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**Original Article**

# Emotional intelligence and perceived stress against the backdrop of the Covid-19 Pandemic among students of a medical college in Pakistan: A cross-sectional correlational study

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## ABSTRACT

**Introduction:** There is scant knowledge about emotional intelligence and pandemic perceived stress scores of medical students in Pakistan. The Covid-19 Pandemic has underscored the reality of a myriad of problems in medical education, academic stress amongst them. This study aims to find the corelation between emotional intelligence and pandemic perceived stress scores of students in a medical college in Pakistan. Socio-demographic factors are used tofind possible correlations and divergences between pandemic perceived stress scores and emotional intelligence in undergraduate medical students.

**Objective:** The primary objectives are an exploration of the demographic attributes of participants, an assessment of students' levels of perceived stress during the COVID-19 pandemic and emotional intelligence, and an exploration of a correlation between pandemic perceived stress scores and emotional intelligence

**Methods:** The present study utilizes a descriptive, cross-sectional, correlational design. A convenience sample of 86 medical students in the first and second years of MBBS were recruited for the study. The participants completed a self-report questionnaire, covering three sections: demographic factors, pandemic perceived stress (the Perceived Stress Scale) and, emotional intelligence (the MindTools test).

**Results:** The results demonstrated that majority of the participants (86%) had an average level of emotional intelligence. Only 14% had high levels of emotional intelligence. A negative non-significant correlation was noted between Pandemic perceived stress scores and emotional intelligence. While a significant difference ($P< 0.01$) was noted between the Pandemic perceived stress scores of males and females, with females exhibiting more stress than males. A slightly less significant difference ($P<0.05$) for Pandemic perceived stress was also found between students of first and second years medical students. Second year students were observed to exhibit greater stress.

**Conclusion:** The study findings demonstrate that emotional intelligence does not significantly differ by educational year or gender while greater levels of Pandemic perceived stress was noted to differ across genders and educational years. However, lower levels of Pandemic perceived stress were associated with higher (although non-significant) levels of emotional intelligence. It is thus, important to impart pertinent information about emotional intelligence to medical students. It is also essential to teach them to identify and therefore, overcome stressors. Information and guidance about stress and emotional intelligence should be incorporated into the curricula of health-related fields.

**KEYWORDS:** Emotional intelligence, Pandemic, perceived stress, correlational study, medical students

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## INTRODUCTION

Perceived stress is the amount of stress a person is believed to have experienced over a particular duration(Phillips, 2012). The levels of stress amongst university students are found to be high, in particular levels of stress amongst students of health-related fields (Enns, Eldridge, Montgomery, & Gonzalez, 2018). An Indian study discovered that amongst all the nursing students involved in the study, 82% reported moderate levels of stress. The key stressors in this study were the academic load, interface concerns, inadequate free time, examination anxiety and the behavior of other health professionals towards nursing(Nebhinani, Kumar, Parihar, & Rani, 2020). A study of Brazilian nursing students revealed lower stress levels during the course of COVID 19 . Insufficient time for family, rest and extra-curricular interests was the main stressor in this set of students while medical training, interpersonal connections , and time planning were additional stressors(Soares-de-Souza et al., 2016). In an Ethiopian study 63.7% of the study participants were discovered to suffer stress(Madebo, Yosef, & Tesfaye, 2016). Two independent students in KSA revealed that 33.8% and 71%

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of the study participants experienced severe stress while an Indian students corroborated the latter results, demonstrating higher stress levels in the students belonging to the medical faculty(Al Sunni & Latif, 2014; Saeed, Bahnassy, Al-Hamdan, Almudhaibery, & Alyahya, 2016). Iranian students belonging to the medical faculty were compared for their stress levels with paramedical students. The study showed that the perceived stress levels of all students belonging to the faculty of health sciences were high. Amongst them, the students of medicine had higher perceived stress compared to the ones from the paramedical faculty(Moayedi, Bastami, Ashouri, Hamadiyan, & Rasekhi, 2016). Promoting the physical well-being and fostering psychological health of undergraduate students requires identification and redressal of the underlying causes of stress. Unfavorable psychological, physical and, spiritual health consequences can develop in students exposed to persistent stress(Enns et al., 2018).

Emotional intelligence is found associated with the capability or a self-perceived sense of being able to influence the feelings of one's own self and of others (Serrat, 2017). High levels of self-awareness are linked with higher levels of emotional intelligence. Emotionally intelligent individuals are optimistic, sensitive, and, flexible and the trait is connected with numerous skills linked to self-control and emotional cognizance. Thus, helping individuals manage their feelings(Aradilla-Herrero, Tomás-Sábado, & Gómez-Benito, 2014). This quality of emotional intelligence to help individuals manage their emotions has led to recent research documenting a link between being stressed and the level of emotional intelligence. It is argued that emotional intelligence has an important part to play in the regulation of stress and the levels of perceived stress. The role of emotional intelligence is crucial when considering students and professionals belong to the health sciences and health-care related fields respectively (Ranasinghe, Wathurapatha, Mathangasinghe, & Ponnamperuma, 2017).

The WHO declared the COVID-19 outbreak a pandemic as the worldwide cases increased exponentially(Organization, 2020). The declaration was formally announced on the 11th of March 2020. Studies were undertaken soon after to realize the impact of covid-19 on the health of professionals. One such study among medical students has provided evidence for the likely adverse psychological effects of COVID-19 on the cohort. Moderate to severe rates of psychological distress were noted among most of the responders(O'Byrne, Gavin, Adamis, Lim, & McNicholas, 2021).

Therefore, there exists a need to study the link between emotional intelligence and perceived stress, especially amongst medical students. The Pandemic is a unique backdrop. Understanding the influence of emotional intelligence in association with Pandemic perceived stress may help develop better stress-relieving strategies for students. This study aims to improve upon existing literature and broaden the scope of future academic and clinical research in the field. An evaluation of Pandemic perceived stress scores and emotional intelligence among undergraduate medical students at a Pakistani medical college has been carried out through this particular study.

The primary objectives include:

1. An exploration of the demographic attributes of participants

2. An assessment of students' levels of perceived stress during the COVID-19 pandemic and emotional intelligence.

3. An exploration of the likelihood of a correlation between pandemic perceived stress scores and emotional intelligence.

4. A realization of the differences between emotional intelligence and perceived stress, based on student sociodemographic characteristics.

## METHODS

A co-relational study was designed. The study involved 86 participants belonging to the first two years of M.B.B.S, studying a private medical college in Faisalabad. The sample was collected using the purposive sampling methodology. A structured questionnaire was formulated following a literature review and an overview of available resources. The questionnaire was developed in the form of a checklist with 3 distinct parts. Respondents' demographic profiles made up the first section, while the second used the Pandemic perceived stress scale tool (PSS-10-C) consisting of 10 questions. Each item has five responses on a Likert scale which include ''never", ''almost never", ''occasionally", ''almost always", and ''always". Items 1, 2, 3, 6, 9, and 10 were scored directly from 0 to 4. From 4 to 0 was the scoring for the items numbered 4, 5, 7, and 8 (Campo-Arias, Pedrozo-Cortés, & Pedrozo-Pupo, 2020). The Mind Tools test to assess emotional intelligence was the third part of our questionnaire. The works of Goleman (1996) have been incorporated into this 5-item Likert scale tool which uses 15 questions with responses from 1 (not at all) to 5 (very often)(Jonassen & Cho, 2008). The emotional intelligence of respondents is calculated directly proportional to their total score on the test. Depending on their scores, participants in this study were categorized into those with average and higher levels of emotional intelligence. The ones with average emotional intelligence scored 35–55, while the students with high emotional intelligence had scores ranging from 56–75. None of the participants demonstrated low levels of emotional intelligence by scoring in the range of 15-34. The Mindtools test employed here was developed by Goleman and was employed due to its reliability and a high Cronbach's alpha coefficient of 0.81(O'Connor, Hill, Kaya, & Martin, 2019).

Data-collection was accomplished over a month (from July 2021 to August 2021). Printed questionnaires were given to students of the first two years of M.B.B.S. A total of 86 students responded, and a response rate of 54% was noted. Thus, a response rate of 54% was noted. A researcher had the questionnaires collected from the participating students after approximately an hour following distribution. The filled questionnaires were compiled for statistical testing and analysis. After tabulation, scoring, and analysis of the data, descriptive and inferential statistics were applied using the IBM SPSS version 25.0 software. Non parametric tests were used as the data was not normally distributed and the data type was ordinal. Thus, requiring the application of Nonparametric tests. The Mann-Whitney U test was used to determine significant differences by academic year for both emotional intelligence and perceived stress. A Spearman rank correlation was applied to find correlation between perceived stress and emotional intelligence.

## RESULT

Table 1 presents the sociodemographic attributes of the respondents. The study sample of 160 students had 54% responses. Second year students included the majority of the respondents(n = 61). 55.8% of the respondents were female. 29.1% of the study participants were first-year while 70.9% were second-year students. Nearly all of the students answering this question were satisfied with their choice of profession except one.

**TABLE I SOCIODEMOGRAPHIC CHARACTERISTICS (N=86)**

| | | N | % |
|---|---|---|---|
| Gender | Male | 38 | 44.2 |
| | Female | 48 | 55.8 |
| Educational Year | First Year | 25 | 29.1 |
| | Second Year | 61 | 70.9 |
| Satisfaction about profession | Satisfied | 60 | 98.4 |
| | Dissatisfied | 1 | 1.6 |

Figure 1 demonstrates the distribution of emotional intelligence among respondents. According to the 3 grades established by Goleman, (Goleman, 2012; MindTools, 2008), most participants i.e. 74 (86%) of them had average emotional intelligence while only 12 (14%) had high levels of emotional intelligence. None (0%) of the students possessed low levels of emotional intelligence.

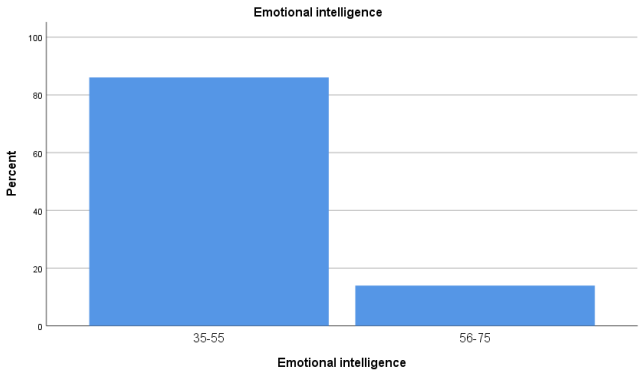


Fig I Distribution Of Emotional Intelligence (N=86)

No significant difference was observed when comparing participants' emotional intelligence across gender and across different educational years.

A significant difference (P< 0.01) was noted when comparing the Pandemic perceived stress between males and females. A slightly less significant difference (P<0.05) for Pandemic perceived stress was found between students of first and second years.

Fig 2 shows the distribution of Pandemic perceived stress scores according to the PPSS-10-C scale. The scale uses 25 as the cut-off value, with individuals scoring higher than or equal to 25, relegated to the highly stressed category. According to our study 27.9% (24) of the study participants displayed high levels of Pandemic related stress while 79.1 % (62) exhibited lower levels of Pandemic-perceived stress scores.

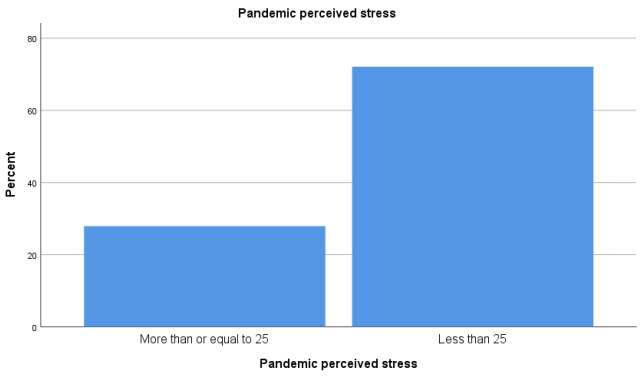


Fig II- Distribution Of Pandemic Perceived Stress Score Among Medical Students Of First & Second Years (N=86)

Table 2 shows a negative and statistically insignificant correlation (p = 0.65, Spearman correlation co-efficient = –0.49), observed between the emotional-intelligence and Pandemic perceived-stress scores of participating students. The results demonstrate that an insignificant negative correlation exists between the emotional intelligence and Pandemic perceived stress.

**Table II Corelation of emotional intelligence with pandemic Perceived stress scores of medical students**

| | | | Emotional intelligence | Pandemic perceived stress |
|---|---|---|---|---|
| Spearman's rho | Emotional intelligence | Correlation Coefficient | 1.000 | -.049 |
| | | Sig. (2-tailed) | . | .656 |
| | | N | 86 | 86 |
| | Pandemic perceived stress | Correlation Coefficient | -.049 | 1.000 |
| | | Sig. (2-tailed) | .656 | . |
| | | N | 86 | 86 |

Table 3 demonstrates linear regression analysis was carried out to assess the relationship between the Pandemic perceived stress (dependent variable) and emotional intelligence (independent variable) The results demonstrated no significance (p=0.656, F=0.20)

**Table III linear regression between pandemic perceived stress scores and emotional intelligence**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | |
| 1 | (Constant) | 1.856 | .306 | | 6.070 | .000 |
| | Emotional intelligence | -.063 | .141 | -.049 | -.447 | .656 |

## DISCUSSION

The results reveal that nearly all of the participants in this study possessed either average or higher levels of emotional intelligence. A comparative study by Moawed, (Moawed, Gemeay, & ELsayes, 2017) studying nursing students at King Saud University in KSA with the students belonging to the Tanta University provided congruent findings. Another study, based in an Indian medical college found comparable results in its 207 participants (Sundararajan & Gopichandran, 2018). A US study discovered moderate levels of emotional intelligence among students of the nursing faculty (Beauvais, Brady, O'Shea, & Griffin, 2011). Conversely, a lower than normative mean emotional intelligence was observed in an Australian study of 203 healthcare students (Foster et al., 2018).

Keeping in view student demographics, emotional intelligence levels assessed in the current study were not observed to be significantly difference across different educational years and genders.

The scores of emotional-intelligence among both genders were nearly identical. No significant difference was noted. It was also observed that the emotional intelligence scores of female medical students were slightly higher than those of the males. These findings of this study corroborate the results of a study concluding significantly higher mean level of emotional intelligence in females compared to males among medical undergraduate students at the University of Colombo in Sri Lanka(Ranasinghe et al., 2017). Similarly, emotional-intelligence scores were not significantly different when categorized by academic years.

A significant difference (P< 0.01) was noted when comparing the Pandemic perceived stress between males and females. A slightly less significant difference (P<0.05) for Pandemic perceived stress was found between students of first and second years. The study's findings demonstrate that female medical students are more prone to have higher levels of pandemic related stress. Medical students belonging to senior academic years were similarly more likely to experience higher levels of Pandemic related stress.

In this study, a negative correlation has been observed between the students' emotional-intelligence scores and the Pandemic perceived-stress scores attributed to them The findings suggest that greater levels of emotional intelligence are linked to lower levels of Pandemic perceived stress in medical undergraduates. Similar studies conducted prior to the Pandemic showed a significant negative correlation which existed between the perceived stress scores and emotional intelligence scores of students, particularly those belonging to the nursing and pharmacology faculties(Foster et al., 2018). A US study of university students also found a significant corelation of greater levels of emotional intelligence with reduced levels of perceived stress scores (Enns et al., 2018).

## CONCLUSION

Average to higher levels of emotional intelligence were detected among first and second year medical undergraduate students. It was found that emotional intelligence was not significantly affected by either gender or educational year. Pandemic perceived stress was noted to differ among males and females, with females undergoing greater stress. Educational year also affected Pandemic related stress, with the second year students displaying high levels of stress. In the end, the present study

revealed a negative correlation between Pandemic perceived stress and emotional intelligencee.

**Recommendations**

Medical undergraduates: are more likely to be affected by stress especially related to the Covid-19 Pandemic. For this reason, Identification of psychological stressors that affect these students is essential to provide them with emotional-intelligence training, which can help improve their coping strategies.

**Limitations**

The low rate of response limits our findings, as does the cross-sectional design employed in this study. Convenience sampling limits the results' generalizability. Qualitative studies or study designs with a larger sample can be undertaken in the future to address these concerns.

## DECLARATION

The author report no declaration of interest.

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**AUTHOR'S CONTRIBUTION**

1. Dr. Saleha Cheema. The author has independently conceived the study, performed data analysis, and composed the manuscript.