

## A Retrospective Study to Determine the Academic Passion, Stress and Sleep Quality among Medical Students

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### Abstract

**Aim:** The aim of the present study was to determine the academic passion, stress and sleep quality among medical students and explore the associations among them, which helps to create awareness to improve the mental and physical health of future doctors.

**Methods:** This retrospective study was done at department of Community Medicine, Nalanda Medical College and Hospital, Patna, Bihar, India from Jan 2021 to Nov 2021. A total of 250 students who were in the 2nd and 3rd year of MBBS were selected obtaining the institutional head's permission. Students who had university examinations within a month were excluded from the study. Out of the 250 questionnaires distributed, 50 had incomplete forms hence, they were excluded from the study. 200 participants who completed forms were finally included.

**Results:** 105 were females and 95 were males in the study. A majority of the study participants were interested in clinics. It was also found that 21% participants were not interested in pursuing higher studies. There was a significant association between the ability to handle personal problems with passion and interest in clinics. There was no significant association between the development of passion and the presence of a doctor in the family. 69% of the participants self-reported good sleep quality with severe stress. 22% non-passionate participants had moderate stress. Passion showed a positive association with interest in the pursuing post-graduation, satisfaction in the student's life and negative association with duration of sleep and stress. Interest in clinics showed association with satisfaction with results with respect to their efforts. Perceived stress showed significant association with both passion and sleep.

**Conclusion:** Our study found that passion has behavioral and psychological outcomes similar to previous research. Parental pressure and other factors influenced students to choose MBBS as a career. There is a high prevalence of stress and poor sleep quality among medical students. Depending on the type of passion, students can be positively or negatively influenced, so it is of prime importance to have a harmonious passion in life.

**Keywords:** Academic passion, Perceived stress, Sleep quality, medical students

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### Introduction

Stress has been defined as the extent to which persons perceive their demands exceed their ability to cope. Stress has been identified as an important indicator of the students' overall health as it has been consistently associated with mental and physical health effects. [1] Studies from developing countries in Southeast Asia have reported stress among medical students. [2-4]

Although sleep disorders are prevalent in the general population as a whole, one of the subgroups that have been recognized as especially vulnerable to poor sleep is that of medical students. Greater academic load with long duration and high-intensity

studies have been suggested as some of the important attributable factors. [5] Vulnerability to sleep disturbances has been particularly discerned in first-year medical undergraduates in various studies. [6] The first year of the study of medicine incorporates a phase of transition in which students undergo a change from the early schedules of preparatory courses for college entrance examinations and attending high schools to a different phase of undergraduate courses, which is characterized by plentiful academic activities, irregular daily routines, and a considerable increase in the academic load. Various cross-sectional studies

indicate that evening circadian preferences, poor sleep quality, and inadequate sleep duration are associated with adverse outcomes, including worse academic performance and emotional stress among the students. [7-9] A few studies have interestingly found that the sleep quality, but not the sleep duration, of these students correlates with academic scores. [10,11]

Their academic performance is affected by psychological problems, including anxiety and depression, which can manifest as decreased concentration and low motivation. [12] Among medical students, the prevalence of depression and other linked conditions such as suicide, stress-induced obesity, and cardiovascular illnesses, is constantly rising. Overly high expectations from family and friends, issues regarding finances, and adjustment difficulties are all quite common and well-documented. [13] Psychological stress also leads to decreased empathy, a poor attitude towards the chronically ill, and cynicism. [14] Like any other degree, MBBS should give its students the knowledge, insight, and courage to deal with the stress and sleep issues they will eventually face.

The aim of the present study was to determine the academic passion, stress and sleep quality among medical students and explore the associations among them, which helps to create awareness to improve the mental and physical health of future doctors.

### Materials and Methods

This retrospective study was done at department of Community Medicine, Nalanda Medical College and Hospital, Patna, Bihar, India from Jan 2021 to Nov 2021. A total of 250 students who were in the 2nd and 3rd year of MBBS were selected obtaining the institutional head's permission. Students who had university examinations within a month were excluded from the study. Out of the 250 questionnaires distributed, 50 had incomplete forms hence, they were excluded from the study. 200 participants who completed forms were finally included.

### Data Collection

The students of the private medical colleges were approached after obtaining permission from the Dean/Principal of the medical college. Written informed consent was obtained from all the participants. They were informed about the aims and objectives of our study and assured of their anonymity that only group-level findings would be reported. The questionnaire was distributed to the participants in campus settings and collected on site within 30 minutes. The data was collected using 30 item semi-structured self-administered questionnaires.

The questionnaire consisted of four parts- Sociodemographic profile, background information like age, sex, current place of stay, doctors in the family, decision to join MBBS and interest in pursuing post-graduation. Assessment of passion consisted of questions related to the development of passion, passion to achieve in life, do they have passion for learning medicine and are they working towards achieving it, and reason for choosing this profession. Perceived stress scale (PSS-14): the PSS-14 is a self-rated questionnaire to measure perceived stress. The scale includes a number of direct questions about levels of stress experienced stress in the current month. [15]

Pittsburgh sleep quality index (PSQI): the PSQI is a self-rated questionnaire consisting of 10 questions that differentiates "poor" from "good" sleep by measuring seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, and sleep disturbances, use of sleep medication, and daytime dysfunction over the last month. [16]

### Data Analysis Method

The collected data was entered in Microsoft Excel and analyzed in SPSS v.20 software. Frequencies and percentages were calculated for all the categorical variables. The mean and standard deviation were calculated for all numerical variables. The chi-square test was done to find association between passions, stress and sleep quality. A  $p < 0.05$  was considered significant. For the purpose of the analysis, frequencies of stressors were grouped into dichotomies as never/rarely/sometimes=0 and often/always=1. A correlation analysis of variables was performed to investigate which of the variables were significantly correlated with passion, stress and sleep.

### Scoring System

Academic passion was determined by five objective questions each with five options. The scoring was done from 1 to 5. We considered students academically passionate if the score was more than 3 to a minimum of 3 out of 5 questions and the rest were considered academically non-passionate. Prevalence of stress was determined based on total score of PSS. PSS scores were obtained by reversing responses (i.e., 0=4, 1=3, 2=2, 3=1 and 4=0) to 4 positively stated items (items 4, 5, 7 and 8) and then summing across all scale items. Scores ranging from 0-13 considered low stress, 15-26 considered moderate and 27-40 considered high perceived stress. Sleep assessed with PSQI; global sum of 5/greater indicates poor sleepers and <5 indicates good sleepers.

### Results

**Table 1: Distribution of academic passion, sleep, perceived stress and gender**

Academic passion	Female n (%)	Male n(%)
Passionate	55	45
Non-passionate	40	50
Total	105	95
<b>Sleep</b>		
Good sleepers	55	46
Poor sleepers	50	49
Total	105	95
<b>Stress</b>		
Severe	40	44
Moderate	35	26
Mild	30	25
Total	105	95

105 were females and 95 were males in the study.

**Table 2: Association of different study variables with passion**

Study variables		Passion		P Value
		Passionate	Non-passionate	
Willing to do post-graduation	Yes	90	68	0.001
	No	10	32	
Rating own student life	Good	88	72	0.00
	Bad	12	28	
Ability to handle problems	Able	80	82	0.042
	Not able	20	18	
Worries about future	Worried	72	52	0.20
	Not worried	28	48	
Interest in clinics	Interested	34	56	0.005
	Not interested	66	44	
Difficulty piling up in life	Yes	70	40	0.00
	No	30	60	
Grading student life	0-3	52	60	0.090
	4-5	48	40	

A majority of the study participants were interested in clinics. It was also found that 21% participants were not interested in pursuing higher studies. There was a significant association between the ability to

handle personal problems with passion and interest in clinics. There was no significant association between the development of passion and the presence of a doctor in the family.

**Table 3: Distribution of PSI categories among gender, passion and PSQI**

Stress	Gender		Passion		PSQI	
	Male	Female	Non-passionate	Passionate	Good	Poor
Mild	40	44	12	16	16	5
Moderate	35	26	22	15	15	23
Severe	30	25	66	69	69	72

69% of the participants self-reported good sleep quality with severe stress. 22% non-passionate participants had moderate stress.

**Table 4: Association of different study variables with passion, stress and sleep**

Study variables	Mean	Standard deviation	Gender	Reason to join
Passion	1.46	0.52	14.152	48.22
PSQI	6.14	3.47	1.096	2.8
PSI	2.56	0.68	1.36	8.96

Passion showed a positive association with interest in the pursuing post-graduation, satisfaction in the student's life and negative association with duration of sleep and stress. Interest in clinics showed association with satisfaction with results with respect to their efforts. Perceived stress showed significant association with both passion and sleep.

### Discussion

Passion is a strong inclination towards an activity that people like, that they find important, and in which they invest time and energy. [17] Passionate activities make one's life worth living. [17] Passion provides inspiration, physical and mental well-being, meaning to life, and a reason to work hard, while also rewarding the mind with a positive impact. However, passion can have negative consequences. Obsessive passion causes stress and reduces sleep quality, thus affecting one's personal and professional lives. Many other factors, like parental advice, peer pressure, relationships, etc., affect student's decisions to choose a profession in addition to their own desires and interests. [18] According to several studies, the most significant stress-reducing component in life is passion. [19] It is crucial to have a generation of committed physicians who are always willing to serve mankind in order to build a better healthcare system. Due to its rigorous professional and academic standards, medicine is one of the most difficult academic fields. [20]

105 were females and 95 were males in the study. A majority of the study participants were interested in clinics. It was also found that 21% participants were not interested in pursuing higher studies. There was a significant association between the ability to handle personal problems with passion and interest in clinics. There was no significant association between the development of passion and the presence of a doctor in the family. 69% of the participants self-reported good sleep quality with severe stress. 22% non-passionate participants had moderate stress. Passion showed a positive association with interest in the pursuing post-graduation, satisfaction in the student's life and negative association with duration of sleep and stress. Interest in clinics showed association with satisfaction with results with respect to their efforts. Perceived stress showed significant association with both passion and sleep. In this study the career decisions were influenced by pressure from parents and friends which was in contrast to the studies done by Ayuob et al (5.9%), Divan et al (22.7%). [18,21] This may be due to factors like the social, political, and economic status of the study participants. Most of the doctors in the family and their presence in the family might contribute to increased parental pressure in the study population. Interestingly, it was found that there is no association between the doctors in the family and academic passion which is

contrary to the study by Rani et al. [22] In our study, passion had positive effects on personal lives. Passionate students had more satisfaction in student life and less perceived stress, however we found that passionate students had low sleep quality when compared to non-passionate. This contradicts the evidence of a strong positive relationship between sleep quality and passion in a previous study by Melanger et al. [23] High expectations of family, low self-esteem, and a lack of positive satisfaction in student life led to increased stress and to compensate for the ever-increasing and challenging academic needs, most of the students sacrifice sleep, which explains the decreased sleep quality in passionate students. The majority of students in our study found it difficult to handle personal problems, and one quarter of the total study population was unhappy with their lives and rate themselves as bad students. As in previous studies, we also found that medical students have increased perceived stress, and academics and personal relationships/addictions are major contributors to stress and psychological morbidity. [20,24] In previous studies, college students have shown similar results in approximately half to three quarters of the population by Bahammam et al and Hershner et al. [25,26] Sleep disturbances have also been shown to be a risk factor for mental disorders for decades and are an independent risk factor for suicidal behavior. [27]

### Conclusion

Our study found that passion has behavioral and psychological outcomes similar to previous research. Parental pressure and other factors influenced students to choose MBBS as a career. There is a high prevalence of stress and poor sleep quality among medical students. Depending on the type of passion, students can be positively or negatively influenced, so it is of prime importance to have a harmonious passion in life. Stress and sleep management programs that inform students about the effects of stress and sleep on physiological and psychological functioning and teach students how to plan, priorities, identify sources of stress, cope with stress, reduce anxiety, improve sleep habits, and simultaneously increase use of positive coping strategies like good friendships, exercise, recreational activities, and socialization might improve the present condition.

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