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A cross-sectional study regarding correlation between procrastination and perceived stress among medical students in Badaun, Uttar Pradesh

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ABSTRACT

Background: Procrastination, the act of delaying or postponing tasks, is a common challenge faced by individuals, particularly in high-pressure environments like medical education. Medical education presents demanding and potentially daunting requirements for students globally, which has become a significant concern of stress. This study aimed to explore the relationship between procrastination and perceived stress among medical students in Uttar Pradesh, India.

Methods: A cross-sectional study was conducted at Government medical college in Uttar Pradesh. The sample comprised 225 MBBS students aged 18 years and above. The Assessments included the Procrastination Assessment Scale-Students (PASS), The Perceived Stress Scale (PSS). Data were entered in Excel and analyzed using SPSS 23 with descriptive statistics, Chi-square and Spearman's Correlation for comparisons.

Results: The findings revealed that 90(40%) of the participants exhibited high levels of procrastination, with 80(35.56%) at a moderate level and 55(24.44%) showing low procrastination. Moderate perceived stress was prevalent among 170(75.56%) of students. A statistically significant positive correlation ($\rho = 0.18$) was observed between procrastination and perceived stress, indicating that students with higher procrastination scores reported increased levels of stress.

Conclusion: This study highlights the detrimental impact of procrastination on the perceived stress levels of medical students, emphasizing the need for targeted interventions to manage procrastination and reduce stress in academic settings. Addressing these issues is crucial for improving not only academic performance but also the overall well-being of medical students. Future research should aim to establish causality and include broader demographic samples to further understand this relationship.

Keywords*: Procrastination, Perceived Stress, Medical Students, Gender Differences.*

INTRODUCTION:

Procrastination is commonly conceptualized as an irrational tendency to delay required tasks or assignments despite the negative effects of this postponement on individuals and organisations[1]. Poets have even written figuratively about procrastination, with such phrases as "*Procrastination is the Thief of Time*,"[2]. The current culture in medical schools often demands that medical students be faultless and flawless. Characteristics, such as impeccable performance, high competency in the medical field, and awareness of detail, are generally expected of medical students and physicians. Therefore, medical students may set too perfect standards for academic tasks and it may be difficult to complete tasks that meet high standards, which puts pressure on themselves.

Academic procrastination tends to occur frequently when the absolute amount of academic tasks increases, and the task becomes more complex and stressful[3,4].Research has shown that over 70% of university students experience procrastination in relation to their academic tasks and approximately 58% of undergraduate students report procrastinating for three hours or more in a day. Higher frequencies of sadness (46.59%) and procrastination (47.12%) have been observed in medical students[5,6]. Perceived stress is not about measuring the frequency of stressful events rather it is about how an individual feels about the general stressfulness of his life and the ability to handle such stress[7].

Medical education has been reported throughout the world as one of the most stressful academic curricula, which negatively affects the physical and mental health of medical students. Fear of examinations, high parental expectations, peer pressure, lack of leisure time, financial problems, relationship disharmony, and aspirations of higher studies are some of the many factors known to contribute to the development of stress in undergraduate medical students[8,9].A minor level of stress is beneficial and enables the student to become a more dynamic and better performer. Conversely, persistently high levels of stress may cause considerable psychological and physical glitches like poor academic performance, stress-related anxiety, depression, drug use, and even suicide[10,11]. The present study investigated Procrastination and the perceived stress level as well as reasons and sources of stress among medical students.

METHODS

A cross-sectional study was conducted among the students of a government Medical College in Uttar Pradesh. The study was conducted over a three-month study period from June 2023- March 2024. The sample comprised 225 MBBS students from the 2019, 2020, 2021, and 2022 batches. MBBS students aged 18 years and above were asked to participate in the study and explained about the study's purpose, voluntary nature of participation, confidentiality of responses, and their right to withdraw at any time without consequences. Students who were willing to participate, with written informed consent obtained prior to participation and those who understood the study's purpose were included in the study. Students who were absent during data collection, unable to participate due to illness, did not provide consent, or missed any assignment or weekly test were excluded from the study.

Measures

Procrastination Assessment Scale-Students (PASS)

Procrastination assessment scale-students (PASS) is extensively used to measure academic procrastination among students (Solomon and Rothblum, 1984). Procrastination Assessment Scale- students (PASS) has two parts, first part has six academic tasks: writing a term paper, studying for exams, and weekly assignments, performing administrative tasks, taking part in meetings and performing academic tasks in general. In six tasks, the participants have to accomplish three rating scales which indicate the frequency with which they procrastinate on that task (1 = Never procrastinate, 5 = Always procrastinate) whether their procrastination on the task is a problem (1 = Not at all a problem, 5 = Always a problem) and in case of to decrease their procrastination on the task (1 = Do not want to decrease 5 = Definitely want to decrease) (Solomon and Rothblum, 1984). The sum of PASS items delivers an overall academic procrastination measure with total scores ranging from 12-60. Higher scores demonstrate a higher level of academic procrastination. The second part of the PASS asks respondents to think about when last time they felt procrastination during writing a term paper and have to identify the reason for procrastination. Self-reported procrastination comprises both frequent delay and stress and it takes time to accomplish a task in this situation. Previous studies describe that higher procrastinators lessen delay only when a person's stress reaches a peak (Solomon et al., 1983)[13].

The Perceived Stress Scale (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 questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way. **Scoring:** PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. A short 4 item scale can be made from questions 2, 4, 5 and 10 of the PSS 10 item scale[14].

Data Analysis-The collected data was analysed through a quantitative technique using SPSS®23. Chi square test was used to compare the differences in procrastination, PASS and PSS between high and low-procrastination students. Spearman's Correlationwas conducted to examine the correlation between procrastination and stress. Differences were considered statistically significant if the p-value was less than 0.05.

RESULTS

The study included a total sample of 225 medical students, comprising 133 males and 92 females. The participants were categorized based on their procrastination levels (low, moderate, and high) and perceived stress levels (low, moderate, and high). Gender differences in procrastination and stress were analyzed to determine any significant associations.

Table 1: Comparison Of Procrastination Level and stress level In Male And Female Students

Gender	Procrastination Level	Total	p-Value

	Low	Medium	High		
Male	35(26.32%)	45(33.83%)	53(39.85%)	133(100%)	0.69
Female	20(21.74%)	35(38.04%)	37(40.22%)	92(100%)	
Total	55(24.44%)	80(35.56%)	90(40.00%)	225(100%)	
Gender	**Perceived Stress Level**			**Total**	**p-Value**
	Low	**Medium**	**High**		
Male	18(13.53%)	97(72.93%)	18(13.53%)	133(100%)	0.54
Female	9(9.78%)	73(79.35%)	10(10.87%)	92(100%)	
Total	27(12.00%)	170(75.56%)	28(12.44)	225(100%)	

Table 1 demonstrated that there was no significant association between gender and procrastination level and stress level among the students. 40.2% of students who had high procrastination levels were females compared to 39.8% of males, while 38% of students who had moderate procrastination degrees were female compared to 33.8% males. Regarding perceived stress levels13.5% of students who had high perceived stress levels were males compared to 10.8% females.

Table 2: Comparison Of Procrastination and stress Among Different MBBS Batches

Batch	**Procrastination Level**			**Total**	**p-Value**
	Low	**Medium**	**High**		
2019	14(19.44%)	29(40.28%)	29(40.28%)	72(100%)	0.29
2020	17(33.33%)	15(29.41%)	19(37.26%)	51(100%)	
2021	8(17.02%)	21(44.68%)	18(38.30%)	47(100%)	
2022	16(29.09%)	15(27.27%)	24(43.64%)	55(100%)	
Total	55(24.44%)	80(35.56%)	90(40.00%)	225(100%)	
Batch	**Perceived Stress Level**			**Total**	**p-Value**
	Low	**Medium**	**High**		
2019	6(8.33%)	58(80.56%)	8(11.11%)	72(100%)	0.52
2020	5(9.80%)	40(78.43%)	6(11.74%)	51(100%)	
2021	5(10.64%)	35(74.47%)	7(14.89%)	47(100%)	
2022	11(20.00%)	37(67.27%)	7(12.73%)	55(100%)	
Total	27(12.00%)	170(75.56%)	28(12.44%)	225(100%)	

Table 2 presents the distribution of students among three levels of procrastination and stress level among the four batches (2019-2022) of students. The majority of students (40%) exhibited high procrastination, followed by 35.56% with moderate and 24.44% with low procrastination. Across batches, high procrastination levels fluctuated, decreasing from 40.28% in 2019 to 37.26% in 2020, rising to 38.30% in 2021, and peaking at 43.64% in 2022. A similar trend was observed in moderate procrastination, while low procrastination showed greater variability, ranging from 17.02% (2021) to 33.33% (2020).

Regarding perceived stress, moderate stress was the most prevalent across all batches, with proportions ranging from 67.27% (2022) to 80.56% (2019). High stress peaked in 2021 (14.89%) before declining in 2022 (12.73%), while low stress showed a notable increase in 2022 (20.00%). No significant differences in stress levels between batches.

Table 3.The Correlation Between Procrastination And Perceived Stress In Medical Students

Stress Level	**Procrastination Level**			**Total**	**Spearman Correlation**	**p-Value**
	Low Procrastination	Medium Procrastination	High Procrastination			
Low Stress	13(48.15%)	8(29.63%)	6(22.22%)	27(100%)	0.18	**0.009**
Moderate Stress	38(22.35%)	61(35.88%)	71(41.76%)	170(100%)		
High Stress	4(14.29%)	11(39.28%)	13(46.43%)	28(100%)		
Total	55(24.44%)	80(35.56%)	90(40.00%)	225(100%)		

A statistically significant positive correlation ($\rho = 0.18$, $p = 0.009$) was observed between procrastination and perceived stress, indicating that higher procrastination levels are associated with increased stress among medical students.

Discussion

The present study found that procrastination is highly prevalent among medical students, with 40% of participants exhibiting high procrastination levels, 35% showing moderate procrastination, and 24% showing low procrastination. These findings suggest that a significant proportion of medical students struggle with delaying academic tasks, which could negatively impact their performance and well-being. A study by Minra Tahir et al. supports this, showing that 52.5% of students exhibited high levels of procrastination and 47.5% having low procrastination level[15].

When analyzing gender differences, the proportion of high procrastinators was nearly equal among male (39.85%) and female (40.22%) students, indicating that both genders experience similar academic pressures and procrastination tendencies. This contrasts with some previous studies that suggest gender-based variations in procrastination behaviors and stress responses.Based on the results by Hyat et al, there was a significant difference between the male and female students regarding the level of Procrastination, the female ones were less procrastinator than the male students[16].

The present study depicts that the proportion of students with low procrastination levels,which was 24.44% shows more fluctuation, with the lowest percentageof 17.02%in 2021(II^{ND}) year and the highest percentage of 33.33%in 2020 (III^{RD}) year 33.33%, & 29% in 2023 (I^{st})year batch of MBBS students. But in a study by Manya Tahir et al., The low procrastinators were 51% in the 1st year, 54% in the 2nd year and 53% in the 3rd year[17].

The study found that second-year students from the 2021 batch exhibited the greatest prevalence of stress, at 14.89%, followed by first-year students from the 2022 batch at 12.73%, third-year students from the 2020 batch at 11.74%, and final-year students at 11.11%.

In another study by Melaku et al The highest prevalence of stress was observed among the first-year students at 58.3%, followed by the second-year students at 57.0%, the third-year students at 48.9%, the fourth-year students at 56.6%, and the fifth-year students at 50.0%.[18]The high percentage of students in the moderate stress category highlights the demanding nature of medical education. Although some level of stress can be beneficial for motivation and performance, prolonged exposure to high stress may lead to burnout, anxiety, and reduced academic efficiency.

A statistically significant positive correlation ($\rho = 0.18$, $p = 0.009$) was found between procrastination and perceived stress. This indicates that students who procrastinate more tend to experience higher levels of stress. This relationship may be explained by the fact that procrastination leads to task accumulation, increased workload pressure, and last-minute cramming, which can contribute to heightened stress and anxiety. These findings emphasize the importance of addressing procrastination as a strategy to reduce stress levels among medical students. Similar study by Fuschia M. Sirois et al. has shown that the relationship between chronic procrastination and poor health is largely attributable to increased levels of stress experienced by individuals who engage in chronic procrastination.[19]Another related study by Laybourn et al. demonstrated that procrastination even among educators is associated with amplified stress among students.[20]The study found no significant association between gender and procrastination ($p = 0.69$) or gender and stress levels ($p = 0.54$).The findings of the current study align with those reported by Johansson et al., which indicate no significant relationship between gender and the procastination.[21]However, several prior research has demonstrated a pronounced disparity in stress levels among female participants compared to males and other gender.[21-23]

The findings of this study have several important implications. Firstly, the pervasive nature of procrastination and stress among medical students, which could lead to adverse academic and mental health outcomes if left unaddressed. Secondly, the strong positive correlation observed between procrastination and perceived stress underscores the critical need for comprehensive interventions that target both the improvement of time management skills and the development of effective coping strategies among medical students. Given the significant proportion of medical students experiencing high levels of procrastination and stress, it is imperative that educational institutions and policymakers prioritize the development and implementation of comprehensive support programs.

Limitations

This study relied on self-reported information from students, which may have introduced reporting bias. Additionally, perceptions of stress levels can vary among individuals and fluctuate throughout the year.

CONCLUSION

The study reveals a significant positive correlation between procrastination and perceived stress among medical students, indicating that higher levels of procrastination are associated with increased stress. With 40% of participants exhibiting high procrastination levels and a prevalent moderate stress level reported by 75.56% of the students, the findings highlight the challenging academic environment faced by medical students. This relationship underscores the importance of addressing procrastination not only as a behavioral issue but also as a contributing factor to stress management in educational settings.

Interventions aimed at reducing procrastination could be vital in alleviating stress among medical students, potentially improving their academic performance and overall well-being. Future research is necessary to explore causal relationships and the effects of varying cultural contexts, while also considering larger sample sizes to enhance the validity of the results.

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