RELATIONSHIP BETWEEN THE LIFESTYLE AND MENTAL HEALTH OF MEDICAL STUDENTS OF UCMS BHAIRAHAWA: A CROSS-SECTIONAL STUDY

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ABSTRACT

INTRODUCTION

Medical students suffered from high level of stress during their studies and this percentage has been increasing. This study was conducted to find out association between lifestyle and mental health of MBBS and BDS students to encourage effective intervention to manage the stress.

MATERIAL AND METHODS

A cross sectional study was conducted at Universal College of medical sciences, Bhairahawa comprising both MBBS and BDS students from first to final years by written questionnaire using stress assessing tools.

RESULTS

Out of 202 students, 85.1% participants experienced stress of which 73.2% went through moderate stress while 11.9% with high stress. MBBS students were found to be more stressed than that BDS which was 59.4%. While concerning global PSQI, 57.9% complained for disturbed sleep. A significant association of stress was found with poor study ability as 89.2% experienced difficulty in coping up with study. Although more than half of students are physically active, the perceived stress score was seen still higher. A positive correlation was seen between study pattern with global PSQI (r =0.347, p= 0.001) and PSS (r =0.519, p= 0.001).

CONCLUSION

Sleeping pattern, physical activity, substance abuse and nutrition affect mental status. Hence, interventions should be done considering all dimensions to avoid further fatal consequences.

KEYWORDS

Lifestyle, Mental health, PSQI, PSS

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INTRODUCTION

Stress is inevitable but can be maintained and taken as positive if balanced.[1] However, medical education is regarded as one of the extensive and time-needed field along with need of high dedication and commitment.[2] Thus, medical students experienced high level of stress due to academic burden, hectic schedule and compulsive practical and massive theoretical examination.[3] Moreover, nowadays poor quality of lifestyle and mental stress are seen frequent in medical students which severely effect them personally and professionally.[4] The need of being perfectionist as medical field itself is crucial, constant pressure and higher expectation of society develop substantial stress leading mental disorder even after graduation and resulted into poor performance.[5] Many studies confirmed that perceived stress among medical students range from 25.6 to 78% throughout the globe.[6,7] This scenario urges the need of immediate intervention to be done to uplift mental and emotional health of medical students for effective medical services on long run. Hence, this study was conducted with the aim to present the alarming stress level that may affect the mental health among undergraduate medical students and the significant result obtained is going to definitely aware policy makers to plan strategies in order to avoid devastating consequences in future as one can imagine the situation of medical field if concerned medical students themselves are not healthy mentally.

MATERIAL AND METHODS

This cross-sectional study adopts quantitative method for the evaluating the mental health of the medical students. The study population comprised 202 students of Universal College of Medical Sciences (UCMS) studying MBBS and BDS programmes from the first to final years, was assigned by simple random sampling, filled the written set of Questionaries' distributed among students from July 2021 to December 2021. The institutional review committee granted the registration of UCMS/IRC/083/21 for the ethical clearance to conduct this research.

This research was conducted among MBBS and BDS students from first to fourth years studying at UCMS, Bhairahawa because of the diversity of students studying at this medical school. The participants from various batches of MBBS and BDS students were provided with online google link having a set of questionnaire providing information about their life style and mental status. Each set of questionnaire was filled up by participants and submitted the online form back which was analysed by the team. The participants were assessed on the basis of Perceived Stress Scale (PSS) score, global Pittsburgh Sleep Quality Index (PSQI) tool, study pattern, substance abuse, physical activity and nutrition. PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 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.[8] PSQI contains self-rated questions and 5 questions rated by the bed partner or roommate. Only self rated questions are included in the scoring. The 19 self-rated items are combined to for seven component scores, each of which has a range of 0-3 points. In all cases, a score of 0 indicates no difficulty, while a score of 3 indicates severe difficulty. the seven component scores are then added to yield one global score, with a range of 0-21 points, 0 indicating no difficulty and 21 indicating severe difficulties in all areas.[9] Study pattern contains five questions with rating scale 0-20 having 0-14 coping up the study where as 15-20 unable to cope up the study. The components score were added to get total score. However, substance abuse, physical activity and nutrition were assessed as categorical variable rather than score.[10]

The probability sampling method was adopted to reduce bias and increase the chance of population representation. The calculation of sample size was done as follows:

Sample size (n) = $Z^2 \times p \times q / e^2 = (1.96)^2 \times 0.15 \times (1-0.15) / (0.05)^2 = 195.92$
where, Z= 1.96 at 95% confidence interval, p=15% (mean of 10-20 % was taken as assumed prevalence of student affected with unhealthy life style and mental status)[10] =0.15, q= 1-p=0.85, e= 0.05 (5% margin of error). The minimum sample to be taken is 196 however, this research includes 202 medical students from MBBS and BDS first to fourth years of their study period which meet the minimum sample requirement.

The data was entered into the office excel sheet than retrieved to SPSS software version 22 for data analysis. The categorical variables were expressed in frequency and percentages. The continuous variables were expressed in median and interquartile range (IQR). Association between different parameters were tested using chi-square, correlation and Man-Whitney U tests with 5% level of significance.

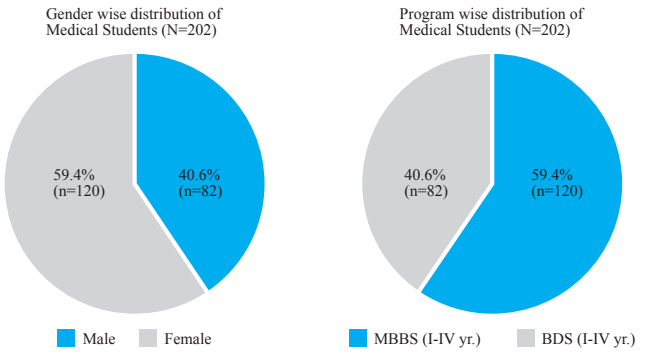

Figure 1. Pie diagram showing distribution of the Gender and Program of Medical Students (N=202)

Figure 1 showed that the distribution of population was more frequent in females (59.4%). MBBS students were found to be participated more than those studying BDS which was 59.4%.

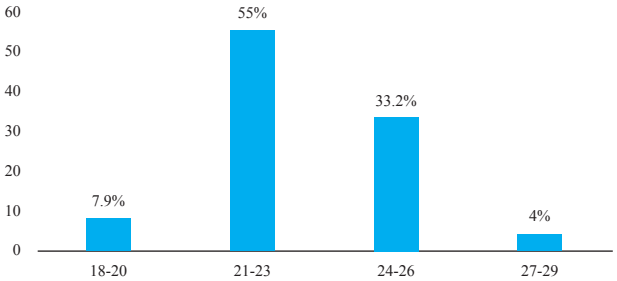

Figure 2. Bar diagram showing distribution of the Age group of Medical Students (N=202)

Figure 2 showed among all students, 55% of age groups was maximally distributed in the range 21-23 years.

Table 1. Descriptive statistics of mental status and life style of medical students (N=202)

Variables		Frequency	Percentage (%)
PSS (0-40)	0-13 (Low Stress)	30	14.9
	14-26 (Moderate Stress)	148	73.2
	27-40 (High perceived Stress)	24	11.9
Global PSQI (0-21)	< 5 (Healthier Sleep)	85	42.1
	5-21 (Disturbed Sleep)	117	57.9
Study Pattern (0-20)	0-14 (Cope up)	22	10.8
	15-20 (Unable to cope up)	180	89.2
Substance Abuse	No smoke/No Drink	166	82.2
	Abuse	36	17.8
Physical activity	Active	116	57.5
	Inactive	86	42.5
Nutrition	Poor	111	60.9
	Good	91	39.1

In Table 1, we applied different mental status scales in our study. The PSS scale showed that the majority of students were found under moderate stress which was 73.2%. The Global PSQI scale showed that the majority of students suffered from disturbed sleep which was 57.9%. The study patterns showed that 89.2% of students were not able to cope with the study pressure. According to substance abuse, 17.8% students were abused to smoke or drink. 57.5% of students were found to be physically active based on the physical activity scale. 60.9% of students were found to be taking poor nutrition.

Table 2. Association between variables in MBBS and BDS students (N=202)

Variables	MBBS (I-VI yr)	BDS (I-VI yr)	*p*-value
Gender			
Male	64 (78%)	18 (22%)	0.0001
Female	56 (46.7%)	64 (53.3%)	
Age group			
18-20	8 (50%)	8 (50%)	0.329
21-23	64 (57.7%)	47 (42.3%)	
24-26	41 (61.2%)	26 (38.8%)	
27-29	7 (87.5%)	1 (12.5%)	
PSS (0-40)			
0-13 (Low Stress)	21 (17.5%)	9 (11%)	0.821
14-26 (Moderate Stress)	86 (71.67%)	62 (75.6%)	
27-40 (High perceived Stress)	13 (10.8%)	11 (13.4%)	
Global PSQI (0-21)			
< 5 (Healthier Sleep)	73 (60.8%)	43 (52.4%)	0.827
5-21 (Disturbed Sleep)	47 (39.2%)	39 (47.6%)	
Study Pattern (0-20)			
0-14 (Cope up)	77 (64.2%)	38 (46.4%)	0.611
15-20 (Unable to cope up)	43 (35.8%)	44 (53.6%)	
Substance Abuse			
No Smoke/No Drink	93 (77.5%)	73 (89.1%)	0.079
Abuse (Smoke/Drink)	27 (22.5%)	9 (10.9%)	
Physical activity			
Active	71 (59.2%)	45 (54.9%)	0.473
Inactive	49 (40.8%)	37 (45.1%)	
Nutrition			
Poor	68 (56.7%)	43 (52.5%)	0.690
Good	52 (43.3%)	39 (47.5%)	

Table 2 showed that there was a significant association between gender and the program of study (p=0.0001). Male students were more in MBBS and female students were more in BDS. Similarly, there was a non-significant association between study programs (MBBS and BDS) with age group, PSS scale, Global PSQI scale, substance abuse, physical activity, and nutrition.

Table 3. Median (IQR) differences of parameters between male and female students

Variables	Male (Median IQR)	Female (Median IQR)	*p*-value
PSS (0-40)	19.5 (15-24)	20 (17-24)	0.260
Global PSQI (0-21)	5 (4-7.25)	5 (3-7)	0.222
Study Pattern (0-20)	13.5 (12-15)	14 (13-16)	0.013

Table 3 showed that there was a significant difference in median score between male and female medical students in the study pattern (p=0.013). However, there was no statistical difference in PSS and global PSQI showing among students.

Table 4. Correlation among Global PSQI, PSS and Study Pattern (N=202)

Variables	PSS	Study Pattern
Global PSQI	0.466*	0.347**
PSS	1.00	0.519**

***p=0.001, *p<0.05*

Table 4 correlation table showed that there was a significant weak positive correlation between global PSQI with PSS and study pattern. Similarly, there was a moderate positive significant correlation between PSS and study pattern.

DISCUSSION

Young age is considered to be the happiest time of the lifetime.[11] But nowadays, high level of stress decreases happiness and that in turn minimises study skills like decreasing memory capacities and struggle with concentration leading poor academic results.[12] Additionally, higher study is considered to be one of the stressful phases for students. Although, the difference of perceived stress between men and women was statistically insignificant (p=0.26), our findings have revealed a high prevalence of stress in females around 59.4% with median PSS of 20 than in males student in contrast to the study by Saxena Y, et al. as the perceived stress was more in males 82.2% as compared to females 61.8%.[13] Similarly, study conducted by Cohens,[8] Niemi and Vainiomaki[14] and Ahmed AI Sunni[15] also show male are more prone to stress as compared to female. The difference could be either due to less number of samples, students enrolled were not homogenous, the use of narcotics common among males, or hormonal differences that exist between males and females. However, our study is in agreement with study conducted in Indore, Madhya Pradesh, India[16] and the other study conducted in Pakistan.[17] Along with that MBBS students were found to be more stressed than that BDS which was 59.4%. The difference could be either due to the burden of content or less number of samples in BDS students. Such finding suggests the dire need of student support system to counsel these groups in order to prevent both onset and progression of stress. In our study, majority of students enrolled were found to be stressed irrespective of course. Around 85.1% participants experienced stress which is almost same to that of study done in Pakistan. However, other two studies carried out in Pakistan shows even higher percentage of students (>90%) reported to be in stress.[18] Out of 202 students, 73.2% went through moderate stress while 11.9% were in high stress. However, in a study by Rebello CR et al, participants with high PSS accounted for 33.8%.[19] Moreover, the prevalence of our study is higher than that of the study done in India, Pakistan, Portugal, Saudi Arabia and Trinidad and

Tobago.[16,17,20] Thus, such prevalence alarm for need of immediate intervention to be done in order to avoid mental breakdown in students leading serious consequences. Regarding low perceived stress, the percentage of 14.9% is found to be lower to that of study of O'Byrne L.[21] Disturbed sleep is concerned with both cause and effect of perceived stress. While concerning global PSQI, out of 202 participants enrolled, 57.9% complained for disturbed sleep that is remarkably higher as compared to other study. Similarly, as in most of the studies, there is significant positive correlation between PSS and global PSQI score.[21]

There was a significant association of stress with poor study ability as 89.2% of participants experienced difficulty in cope up with study. Such poor result may be due to struggle in concentrating as a result of perceived stress and deprived sleep. Moreover, many studies ensure the role of triad stress, sleep and study pattern may be cause destructive complication if not balanced properly.[22] Regarding physical activity, it is regarded as one of the best tools in mitigating morbidity due to stress as it decreases PSQI.[23] However, in our study although more than half of students are physically active, the perceived stress was seen still higher when compared to other study where only 14.8% of students are actively involved in physical exercises like yoga, meditation, and indoor relaxation.[21] Nevertheless, students should be encouraged to be physically active either in sports or other activities that minimize stress, insomnia and promote both physical and mental health.[24]

Although, it was not statistically significant, a positive correlation was seen between substance abuse with Global PSQI and PSS. Similar findings were also observed in study carried out in France.[25] As medical students are more prone to substance abuse due to academic burden so stress can be both cause or consequences of bad habits of using substances like alcohol, smoking or drugs. Furthermore, such use leads to depression, mental disorder and increases suicidal tendency on long term. However, nutrition is poorly integrated in medical studies reflecting the need of nutrition education in order to manage both perceived stress and Global PSQI in students.

The limitation of present study was that the enrolled students were not classified according to the academic year in both MBBS and BDS group. If the stratification was done, level of stress based on each year can be assessed. Our finding can't be generalised as the study was confined to only our medical school. There was no any clinical consultation of participants. Hence, longitudinal study would be more informative.

CONCLUSION

With the limitation of our study, it revealed that majority of students irrespective of courses are found to be highly stressed. Moreover, MBBS students are found to be more stressed than BDS. In addition to academic burden, sleep pattern, physical activity and nutrition status also affect the stress level. So, there is more than one dimensional state that causes mental stress. Hence, attention should be given to other sectors and interventions like university supportive and belonging programs that should be carried out in order to uplift lifestyle and mental status of students so that overall community health can be improved.

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