

Effect of Covid-19 Lockdown on Perceived Stress Scale in Medical Students

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Abstract

Background: Stress is defined as the physiological and psychological state which could overburden an individual's ability to appropriately respond to it. In India, the corona virus pandemic had created a sudden closure of educational institute which leads to shift of conventional classes to virtual classes because of which the medical students were in a stage of dilemma. The present study aimed to assess perceived stress during the COVID 19 lockdown, among the medical students.

Aim and Objectives: To assess the perceived stress of medical students in regard to corona pandemic lockdown.

Materials and Method: A cross-sectional online survey study was done on 300 medical students whose perceived stress were assessed using an online questionnaire. The stress test was done with the help of Perceived Stress Scale (PSS) which has got 14 items.

Results: In 300 medical students (151- boys and 149 girls), the mean perceived stress score was observed as 27.60. In boys the PSS score was found to be 27.85 and in girls it was 27.52. When the score were compared with the mean validated score the students were having moderate amount of stress (p value < 0.05).

Conclusion: The present study concluded that the medical students perceived the moderate level of stress. The study thus concludes that lockdown has affected the psychological well being of medical students.

Keywords: COVID 19, lockdown, Perceived Stress Scale, Medical Students.

Introduction

Stress is considered as a structured series of physiological, neuro-hormonal and psychological response to situations that threatens or challenges us and that require some kind of adjustment. Stress primarily signifies condition of disturbed normal functioning due to imbalance between individual's interactions with the environment. Stress is an adaptive response to noxious stimulus causing disturbance in normal functioning.¹

Corona virus pandemic lead to the global lockdown and all activities were forced to close. Normal daily routine was disturbed with many of people was forced to stay in the house. Meeting with friends, dining out,

worshiping and other daily routines were nearly halted as nations took drastic steps to try to stop the corona virus pandemic. All educational Institutes and Universities were closed and students were sent to their respective hometowns during lockdown period. The whole country was staying indoors and hoping that corona pandemic will slow down. During this lockdown period which continued for more than 100 days many people suffered from psychological disturbances. These psychological disturbances may be due to academic problem, lack of adjustment to stay indoors for long period, financial insecurity, job problems, family problems, future planning problems etc.

Medical education which starts with rigorous

competitiveness in selection process is very stressful affair. Also the medical course is of long duration and syllabus is vast so this makes students more vulnerable for higher level of stress. Delay in learning process, lack of conceptual knowledge and hands on training due to lockdown gives stress to the medical students because of uncertainty of their future. The COVID-19 pandemic has affected mental health of individual due to many reasons like economic loss, confusion, emotional isolation, school/work closure, insecurity, etc. Because of this people are more prone to emotional disturbances & psychological instability like stress, irritability, frustration which leads to psychiatric disorders like behavioural changes, anxiety depression and trauma related disorders.^{2,3,4}

We conducted the study using Perceived Stress Scale (PSS) questionnaire which is associated with direct changes to both physiologic and psychological processes.⁵ The PSS is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. The scale includes a number of direct queries about current levels of experienced stress.

The aim of this study was to see the Perceive Stress scale (PSS) score in medical students during the lockdown period of Covid-19 pandemic. This study would help to evaluate the amount of stress perceived by the medical students during lockdown.

Material and Method

The cross sectional study was performed on randomly selected 300 medical students (N= 151 boys and N= 149 girls) with age group of 18- 25 years studying in Datta Meghe Institute of Medical Sciences (DMIMS) Sawangi (M), Wardha. The study was conducted during

the COVID -19 pandemic lockdown period in April and May 2020. All the students gave consent for the study and they were provided with PSS questionnaire which contains 14 items (questions). The questionnaire was made available online in English and Hindi language. PSS is associated with direct changes to both physiologic and psychological processes. This scale helps to measure the perception of stress by an individual. The scale includes a number of different questions about present levels of experienced stress. In this scale there are 14 items which are easy to understand, and the response alternatives are simple to understand. The questions ask about feelings and thoughts during the last month. Out of the 14 items, 7 items (item number on PSS as 1,2,3,8,11, 12,14,15) are neutrally stated questions which indicate that if the stress score is more then more is the stress perceived by the subject .Remaining 7 questions (item number on PSS as 4, 5,6,7, 9,10 & 13) are positively stated questions means scores get reversed i.e. more is score; less is the severity of stress perceived.⁵ Average score all 14 items of 300 subjects were calculated. Statistical analysis was done by descriptive statistics.

Results

A total of 300 medical students (Boys – 151, Girls – 149 students) included in the study and had completed the whole PSS questionnaire. Table no 1 gives gender wise and overall average PSS score findings. The mean perceived stress score among the students was 27.60 ± 8.13 (Mean \pm Standard deviation) . When the data is compared with the validated data of PSS- 14 scale which suggest average score of 19.62 showed significant difference ($p < 0.0001$) between the gender wise and average distribution.

Table no 2 shows average score of 300 students for each item.

Table No. 1: Total and Gender wise average PSS score

Gender wise distribution	Mean PSS score \pm standard deviation (SD)	t test
Boys (n- 151)	27.85 ± 8.32	p value < 0.0001
Girls (n- 149)	27.52 ± 8	
Total (n - 300)	27.6 ± 8.13	

Table No. 2: Average score for each item of PSS

Item number as per Perceived Stress Scale (PSS) having neutrally stated questions	Average score of each item (n-300)	Item number as per Perceived Stress Scale (PSS) having positively stated questions	Average score of each item (n-300)
1	2	4*	1.9
2	1.8	5*	2
3	2	6*	2.4
8	1.9	7*	1.7
11	2.1	9*	1.9
12	2	10*	1.6
14	2	13*	2.3

Discussion

In this study we assessed perceived stress on medical students during covid-19 lockdown period. Pandemic which is a health emergencies can have psychological impact on college students such as stress, anxiety etc. The PSS is stress assessment instrument. The scale is useful to understand how different situations affect our feelings and our perceived stress. The questions in the scale ask about your thoughts & feeling in the last month⁵.

The corona disease has high transmission rate and has dangerous effect on health. To prevent this spread of infection Government authorities undertook various norms of lockdown which included social distancing, no mob gatherings, no classroom teachings.⁶ The lockdown leads to changes in daily routine life which causes stress, anxiety and depression among the peoples.⁷ The news headlines, whatsapp updates, information from colleagues and news reports have also leads to fear and anxiety.⁸ Students had been residing at home and teaching has been online since then which causes lack of classroom environment, assignments which adds to the stress.

In current study it was found that, average 14 item PSS scale score is 27.60. The results were compared with the previous evaluation of PSS scale in healthy populations. From the validation studies, the mean score for 14 item PSS scale was 19.62 in healthy population.^{9,10} The average score of the PSS and gender wise distribution showed significant difference ($P < 0.0001$) when compared with the validated score which suggest the moderate amount of stress in medical students. However, when average PSS score of boys and girls were compared there was no significant difference in stress between the two.

Similar findings were found in the other study conducted by Qiu et al., which showed that there was significant psychological distress due to COVID 19 pandemic using a novel Career and Personal Development Institute scoring.¹¹ Senturk et al (2018) in Turkey determined in a descriptive study done on the nursing students that the level of stress faced by them was above moderate level.¹² Sheroun D et al study indicates moderate level of perceived stress with mean perceived stress score of the students nurses being 21.88.¹³ So the present study highlights that the moderate level of stress is experienced by the medical students due to this pandemic during lockdown period.

Conclusion

This study concluded that the moderate amount of stress is experienced by the medical students in lockdown period and that it can be reduced by providing mental support, counseling & assurance to perform better in their academics.

Ethical Clearance: Taken from institutional ethics committee.

Source of Funding: Self.

Conflict of Interest: Nil.

References

- 1) Muley P et al. Effect of exam stress on reaction time in medical students; Indian Journal of Basic and Applied Medical Research; September 2016: Vol.-5, Issue- 4, P. 733-739.
- 2) Mosley TH Jr., Perrin SG, Neral SM, Dubbert PM, Grothues CA, Pinto BM; Stress, coping, and

- well-being among third-year medical students. *Acad Med* 1994;69:765-7.
- 3) Schwenk TL, Davis L, Wimsatt LA. Depression, stigma, and suicidal ideation in medical students. *JAMA* 2010;304:1181-90.
 - 4) Dyrbye LN, Shanafelt TD. Commentary: Medical student distress: A call to action. *Acad Med*; 2011 Jul;86(7):801-3.
 - 5) Sheldon C et al. A Global measure of Perceived Stress; *Journal of Health and social behavior*,1983,24,385-396
 - 6) Baud D, Qi X, Nielsen-Saines K, Musso D, Pomar L, Favre G. Real estimates of mortality following COVID-19 infection. *Lancet Infect Dis.* 2020; 7
 - 7) Roy D, a Tripathy S, Kara K S, Sharma N, Kumar S Verma, Kausha V . Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian Journal of psychiatry.* 2020; 51
 - 8) Ayittey K F, Ayittey K M, Chiwero N, Kamasah S J, Dzuvo C . Economic impacts of Wuhan 2019-nCoV on China and the world. *J Med Virol.* 2020;1–3 DOI: 10.1002/jmv.25706
 - 9) Salene M. Wu and Dagmar Amtmann; Psychometric Evaluation of the Perceived Stress Scale in Multiple Sclerosis; Hindawi Publishing Corporation; ISRN Rehabilitation Volume 2013, Article ID 608356
 - 10) Cohen S and Williamson G, “Perceived stress in a probability sample of the United States,” in *The Social Psychology of Health*, S. S. A. S. Oskamp, Ed., pp. 31–67, Sage, Newbury Park, Calif, USA, 1988.
 11. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: Implications and policy recommendations. *Gen Psychiatr* 2020;33:e100213.
 12. Senturk S, Dogan N T, Determination of the Stress Experienced by Nursing Students’ During Nursing Education . *International Journal of Caring Sciences* May-August 2018; 11 (2) 896
 13. Sheroun D, Wankhar DD, Devrani A et.al. A study to assess the perceived stress and coping strategies among B.Sc. nursing students of selected colleges in Pune during COVID-19 pandemic lockdown. *International Journal of Science & Healthcare Research.* 2020; 5(2): 280-288.