ORIGINAL RESEARCH ARTICLE

A CROSS SECTIONAL STUDY TO ASSESS THE FACTORS INFLUENCING THE ACADEMIC PERFORMANCE OF THE MEDICAL STUDENTS IN BENGALURU

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ABSTRACT

Background: Academic performance determines the knowledge, skills, attitudes and behaviours needed to practice medicine. There are various factors which can directly or indirectly have an influence on the performance of medical students. Identifying those factors is crucial to improvise the overall performances of the students. Hence this study was taken up to assess the factors influencing the academic performance of the medical students. **Material and methods:** A cross sectional study was conducted in Government medical college of Bengaluru among 420 undergraduate M.B.B.S. students from August to October 2016. Data was collected using self-administered, semi-structured questionnaire. **Results:** Among the different factors, gender, type of family, Socio-economic status, place of residence, sleep pattern and English coping difficulty was found to have the statistically significant association with the academic performance. **Conclusion:** Various factors have an influence on the academic performance of the medical students. Identifying these factors is crucial. In the study, factors like sleep pattern and English coping difficulty are the modifiable factors.

Key-words: Academic performance, Undergraduates, Gender, type of family, Place of residence.

INTRODUCTION

Medical education is complex and demands the students to acquire knowledge, skills and competence in multiple disciplines over a period of time.[1] In India and many developing countries undergraduate medical education is facing challenges. Even though efficient teachers are provided in medical colleges, the performance of the medical students have declined significantly.[2]

There are various factors which directly or indirectly have an influence on the performance of medical students, such as, syllabus in bulk, lack of time management, lack of guidance and support from their parents, staying away from home, bad habits, deviation from studies, parental and peer pressure, physical, emotional and mental health, personality, socio-economic factors, stress, depression, dedication towards studies, motivation, concentration in the class, involvement in the clinical discussion etc. [3, 4, 5]

Psychological or emotional factors and behavioural strategies for effective adaptation to concrete environment demands and their associated emotional stress also play a role in the academic performances of the students.[6]If the factors leading to decline in performance are not addressed, they can go for failure, drop outs and results in inefficient doctors.[2]

Medical students are expected to maintain high standards of academic performance which demonstrate that they have attained good knowledge, skills, attitudes, and behaviour needed to practice medicine. So it is essential to assess the factors influencing the performance, to improve the overall outcome of students. Hence this study was conducted to assess the factors influencing the academic performance of the medical students in Bengaluru**.**

MATERIAL AND METHODS

A Cross Sectional Study was conducted in Government medical college of Bengaluru among undergraduate M.B.B.S. students from August to October 2016. Sample size was calculated based on the study conducted by Shawwa LA et al [7], in which the 60.7% of high Grade point average students spent less than 2 hours on social networking per day.   Based on prevalence value of 60.7% and with absolute precision of 5%, the sample size was calculated as 381. A non-response rate of 10% was added and sample size was rounded off to 420. After obtaining ethical clearance, the study was conducted. By simple random sampling technique, participants were chosen from 2nd year till internship. Data was collected using pre tested, semi structured and self-administered questionnaire, by the principal investigators after obtaining consent from the students. Questionnaire consisted of socio demographic profile of study participants, their exam scores and also the various factors which may influence it. Data was entered in excel and analysis was done by using SPSS software. Results are presented in terms of frequencies and percentages. Chi square and Fischer's exact test was applied to find the association between variables and the academic

performance. P value < 0.05 is considered significant. Tables are added wherever necessary.

RESULTS

A total of 420 students participated in the study. Among them 209 students were from 3rd term, 39 students were 5th term, 118 were 6th term, 27 were 7th term and 27 were interns. About 267 (63.6%) were males and 153 (36.4%) were females. Majority (91.2%) were belonging to Hindu religion. The students from general merit quota were 78.6% and reservation quota was 21.4%. Majority of the students were belonging to the nuclear family (82.6%), followed by joint family (10.5%) and three generation family (6.9%). Amongst them, 58.1% were staying in the hostel. Majority of the students were from the upper SES (53.1%), upper- middle (42.4%) and to the lower middle SES (4.5%) and no one were from the Upper lower and lower socioeconomic status. The average allowance of the students was Rs.4535 per month. Around 3.1% (13 students) were not receiving any allowances. Among the students who received the allowances, majority, 73.3% (308 students) were satisfied with the amount and 26.7% were not happy with the allowances. Among the students who were staying in the hostel (245), around 118 (46.1%) of the students were satisfied with the facilities provided and 123 (48%) were satisfied with the food provided in the hostel. The average number of absenteeism per month was 3 days with the maximum of 12 days in a month. The average number of study hours among the students was 2-3 hrs per day. Majority (58.3 %) secured first class marks in the recent examination and 2.9% had failed in the exams (Table 1).

Table 1: Academic performances of the students

Academic performance	Frequency of students (N)	Percentage of students (%)
Distinction (75-100%)	57	13.6 %
First class (65-74%)	245	58.3 %
Second class (51-64%)	106	25.2 %
Fail (<50%)	12	2.9 %

It was found that females had performed better than males. There was no association between the academic performance and student's quota. Students belonging to nuclear family had better performance than students belonging to joint and 3 generation family. There was no association between academic performance and parents living status. Students belonging to Upper class performed better than upper-middle and lower-middle class. Students residing at home performed better than residing at paying guest, relative's house and Hostel. Students sleeping for >8hrs performed better than sleeping for <8hrs. Students who did not have English coping difficulty had performed better than who had English coping difficulty. There was no association

between academic performance and habits, education loan, family history of mental illness, relationship and relationship failure. (Table 2)

DISCUSSION

In the present study, demographic factors like gender, type of the family and socio economic status were significantly associated with student's overall academic performance. The use of gadgets (like mobiles/computer/internet), (used in leisure time) had no significant association, which is similar to a study conducted by Reddy VB et al, to assess the factors affecting the performance, in Uttarakhand, where gender had significant effect but use of gadgets (mobiles/computer/internet) had no significant association with the academic performance of the medical students.[8]

In the present study, 48 (11.4%) of the students had English language coping difficulty. Around 2.9% had secured poor marks with less than 50%, compared to a study conducted by Mandal A et al, about factors affecting the performance of undergraduate medical students, in a tertiary care hospital and Medical college in Eastern India, where 55 (36.66%) students performed poorly in the test and 14% of the study population faced difficulty in understanding the medium of instruction (English) and there was significant association of it with the academic performances and male gender had performed poor.[2]

In this study, place of residence had an association with the academic performance similar to a study conducted by Roy SS et al, about predictors of academic performance of medical students in Kolkata where the local aid students consistently performed better than those in hostel (p<0.01).[9]

In the present study, it was found that hours of sleep are significantly associated with the academic performance of the undergraduate medical students. In a study conducted by Siraj HH et al on sleep pattern and academic performance of undergraduate medical students at university Kebangsaan Malaysia stated that respondents who slept >6 hours were observed to have significantly higher academic performance.[10]

In a study cross sectional study on the relationship between sleep and wake habits and academic performance in medical students by Bahammam AS et al it was found that sufficient sleep and the non-smoking status were the independent predictors of excellent academic performance.[11]

In this study, habits like alcohol and smoking or drugs had no significant effect on the study performances. In a study by Abdulghani HM et al about the factors determining the academic performances of the students with higher performances showed that sleep deprivation, language barrier, stress etc. can play an important role in the academic outcome of the students. [3]

Shawwa AL et al had conducted a study on Factors potentially influencing academic performance among medical students, which showed that spending lesser time

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Table 2: Association of the factors affecting the academic performances of the students

FACTORS		ACADEMIC PERFORMANCE				P VALUE
		Distinction (75-100%)	First class (65-74%)	Second class (51-64%)	Fail (≤50%)	
Gender	Female	34 (21.9%)	103(66.5%)	16 (10.3%)	2 (1.3%)	p= <0.001 df =3 *
	Male	23 (8.7%)	142 (53.6%)	90 (34%)	10 (3.8%)	
Quota	SC	2 (5.3%)	18 (47.4%)	17 (44.7%)	1 (2.6%)	
	ST	0	4 (50%)	4 (50%)	0	
	OBC	6 (13.6%)	29 (65.9%)	76 (23%)	0	p=0.120**
	GM	49 (14.8%)	194 (58.8%)	106 (23%)	11 (3.3%)	
Family	Joint	4 (9.1%)	18 (40.9%)	17 (38.6%)	5 (11.4%)	
	Nuclear	50 (14.4%)	211 (60.8%)	79 (22.8%)	7 (2.0%)	p=0.007**
	3- Generation	3 (10.3%)	16 (55.2%)	10 (34.5%)	0	
Parents Alive	Single parent	2 (15.4%)	9 (69.2%)	2 (15.4%)	0	p=0.805**
	Both Parents	55(13.5%)	236 (58%)	104 (25.6%)	12 (2.9%)	
SES	Upper	32 (18.2%)	108 (61.8%)	32 (18.2%)	4 (2.3%)	
	Upper –middle	25 (10.9%)	130 (56.8%)	66 (28.8%)	8 (3.5%)	p=0.012**
	Lower -middle	0	7 (46.7%)	8 (53.3%)	0	
Place of residence	Hostel	23 (9.4%)	147 (60%)	69 (28.2%)	6 (2.4%)	
	Paying Guest	3 (27.3%)	0	7 (63.6%)	1 (9.1%)	p= <0.001*
	Relative's house	4 (23.5%)	6 (35.3%)	6 (35.5%)	1 (5.9%)	
	Home	27 (18.4%)	92 (62.6%)	24 (16.3%)	4 (2.7%)	
Sleep	< 8hrs	36 (12.7%)	165 (58.3%)	78 (27.6%)	4 (1.4%).	p=0.034 df =3*
	>8 hrs	21 (15.3%)	80 (58.4%)	28 (20.4%)	8 (5.8%)	
Gadget use	No	5 (10.4%)	25 (52.1%)	16 (33.3%)	2 (4.2%)	p= 0.477 df =3 *
	Yes	52 (14%)	220 (59.1%)	90 (24.2%)	10 (2.7%)	
Habits	Smoking	0	1 (50%)	1 (50%)	0	
	Alcohol	0	0	2 (100%)	0	p= 0.240 **
	Nothing	57 (13.7%)	244 (58.7%)	103 (24.8%)	12 (2.9%)	
English coping difficulty	No	55 (14.8%)	221 (59.4%)	86 (23.1%)	10 (2.7%)	p=0.016 df =3*
	Yes	2 (4.2%)	24 (50%)	20 (41.7%)	2(4.2%)	
Education loan	No	56 (14.4%)	226 (58.2%)	95 (24.5%)	11 (2.8%)	p=0.199 **
	Yes	1 (3.1%)	19 (59.4%)	11 (34.4%)	1 (3.1%)	
Family history of mental illness	No	56 (13.5%)	243 (58.4%)	105 (25.2%)	12 (2.9%)	p=0.199 **
	Yes	1 (25%)	2 (50%)	1 (25 %)	0	
Relationship	No	54 (14.1%)	223 (58.4%)	94 (24.6%)	11 (2.9%)	p= 0.644 df =3 *
	Yes	3 (7.9%)	22 (57.9%)	12 (31.6%)	1 (2.6%)	
Relationship failure	No	55 (13.9%)	233 (58.7%)	98 (24.7%)	11 (2.8%)	p=0.520 **

net had significant association with the academic outcome. The family size and the financial problems also had no significant association.[7]

In this study, it was found that gender, type of family, socio-economic status, place of residence, hours of sleep and language coping difficulty was found to have the statistically significant association with the academic performance. This can help in improving the academic performance among the undergraduate students by helping them with English coaching classes to cope with the difficulties to understand language, proper guidance for proper sleep and encouragement to the better

achievement. The study cannot be generalized as it includes only students from single government medical college. Conducting a multicentre study throw light on multiple factors, this further can help to improvise the academic performances of the medical students.

Conclusion:

Identifying the effect of various factors on undergraduate medical student's academic performance is of great importance. In the present study, it was found that the demographic factors like gender, type of family, socio economic status and the place of residence had a significant effect on the academic performance whereas the factors like reservation and general merit category had

no significant associations. Personal factors like hours of sleep and the English coping difficulty had association with the academic performance of the medical students. In this study, gadgets use, habits and factors causing stress and depression such as loss of parents, having relationship failure, educational loan had no significant association. By addressing the factors which affect the performance among the medical students, their performances can be improved.

Limitation: Other factors which influence the performance of the medical students were not assessed. Few students were not assessed as they were absent on the day of the study. The results cannot be generalized as study set up was limited to government medical college.

REFERENCES

1. Sharma P, Singh P, Kalhan S, Garg S. Analysis of Factors Affecting Academic Performance of MBBS Students in Pathology. Ann. Int. Med. Den. Res 2017 Jul;3(5):P9-15.

2. Mandal A, Ghosh A, Sengupta G, Bera T, Das N, Mukherjee S. Factors affecting the performance of undergraduate medical students: A perspective. Indian J Community Med 2012 May 12;37(2):126-29.

3. Abdulghani HM, AlKanhal AA, Mahmoud ES, Ponnamperuma GG, Alfaris EA. Stress and Its Effects on Medical Students: A Cross-sectional Study at a College of Medicine in Saudi Arabia. J Health Popul Nutr 2011 Oct;29(5):516-22.

4. Deliens T, Clarys P, Bourdeaudhuij ID, Deforche B. Weight, socio-demographics, and health behaviour related correlates of academic performance in first year university students. Nutrition Journal 2013 Dec 17;12(1).

5. Rospenda KM, Halpert J, Richman JA. Effects of social support on medical students performances. Acad Med 1994 Jun; 69(6):496-500.

6. Trucchia SM, Lucchese MS, Enders JE, Fernandez AR. Relationship between academic performance, psychological well-being, and coping strategies in medical students. Rev Fac Cien Med Univ Nac Cordoba 2013; 70(3):144-52.

7. Shawwa LA, Abulaban AA, Abdulrhman AA, Merdad A, Baghlaf S, Algethami A, Abu-shanab J,Balkhoyor A. Adv Med Educ Pract 2015 Jan 29; 6:65–75.

8. Reddy VB, Gupta A, Singh AK. A study to assess factors affecting the performance of undergraduate medical students in academic examination in community medicine. Int J Community Med Public Health 2017;4(4):1066-70.

9. Roy SS, Chandalawada J. Predictors of academic performance of medical undergraduate students of microbiology class in Kolkata. Int J Med Public Health 2014;4:392-95.

10. Siraj HH, Salam A, Roslan R, Hasan NA, Jin TH, Othman MN. Sleep pattern and academic performance of undergraduate medical students at universiti Kebangsaan Malaysia. Journal of Applied Pharmaceutical Science 2014 Dec;4(12):52-55.

11. Bahammam AS, Alaseem AM, Alzakri AA, Almeneessier AS, Sharif MM. The relationship between sleep and wake habits and academic performance in medical students:a cross-sectional study. BMC Medical Education 2012:12:61.

Conflict of Interest: None