74% were in moderate perceived stress and 14% were having low range of perceived stress. Further, the study revealed B.Sc Nursing students were having higher perceived stress than MBBS students. Higher perceived stress was observed among female participants than male participants. **Conclusion:** The findings of the study proved the presence of significantly higher level of perceived stress among the participants suggesting that students' mental health during the pandemic is at high risk.

**Keywords:** *Perceived Stress, Medical and Health Science*

COVID-19 has impacted every aspect of life around the world. Education has moved from offline to online classes. Undoubtedly, the period has been stressful for every student irrespective of different stream of studies. Engaging in virtual classes seems to be challenging for students. It has been observed that each year medical and healthcare institute has its own unique and significant stresses preventing students from fully adapting

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## **Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur During the COVID -19 Pandemic: A Descriptive Study**

to the challenges. Students are overwhelmed by the vast amount of knowledge they have to learn, need preparation for board examinations. Moreover, students are sent on clinical rotations to begin real world application of their knowledge with focus on graduation, and matching into a residency program. Most of the students are well adjusted with the pressure and demand to typical medical and health science education system however, there are few such students with higher perceived stress that lead to reduced productivity and later on affects the quality of education. It is well known that prolonged and excessive experience of stress may even lead to mental disorders. Researches have reported that students have been highly vulnerable to mental health issues during the COVID-19 pandemic.

Stress refers to a “situation in which internal demands, external demands, or both, are appraised as taxing or exceeding the adaptive or coping resources of an individual or group” [1]. Stress is an important factor responsible for poor performance of medical students medically, professionally, and socially. On the one hand, stress is associated with several diseases [2], and on the other it is recognized as a cause of loss of interest, unprofessional behaviors, and burnouts.[3] Medical and Health Science Undergraduate students can suffer from a high level of stress during their education program. Specifically, there are two significant sources of stress among students: academic and clinical stressors. The stressors related to academia include heavy assignments, examinations, and workloads. Other sources of stress related to the clinical area for students include a lack of professional skills and unfamiliarity with patients’ diagnoses, medical history, or treatment [1]. The specific stressors related to the impact of COVID-19 among students are stress from COVID-19 infection and a lack of preventive measures in clinical training [4]. This period has been undoubtedly stressful for learners; with classes moving online, students face difficulties, such as being unable to concentrate and having difficulties participating, writing assignments, taking exams, and meeting the deadlines of academic assignments [5].

Online classes via means of web-based applications and online portals were initiated in a few medical institutions; however, clinical and practical training has no alternative. The students are young and inexperienced and can be misled through wrong and depressing information. Students can also get demotivated by the perceived apathy and helplessness of the health care linkages, which may be devastating for their future career. The high level of anxiety among students was worrisome as students may get disillusioned to continue their career in this noble profession soon if corrective steps are not taken timely. So, the study has been taken up to determine the level of perceived stress among medical and health science undergraduate students.

### **MATERIAL AND METHODS**

The present study used descriptive design with the objectives to evaluate the levels of perceived stress of medical and health science undergraduate students; to assess the relationship between perceived stress and stream of the study and socio demographic correlates with perceived stress among undergraduate students of RIMS, Manipur on a sample of 369 participants consisting of 276 female students and 93 male students during a three-week period in April 2021. Informed consent was taken from voluntarily agreed participants. Self-prepared socio demographic performa (gender, age and education) and Perceived Stress Scale (PSS-10) [6] were utilized. The PSS includes 10 questions using a 5-point Likert type rating scale from 0 (never) to 4 (very often) to measure the level of stress participants experienced in the past month. However, to reflect perceived stress during the COVID-19 pandemic, “you had the following experiences because of COVID-19” was

## Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur During the COVID -19 Pandemic: A Descriptive Study

added to the PSS. The total score of all 10 items is used to measure the level of perceived stress; a higher score indicates higher stress. The cut-offs of 13 and 26 were used to categorize the total score into low, moderate and high level of stress. This scale has been shown to have a high level of reliability and validity and has been used in a wide variety of populations and settings worldwide.

### RESULTS

The study was based on the 369 undergraduate medical and health science students of RIMS Imphal. The analysis was made on the basis of the objectives of the study.

*Table 1: Characteristics of Undergraduate Medical and Health Science Students of RIMS*

Factor	Frequency	Percentage (%)
<b>Stream of Study</b>		
B. Sc in Nursing	191	51.76
MBBS	178	48.24
<b>Gender</b>		
Male	93	25.3
Female	276	74.7
<b>Age Category</b>		
Late Adolescent	76	20.60
Young Adult	293	79.40
<b>Types of Family</b>		
Joint Family	167	45.25
Nuclear Family	202	54.75

Among 369 participants eligible in data analysis, 51.7 % were nursing students and 48.2 % were MBBS students; most were females with 74.7% and 25.3% were males. 20.6% participants were in late adolescent and 79.4% participants were young adult. With regard to types of family, 45.25% of participants belonged to joint family and 54.75% belonged to nuclear family.

Table 2 presents the level of stress participants perceived in the last month because of COVID-19 pandemic. Participants reported a high level of stress in almost all questions in the PSS. 77% were felt upset and about 82% felt angered, nervous and stressed during the last month. Moreover, 70% reported with inability to cope with all the things that they had to do.

**Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur  
During the COVID -19 Pandemic: A Descriptive Study**

**Table 2 Perceived Stress among Undergraduate Medical and Health Science Students during COVID-19 Pandemic (N=369)**

In the past month, you had the following experience because of Covid-19	Distribution (n%)					Mean /S.D.	Yes n%
	Never(0)	Almost Never(1)	Sometimes(2)	Fairly often (3)	Very often (4)		
1. Been upset because of something that happened unexpectedly	29(7.8)	53(14.4)	184 (49.8)	59(16.1)	44(11.9)	2.1(1.04)	286(77.7)
2. Felt that you were unable to control the important things in life	49(13.3)	75(20.3)	148 (40.1)	60(16.3)	37(10.0)	1.9(1.39)	244(66.3)
3. Felt nervous and stressed	19(5.1)	46(12.5)	150(40.6)	98(26.6)	56(15.2)	2.4(1.04)	303(82.3)
4. Felt confident about your ability to handle your personal problems	67(18.2)	125(33.9)	135(36.5)	29(7.9)	13(3.5)	1.5(0.998)	176(47.8)
5. Felt things were going your way?	22(5.9)	95(25.8)	160(43.4)	60(16.3)	32(8.6)	1.9(1.013)	251(68.2)
6. Could not cope with all the things that you had to do?	38(10.3)	67(18.2)	154(41.7)	70(19.0)	40(10.8)	2.02(1.109)	263(71.5)
7. Been able to control irritations in your life?	57(15.5)	138(37.5)	114(30.7)	41(11.1)	19(5.2)	1.5(1.047)	173(47.01)
8. Felt that you are on top of things	23(6.2)	40(10.8)	135(36.7)	107(29.0)	64(17.3)	2.4(1.095)	305(82.9)
9. Been angered because of things that were outside your control?	36(9.7)	65(17.6)	130(35.2)	78(21.2)	60(16.3)	2.2(1.186)	267(72.6)
10. Felt difficulties were piling up so high that you could not overcome them	51(13.8)	81(22.0)	135(36.6)	69(18.7)	33(8.9)	1.9(1.48)	236(64.13)
PSS score						19.72(5.92)	
Perceived stress category						n (%)	
Mild						52(14)	
Moderate						273(74)	
High						44(12)	

Note: "No= Never, Almost never; Yes=Sometimes, Fairly often, Very often

Based on the cut-off of 13 on the PSS, more than 80% participants were identified as having a certain level of stress because of COVID-19.

**Table3: Mean & S.D. of perceived stress with stream of study of the participants**

Stream of study	Mean	S.D.	t-value	d.f.	p-value
B.Sc Nursing	20.70	5.21	3.299	367	0.001**
MBBS	18.69	6.43			

\*\*t-test is highly significant at 0.01 levels

Table 3 showed mean and S.D. of perceived stress of B.Sc in Nursing (Mean ± S.D.=20.70± 5.21) and MBBS students(Mean ± S.D.=18.69 ±6.43) respectively. Highly significant relationship has been observed between perceived (t-value=3.299; p= 0.001) which indicated that B.Sc nursing students were at higher risk as indicated by higher score on perceived stress as compared to MBBS students.

**Table 4: Demographic characteristics and perceived stress of the participants**

Variable	Levels of Perceived Stress				χ <sup>2</sup>	d.f.	p-value
	Low (0-13)	Moderate (14-26)	High (27-40)	Total			
Female	22(8%)	219(79%)	35(13%)	276(100%)	33.902	2	0.001**
Male	30(32%)	54(58%)	9(10%)	93(100%)			
Total	52(14%)	273(74%)	44(12%)	369(100%)			
Age							
Late Adolescent	12(16%)	52(68%)	12(16%)	76(100%)	1.795	2	0.408
Early Adult	40(14%)	221(75%)	32(11%)	293(100%)			

**Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur  
During the COVID -19 Pandemic: A Descriptive Study**

Total	52(14%)	273(74%)	44(12%)	369(100%)			
Types of Family							
Joint Family	21(13%)	120(72%)	26(15%)	167(100%)	4.084	2	0.130
Nuclear Family	31(15%)	153(76%)	18(9%)	202(100%)			
Total	52(14%)	273(74%)	44(12%)	369(100%)			

\*\*t-test is highly significant at 0.01 levels

Table 4 demonstrates the percentage of low, moderate and high level of perceived stress of female participants (8%, 79% and 13%) and male participants (32%, 58% and 10%) respectively. High significant relationship has been observed between gender of the participants and levels of perceived stress ( $\chi^2=33,902$ ;  $p= 0.001$ ) which suggested that female participants were having higher perceived stress when compared to their male counterpart. Further, the table reflects the percentage of low, moderate and high levels of stress of late adolescent were 16%, 68% and 16% respectively and that of young adult were 14%, 75% and 11% respectively. Insignificant relationship has been found between age of the participants and levels of perceived stress ( $\chi^2=1.795$ ;  $p= 0.408$ ). Furthermore, the table also reflects the percentage of low, moderate and high level of perceived stress of participants belonged to joint family (13%,72% and 15%) and participants belonged to nuclear family (15%,153% and 9%) respectively. Insignificant relationship has been observed between types of family of the participants and levels of perceived stress ( $\chi^2=4.084$ ;  $p= 0.130$ ).

## **DISCUSSION**

In the early stage of COVID-19 pandemic in Manipur, all schools and universities were closed. Later on, students were provided with online classes which seemed to be stressful to them. The high level of stress found in the study is reasonable and is similar to those reported in previous studies. The participants in this study reported moderate to high levels of perceived stress, which was consistent with other studies regarding the level of perceived stress of undergraduate medical and health science students during the COVID-19 outbreak [7, 8]. The proportions of moderate to high levels of perceived stress differed from some studies conducted using the same instrument (PSS-10). The rate of undergraduate medical and health science students with moderate to high levels of PS in this study were 86%, which was in line with a study in Nepal (82.0%) [8]. However, a higher proportion was reported in dental students from Pakistan (96.9%) and nursing students (96.01%) in Pune [7,9]. The potential reasons for such variability may be that (1) the severity and isolation modes of COVID-19 prevention and control vary during the different survey times and locations and (2) the characteristics of the investigation population are different. For instance, studies revealed that dental and nursing students experienced higher PS due to early practice stage [10, 11]. A study done among Hong Kong healthcare students using the same measurement scale (i.e., PSS-10) during the SARS outbreak in 2004 reported a mean score on the PSS of 18.4 (SD 4.6) [12]. Another study has shown that in 1091 people in 41 countries indicated a mean score on the PSS of 17.4 (SD = 6.4) [13]. The finding of the present study (M=19.72, SD=5.92) is very much higher compared to the cutoff of 13 normally used to identify those with stress[14]. Although there were encouraging results from present study where students had positive responses for some items in the PPS such as “felt confident about your ability to handle personal problems”, the present findings and other evidence from literature before and during the COVID-19 confirm the negative psychological effect among undergraduate medical and health science students.

## Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur During the COVID -19 Pandemic: A Descriptive Study

Further, the finding of the present study revealed that B.Sc Nursing students had more perceived stress as compared to MBBS students. The perceived stress levels and poor concentration emerged in another cross-sectional study by [15]. The study on 662 nursing students in Turkey evaluated nursing students' views on the COVID-19 pandemic and their perceived stress levels. The study proved that the nursing students suffered from moderate stress levels, but they had higher levels of stress than students assessed in the previous year. Nursing students expressed concerns about their clinical practice and inadequate clinical skills related to the interruption of education and moving to online learning during the pandemic. The findings were confirmed in another study [16], where they undertook a cross-sectional descriptive study on 244 nursing students in India. The authors assessed the perceived stress among nursing students during the COVID-19 lockdown. The study established that nursing students had moderate levels of stress related to a lack of resources and distance learning challenges. Furthermore, female students had more perceived stress than male students in the present study. This finding corresponds to previous epidemiological studies which reported that females were at higher risk of developing stress under disarmed situations. [17,18] In a study conducted in Egypt, where PSS was used, female medical students reported to have higher stress than nonmedical students (OR 2.55, 95% CI: 1.2, 5.5) [19]. One of the reasons may have been underreporting of stress by males as they consider it as sign of weakness and not fitting to masculinity [20].

### CONCLUSION

In conclusion, although public health and preventive medicine students reported relatively good knowledge, attitude and skill toward COVID-19 prevention and protection as well as the preference for positive, adaptive coping strategies, they experienced a high level of stress during the COVID-19 pandemic. These findings reveal a need for further studies and intervention for this population, especially those who have a higher risk of stress. Since the increased understanding about COVID-19 may help reduce the fear of it and thus reduce COVID-19 related stress, fundamental courses of COVID-19 are likely to be beneficial for this population. Considering the increased level of stress due to COVID-19 Pandemic among students, the authority of RIMS has granted permission for opening of Student Wellness Clinic in the Department of Psychiatry, RIMS, where both Psychiatrist and Clinical psychologist started providing various treatment modalities such as psychological assessment of the students at risk, online and offline counseling, brief and quick stress management techniques such as relaxation therapy, breathing exercises, biofeedback, mindfulness techniques along with psych educational sessions on stress management.

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**Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur  
During the COVID -19 Pandemic: A Descriptive Study**

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**Perceived Stress Among Medical and Health Science Undergraduate Students of RIMS, Manipur  
During the COVID -19 Pandemic: A Descriptive Study**

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***Conflict of Interest***

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