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Original Research Article

Academic passion, perceived stress and sleep quality evaluated among medical students of private medical colleges in North Kerala

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ABSTRACT

Background: Passionate doctors are required for a better health care system. Increased professional and academic requirements increase risk of developing stress and sleep disruption. This study aims 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 cross-sectional study among 649 MBBS students was done at 3 private medical colleges in North Kerala during 2019-2020 using a semi-structured 31-item questionnaire containing 4 sections: socio-demographic information, academic passion, perceived stress, and sleep quality. Data collected in 30 minutes from study participants in campus setting was entered in MS excel and analyzed using SPSS-20.
Result: A 61.6% were women and 38.4% were men. 48% had chosen the profession because of parental pressure, relatives and friends. 51% were passionate about the medical profession. 69% of students were under high perceived stress (mean PSI score 33.54±8.71 SD). 48% of students were poor sleepers (mean PSQI score 6.11±3.45). A 15.6% of participants relied on medication for sleep at least once a month. Passion showed a significant association with stress ($p<0.001$) and sleep ($p<0.001$). Passionate students had less perceived stress and lower sleep quality.
Conclusions: Apart from one's own desire, other factors influenced students to choose MBBS. Only half of the participants were passionate. There is a high prevalence of stress and poor sleep quality among medical students. Passion has an imperative role in one's life quality.

Keywords: Academic passion, Perceived stress, Sleep quality, MBBS

INTRODUCTION

Passion is a strong inclination towards an activity that people like, that they find important, and in which they invest time and energy.[1] Passionate activities make one's life worth living.[1] 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.[2] According to several studies, the most significant stress-reducing component in life is passion.[3] 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.[4] Thus, medical students are at increased risk for stress and sleep disruption, most of them choose to shorten their sleep cycles, which regrettably has a number of negative effects, including a decline in neuro-cognitive and

psychomotor function.[5-7] Their academic performance is affected by psychological problems, including anxiety and depression, which can manifest as decreased concentration and low motivation.[8] 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.[9] Psychological stress also leads to decreased empathy, a poor attitude towards the chronically ill, and cynicism.[10] 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 evaluation of academic passion, stress, sleep, and their potential connections between them are not yet done extensively among medical students in South India. In order to raise awareness among medical students and make the required changes to social and academic structures to construct better healthcare, this study intends to identify the academic passion of medical students as well as the stress and sleep issues they experience, the factors contributing and their associations.

METHODS

Type of study

The type of study was of cross sectional.

Study setting

Study conducted at KMCT medical college-Kozhikode, Kerala, India, Malabar Medical College Kozhikode, Kerala, India and DM WIMS medical college Wayanad, Kerala, India

Study population

MBBS students were selected for study.

Type of sampling

Convenient sampling method was used

Sampling method

This cross-sectional study was done at 3 colleges in North Kerala during August–November 2019. A total of 800 students who were in the 2nd and 3rd year of MBBS were selected from 3 private medical colleges under Kerala University of Health Science after obtaining the institutional head's permission. Students who had university examinations within a month were excluded from the study. Out of the 800 questionnaires distributed, 151 had incomplete forms hence, they were excluded from the study. 649 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 31 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.[11]

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.[12]

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.

Ethical consideration and permission

The study was conducted after obtaining approval from the institutional ethics committee and permission from the respective private medical college authorities

RESULTS

The study was conducted on 649 MBBS students in their second and third years. The mean age of the study participants was 21.8±1.3SD. 249 (38.4%) were males and 400 (61.6%) were females. 78% of them live away from their homes for the purpose of education (hostel 64%, paying guests 14%). It was found that 331 (51%) were passionate; out of those who were found passionate 268(80.96%) developed passion before joining the course itself (i.e., 40% in teenage and 41% in childhood). A 42.57% of the total male respondents and 56.25% of the total female respondents in our study were found to be passionate. Distribution of academic passion and gender shown in Figure 1. 48% of the study participants reported that their friends and family influenced them to join the course. A majority of 77.65% of the study participants were interested in clinics (80.75% females, 72.69% males). It was also found that 18% of females and 23% of males were not interested in pursuing higher studies. There was a significant association between the ability to handle personal problems with passion (p=0.035) and interest in clinics (p=0.04). There was no significant association between the development of passion and the presence of a doctor in the family. The association of different study variables with passion is shown in Table 1.

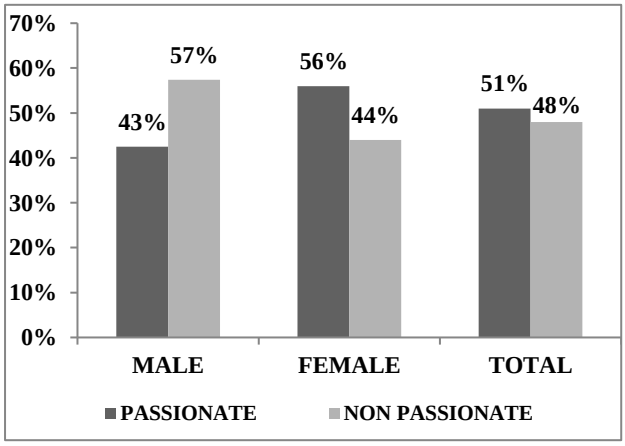

Figure 1: Distribution of academic passion and gender.

On analysis of sleep quality among the study participants it was found that 72.77% of mild stressed students were good sleepers. The gender distribution shown similar trends among all stress categories in Figure 2. 24% of the total study population was sad about their student lives. A 34% report themself as bad students, out of these, 35 students rated themselves as worse in student life. 40% of females were worried about their future. Stress had no association with doctors in the family, interest in clinics, and willingness to take post-graduation. The distribution of perceived stress and gender is shown in Figure 3.

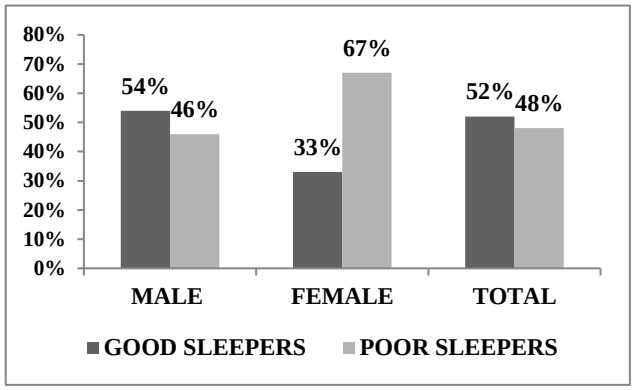

Figure 2: Distribution of sleep and gender.

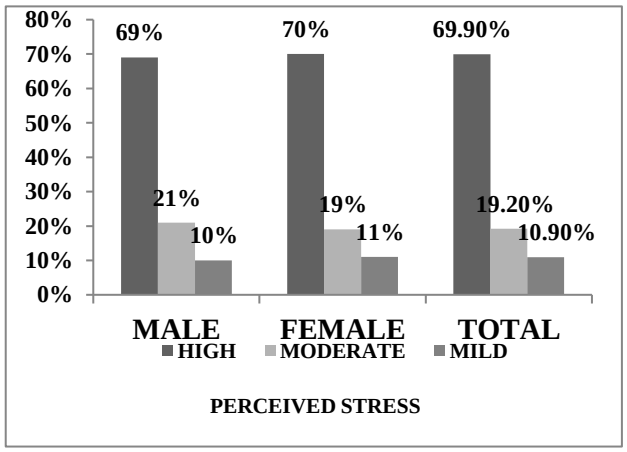

Figure 3: Distribution of perceived stress and gender.

The distribution of PSI categories among gender, passion and PSQI is shown in Table 2. 80% of the participants self-reported good sleep quality. Among them only 52% had good sleep quality as per the PSQI index. Passionate students showed low sleep quality (p=0.001). Sleep quality had a significant association with the duration of sleep (p=0.018). Most of the good quality sleepers reported 6 to 7 hours of sleep. Out of 139 students who regularly slept more than 7 hours, 38.12 % had low sleep quality. Respondents with no interest in pursuing postgraduate studies were predominantly good sleepers (p=0.005). 15.71% of the students were taking sleeping pills at least once a month. On comparing gender and sleep, 54.21% of males were good sleepers, but 67.25% of females were poor sleepers. A 10% of students were

never concerned about their academic grades. 72% of the students felt difficulties in keeping up enthusiasm during the previous month. The enthusiasm of students to get things done shows a significant positive association with academic results (p=0.004). Table 3 shows comparison of different stressors in the life of medical students. Passion showed a positive association with interest in the pursuing post-graduation (p=0.001), satisfaction in the student's life (p=0.001), and negative association with duration of sleep (p=0.001) and stress (p=0.001). Interest in clinics showed association with satisfaction with results with respect to their efforts (p=0.032). Perceived stress showed significant association (p=0.001) with both passion and sleep. Associations of different study variables with passion, stress and sleep shown in Table 4.

Table 1: Association of different study variables with passion.

Study variables		Passion		X^2 value	P value
		Passionate	Non-passionate		
Gender	Male	106	143	14.1	0.00
	Female	225	175		
Willing to do post-graduation	Yes	293	227	20.4	0.001
	No	38	91		
Rating own student life	Good	287	236	29.08	0.00
	Bad	44	82		
Ability to handle problems	Able	263	269	11.13	0.035
	Not able	68	49		
Worries about future	Worried	214	160	7.99	0.10
	Not worried	117	158		
Interest in clinics	Interested	116	186	46.7	0.004
	Not interested	215	132		
Difficulty piling up in life	Yes	214	124	7.99	0.00
	No	117	194		
Grading student life	0-3	151	206	36.8	0.092
	4-5	180	112		
PSQI	Poor sleeper	193	144	43	0.001
	Good sleeper	138	174		
PSI	Mild stress	53	19	36	0.001
	Moderate stress	50	73		
	Severe stress	228	226		

Table 2: Distribution of PSI categories among gender, passion and PSQI, (n=649).

Stress	Gender (%)		Passion (%)		PSQI (%)	
	Male	Female	Non-passionate	Passionate	Good	Poor
Mild	9.73	11.75	5.99	16.3	16.11	5.79
Moderate	21.27	18.25	22.95	15.10	15.01	22.95
Severe	69	70	71.06	68.60	68.88	71.06

Table 3: Comparison of different stressors in life of medical students.

Stress factor	Never		Almost never		Sometimes		Fairly often	
	N	%	N	%	N	%	N	%
Academic result	78	12	63	9.7	280	43.1	117	18
Addictions	98	15.1	79	12.2	233	35.9	146	22.5
Personal problems	86	13.3	240	37	169	26	93	14.3
Difficulty pilling up in life	62	9.6	138	21.3	237	36.5	125	19.3

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

Study variables	Mean	Standard deviation	Gender	Reason to join
Passion	1.48	0.50	14.166***	49.25**
PSQI	6.11	3.45	1.098	2.7
PSI	2.58	0.67	1.37	8.98

p<0.05, **p<0.01.

DISCUSSION

The purpose of this study was to determine the academic passion of medical students, the stress and sleep problems they undergo so that it can help us create awareness among medical students and bring necessary modifications to social and academic structures to build better healthcare. Studies have shown that stress perceived in life will adversely affect sleep.[4] In our study we found factors affecting perceived stress and sleep quality; more than half of the students were academically passionate about medical careers and about half of them developed passion for the profession in their childhood or teenage years, which is similar to studies by Dusselierl et al and Nobel et al.[8,13] We found that 81% of passionate students developed their passion before joining the course. The development of passion before joining the college itself shows the potential to guide students to pursue their career according to their interests in life. In our study, it was found that only 52% opted for medicine as a career on their own, which was similar to the study done by Rani et al where it was 41% in a similar background.[14] Pervious study states that parental pressure is one of the influential factor in choosing career.[15] In this study the career decisions of 48% 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%).[2,16] This may be due to factors like the social, political, and economic status of the study participants. 48.2% had 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.[14] 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.[17] In our study, 80.1% of respondents were willing to pursue post-graduation, this is similar to the study by Diwan.[16] We found that study participants interest in clinics has an association with satisfaction with academic results with respect to their efforts. Our study shows a significant association between the ability to handle personal problems, interest in clinics and passion. Thus, interest in clinics is an important factor affecting the quality of life of the students. 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 are 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.[4,18] A study conducted by Kishore et al statistically expects 150 -300 suicides in the next 4-5 years in India.[19]

One of the factors influencing sleep quality is its duration. Most of the good quality sleepers in our study reported 6-7 hours of sleep. Studies have shown that learning and academic performance are closely linked to sleep quality and duration.[6] In our study, poor sleepers reported more daytime dysfunction and poor academic performance compared to good quality sleepers. 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.[5,20] 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.[21]

In our study, 80% of the participants reported good sleep quality. However, only 52% had good sleep quality as per the PSQI index, which shows that the majority of students are not aware of the fact that duration and quality of sleep are not exactly the same; daytime dysfunction, fatigue, and sleepiness also indicate decreased sleep quality. 15.63% of the study population took sleeping pills at least once a month. To counter this alarming situation, sufficient changes have to be made in the existing education policies and curriculum in order to make this vast arena more student-friendly. Career counselling, stress reducing strategies, and sleep hygiene methodologies should be familiarized to our society. High perceived stress could lead to anxiety, depression, suicidal thoughts, sleep disturbances, alcohol and substance abuse.[9,22-24] As in previous studies, we found females had predominantly higher perceived stress.[9] More than 72% of students felt difficulties in keeping up enthusiasm and 80% in handling personal problems. The negative impact of stress and poor sleep quality on academic performance has been well reported.[25] A total of 78 % live away from their home for the purpose of their education, which escalates the situation; adjustment problems and a lack of support systems might also have a negative impact.[26] As Vallerand suggested a dual model of passion, we also found similar results in our study. Passion is an important factor in coping with stress in life. We also found passion had a negative effect on life, due to obsessive passion, many of the students tend to reduce sleep, which has ill effects on their health and academic performance. Obsessive passion originates from intrapersonal or interpersonal pressure such as over expectations and low self-esteem among students and parents.[1] This is the need of the hour to make sure that by providing proper guidance and counselling to the students, especially the passionate, who are generally more willing to go for higher education (81%).

There were also a few limitations to our study. Our study is restricted to North Kerala hence, the findings relate

more to that province. Students in government sector medical colleges may give varying results. The cross-sectional design of this study limits inferences about causality and temporality between academic stressors, passion, and sleeping difficulties. Our sample size consists of samples from only three medical colleges, so these results cannot be generalized to the whole student population in India. The use of self-administered questionnaires is a limitation of this study, and it may lead to recall bias. Psychological stress and sleeping disturbances were assessed with psychometric instruments that are not completely transposable to the DSM diagnostic criteria for psychiatric illnesses, and we have not differentiated the two types of passion in medical students, which needs further research.

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. Training programs and informative sessions to emphasize the nobility and dignity of the medical profession shall be incorporated into the curriculum to enhance and develop passion for medicine. 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. An aptitude test to assess the interest and ability of students before joining the course will ensure greater life quality. This is the need of the hour to empower students to follow their passion and educate society regarding importance of passion in life.

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