

Original Research Article

Evaluation of study methodology patterns among first year MBBS students: a pilot study

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ABSTRACT

Background: Academic achievement and achieving educational goals require the existence of several factors, most importantly the study habits of individuals. Because of the high sensitivity of future professions, and the need for comprehensive learning of the curriculum, paying attention to the study habits and its promotion is critically important. The differences in study habits can be attributed to the individual differences and their previous educational background. Studies indicate that incorrect study habits of students need to be identified and fixed because many of these incorrect habits get transferred to higher education levels. Hence, it becomes necessary to provide suitable guidance to improve these habits.

Methods: This was cross sectional, observational pre-validated questionnaire-based pilot study conducted by enrolling 107 students of first year MBBS.

Results: The study included 46 males and 57 females and 4 did not mention the gender. Age of participants ranged from 17 years to 21. Around half students were from urban background, half of the students were from English medium. 57.9% participants reported they did not have a regular sleep pattern and 12.15 % reported they strongly never had regular sleep pattern. All students denied regular exercise. 41 out of 107 said they use or used cigarettes to boost their concentration and memory. On the other hand, 42.9% said they used alcohol and other substances in the past. When compared by gender difference, males were more likely to engage in day dreaming, and skip chapter that does not interest them as compared to female participants. Females were more likely to make an outline of chapters before reading, refer dictionary when needed, discuss studied topic with others by asking questions. Surprisingly female were more embarrassed of asking questions.

Conclusions: To conclude, the results of our study on medical students showed that attending study skill workshops and learning related abilities can empower the students in the areas of selecting the main idea, study aids, information processing, self-testing, and use of test strategies. However, teaching self-regulation strategies and practicing them in class can create opportunities that help the students manage and monitor their learning.

Keywords: Study techniques, Medical students, Study methodology patterns, First year MBBS students

INTRODUCTION

Medical education is totally unique when compared with other graduate educations in our country. In medical colleges, students from various parts of the country take graduate and post-graduate education. Even international

students do get admissions in our medical colleges. Hence with a lot of diversity among students, we find a lot of variations in their studying and learning patterns.¹ Students commencing their medical training arrive with different educational backgrounds and a diverse range of learning experiences. Consequently, students develop

preferred approaches in acquiring and processing information or learning style methods.²

Students all over India have different teaching learning methods related to different board exams and entrance exams for getting into these medical professional courses. Once they enrol into professional courses like medicine, the entire syllabus starting from first year is based on different parameters of competency and skills. Students who have traditional methods of studying face difficulties while understanding and learning the syllabus.³ So it is important to have baseline evaluation of various study methodology patterns of the students while they have just started their medical education.

Once we get insights into this important aspect, we can counsel students for rectification of their study pattern help students to cope more effectively while studying and help them to understand the subjects, which in turn will give proficient medical graduates.⁴ Hence, we aimed this study to evaluate the various attitudes and practices followed by first MBBS students while studying their subjects.

METHODS

This was cross sectional, observational questionnaire-based pilot study conducted in tertiary care hospital and research centre in north Maharashtra, India.

Study settings

The study was conducted at Dr. Vasantrao Pawar medical college hospital and research centre, Adgaon, Nashik, Maharashtra, India.

Duration of study

The study conducted from January 2020 to February 2020.

Students willingly ready to give informed consent for participating in this study were included. The recruitment and collection of information process will be carried out under the supervision of principle investigator.

A semi structured questionnaire prepared and pre-validated by the department of psychiatry, was administered to students (Annexure 1). Participants' demographic data, questions pertaining to their attitude and practice towards study methodology and other relevant data and student's responses to them were noted.

Microsoft excel was used for analysis of data. Continuous variables like the demographic data were expressed as mean \pm SD whereas categorical variables like the measured responses of students to various questions were expressed in absolute numbers or percentages and compared by chi-square test.

RESULTS

A pre-validated questionnaire was distributed among the subjects i.e., first year MBBS students. The obtained data showed that 46 subjects were male (42.9%), 57 subjects were female (53.2%) and 4 (0.03%) did not mention their gender. Age of participants ranged from 17 years to 21 with mean age of 19 (51.40% participants of age 19) and standard deviation of 0.8. Approximately half of the students (n=50: 46.72%) were from urban background while remaining from rural or mixed background. Half of the students (n=53; 49.53%) were from English medium school and colleges. 6.55% participants said that the choice of medicine as a carrier was their own decision and 47.6% agreed the familial persuasion was the major factor. Remaining subjects mentioned both (Table 1).

57.9% participants reported they did not have a regular sleep pattern and 12.15% reported they strongly never had regular sleep pattern. To our astonishment, all students denied regular exercise and 98% strongly denied regular exercise. 41 out of 107 (38.3%) subjects agreed the use of cigarettes to boost their concentration and memory while 42.9% uses alcohol and other substances in the past for the same. Although 77% agreed that they studied in places with adequate light ventilation and low noise to prevent distraction, only approximately 40% had a strict schedule of time in day time for studies. 68.2% participants agreed that they were night owls by habit when it comes to studies, 42.05% prefer to study at specific time in a day regularly. Also 48.5% (n=52) agreed that they listen music or use mobile while studying. Surprisingly, 64.4% (n=69) agreed in engaging themselves in day dreaming while studying.

When it comes to study techniques, 39.2% subjects accepted that they skip topic/chapters that they did not find interesting or difficult to understand. 62.6% made outline of chapter before reading and similar amount of people refer dictionaries when they came across a new terminology (Table 2).

Out of 107, only 24.29% declared that they study even when feeling sleepy, tired and bored. 37.3% never took regular breaks while studying. 69 out of 107 (64.4%) claimed to master a topic by reading it again and again, 72% take down notes in own words, 68.2% tried to explain to a friend who has not read it or has not understood the topic. Approximately 1/5th of students discussed the topic/ chapter with friends by asking questions. 47.66% assess how much they remembered about the topic even if 78.5% claimed to be aware of various methods to remember such as mnemonics, imagery and memory palace. 73.8% participate in question answer tutorials but 86.9% feel shy/fear/embarrassment while asking questions. 59.8% agreed with 22.4% strongly agreed that that some student can study for less time and still remember more. For purposes of examination 57% take internal assessment seriously, 85.9% review/revise after 3-4 days, 87%

practise university exam paper of past couple of years, 79.4% study till last moment of exam, 97.1% are able to write all the questions within given time frame of exam (Table 2).

When compared gender difference males were more likely to engage in day dreaming, and skip chapter that

does not interest them as compared to female participants. Females were more likely to make an outline of chapters before reading, refer dictionary when they come across a new terminology, discuss studied topic with others by asking questions. Surprisingly female were more shy/embarrassed of asking/answering question (Table 3).

Table 1: Demographic data.

Demographic data (n, %)			Remark	Total
Gender	Females (57; 53.2)	Males (46; 42.9)	Not mentioned (4; 0.03)	107
Background	Urban (50; 46.72)	Rural (19; 17.75)	Mixed or blank (38; 35.51)	107
Medium	English (53; 49.53)	Marathi (8; 7.47)	Other and blank (46; 42.99)	107
Choice of medical career	Self-decided (7; 6.55)	Due to family persuasion (51; 47.66)	Add both (49; 45.79)	107

Table 2: Response of students to attitude and practice-based questions (n=107).

Questions	Disagree (%)	Agree (%)
I have regular sleep pattern/hours?	62 (57.94)	45 (42.05)
I exercise regularly?	107 (100)	0
I consume cigarettes to boost my concentration and memory?	66 (61.68)	41 (38.31)
I prefer to study at specific time in the night time regularly?	34 (31.77)	73 (68.22)
I listen to music/use mobile while studying?	55 (51.40)	52 (48.59)
I study even if I feel sleepy, tired or bored?	81 (75.70)	26 (24.29)
I engage in day dreaming while studying?	38 (35.51)	69 (64.48)
I skip the topic/chapter which does not interest me or find difficult to understand?	65 (60.74)	42 (39.25)
I make outline of the chapter before reading?	40 (37.38)	67 (62.61)
While studying if I come across a new term, I refer dictionary?	40 (37.38)	67 (62.61)
I master a particular topic by reading it ___number of times? (specify the number)	38 (35.51)	69 (64.48)
After reading I assess how much I have remembered?	56 (52.33)	51 (47.66)
I take down my notes in my own words?	28 (26.16)	78 (72.89)
I explain topic to a friend who has not read it or has not understood the topic?	33 (30.84)	73 (68.22)
I discuss studied topic/chapter with my friends by asking questions?	85 (79.43)	22 (20.56)
I feel shy/fear/embarrassment while asking/answering a question?	14 (13.08)	93 (86.91)
While studying I prepare diagram, charts and tables?	53 (49.53)	54 (50.46)
I write/practise university exam paper of past couple of years?	13 (12.14)	94 (87.85)
I study till last moment of the exam?	22 (20.56)	85 (79.43)

Table 3: Sex-wise comparison of mean scores.

Questions		Female	Male
I have regular sleep pattern/hours?	Disagree	0.001745*	0.002162*
	Agree	0.002535*	0.003141*
I prefer to study at specific time in the night time regularly?	Disagree	0.003763*	0.004662*
	Agree	0.001774*	0.002198*
I listen to music/use mobile while studying?	Disagree	0.273181	0.338506
	Agree	0.267927	0.331997
I engage in day dreaming while studying?	Disagree	1.854104	6.123564
	Agree	0.996235	0.038813*
I skip the topic/chapter which does not interest me or find difficult to understand?	Disagree	0.986328	0.026537*
	Agree	1.553466	5.751034
I make outline of the chapter before reading?	Disagree	0.013424*	1.212286
	Agree	0.007525*	1.444108

Continued.

Questions		Female	Male
While studying if I come across a new term, I refer dictionary?	Disagree	0.050364	0.540668
	Agree	0.029443*	2.188658
I discuss studied topic/chapter with my friends by asking questions?	Disagree	0.000101*	2.152299
	Agree	0.000417*	0.478778
I feel shy/fear/embarrassment while asking/answering a question?	Disagree	0.198223	0.006494*
	Agree	0.028632*	2.905044

*P<0.5 is considered statistically significant. (n=107)

DISCUSSION

This study was conducted as a pilot project to evaluate the study methodology patterns in first year MBBS students. In our study, we tried to formulate the common methods of study patterns in these students since they secured undergraduate seat by cracking one of the toughest pre-medical entrance examinations in our country. This could have been denoted by the fact that 93.4% chose to be in the medical field due to tremendous persuasion from the family in addition to their own interest. Academic achievement and achieving educational goals require the existence of several factors, the most important of which is the study habits of individuals⁵. Because of the high sensitivity of future professions in medical students, and the need for comprehensive learning of the curriculum, paying attention to the status of study habits and its promotion is critically important. The differences in study habits can be attributed to the individual differences and their previous educational background. Studies indicate that incorrect study habits of students need to be identified and fixed because many of these incorrect habits get transferred to higher education levels. Hence, it becomes necessary to provide suitable guidance to improve these incorrect habits.^{6,7}

Regarding the different areas of study habits, the result of a study conducted on 150 nursing students in Iran showed that most of the student's problems were related to taking notes, reading ability, time management, mental well-being, memory, motivation, learning, physical condition, and taking tests.⁸ In some studies, time management has been described as one of the major problems for medical students.^{9,10} Similar results were found in our study since 88% students reported that they practice university exam papers in order to have better time management. Almost 85% of them study till last moment of the exam which could be attributed to the fact that they were either revising or compensating for backlogs in the schedule of studies.

In our study, many students did not have a regular sleeping schedule. Many of them were night owls (69%), and some even used cigarettes, alcohol, etc. to boost their concentration. Males were found engaging themselves in day dreaming and others listen to music during studies. And almost all of them did not believe in regular exercise will help in concentrating on studies, which is contrary to the recent finding by the Mandolesi et al.¹¹ This further

emphasizes the need of educating youngsters with study hygiene since only 40% followed strict schedule of study timing. Studies have shown a negative relationship between self-regulation and anxiety.¹² Another study in Turkey showed a direct association between positive attitude and use of learning strategies.¹³ The results of the study by West showed that time management and self-testing are strong predictors for the success of medical students in their first year.¹⁴ Also, a study by Loub et al on pharmacology students showed that anxiety, concentration, selecting the main idea, and exam strategies had positive correlations with the success of freshman students.¹⁵

Since 85% reported they study till last moment of exam, there could be rise in anxiety and exhaustion in pre-exam period as per the study by Rouhani and his colleagues.¹⁶ Majority (60%) believed that some of the gifted students barely study but can remember better than others, whether this contributes to good academic grades or not is still a question of interest. This could be due to cognitive bias which was difficult to be rectified.

Certain studies showed that, in addition to the factors that directly affecting learning, other factors such as planning and general organizing, outside regulations, environmental restoration, recall, comprehension, and cognitive and metacognitive factors can also affect the use of learning strategies.¹⁷ while studying certain learning habits, some of the students preferred to read favourite topic and skip uninterested ones. It was 25% of participants who reported that they studied even when they felt sleepy, tired and bored, never took regular breaks (39%). Although they were aware of various memorising techniques, almost half of them did not have self-testing techniques. A study by Stewart on pharmacology students showed that students with better self-testing abilities are more successful in their final exams.¹⁸ Only 25% students discussed with friends by asking questions to each other. 70% students participated in question answer tutorial but majority (90%) of them (especially females) felt shy/embarrassed for asking questions.

In our study we found some good habits in most participants such as 63% of them make an outline of chapter before reading and similar number of students use dictionary whenever they come across new terminology while reading. 72% students take down their personal notes in their own handwriting, and 64% re-read same

topic to master it well. 68% reported that explaining a topic to a friend who has not read it helped them in studies. In spite of all this, only 57% first year students took internal assessment seriously. When it comes to exam, 85% reported they revise/review every 3-4 days. Similar number of students practice exam paper of previous year and as a result of this, 97% are able to complete their exam in time. The results of a study on medical students showed that attending study skill workshops and learning related abilities can empower the students in the areas of selecting the main idea, study aids, information processing, self-testing, and use of test strategies.^{19, 20}

There are some limitations to this study. First, this was a cross-sectional, pilot study and according to the nature of cross-sectional studies, it is not possible to determine the causal relationships between study variables. Another limitation in this study was related to the data collection method, which was only self-reporting. Despite reassuring the participants about the confidentiality of their responses, there might have been fake good answers/ giving ideal answers which might have had an impact on the accuracy of our results. Teaching self-regulation strategies and practicing them in class can create opportunities that help the students manage and monitor their learning.²¹

CONCLUSION

To conclude, there might have been a gap between assessment and implementation of study techniques. Step must be taken to rectify gap between assessment and implementation. It is important to evaluate study patterns and rectify maladaptive study pattern in medical students. Our study findings highlight that workshop on study technique and stress management for medical students for effective study habits and good academic performance. It also emphasizes on importance of exercise, study hygiene, addiction free lifestyle, and different effective approaches to study for better academic outcome.

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ANNEXURE 1

Proforma

After MBBS, I want to become _____

- a) Physician
 - b) Surgeon
 - c) Gynaecologist
 - d) Other
 - e) Not yet decided?
- 1) In your choice of medicine as a career, the decision was entirely yours?
 - 2) In your choice of medicine as a career, the decision was because of family persuasion?
 - 3) I have habit of studying regularly throughout academic year?
 - 4) Do you agree that some student can study for less time and still remember more than you?
 - 5) I have regular sleep pattern/hours?
 - 6) I take breakfast regularly before going to lecture/clinic?
 - 7) I take a balanced diet?
 - 8) I exercise regularly?
 - 9) I consume tea/coffee to increase my concentration and memory?
 - 10) I consume cigarettes to boost my concentration and memory?
 - 11) I consume alcohol and/or other substances?
 - 12) Do you study in a place with adequate light, ventilation and low noise to prevent distraction?
 - 13) Do you sit at the same place every time for study?
 - 14) I prefer to study at specific time in the day time regularly?
 - 15) I prefer to study at specific time in the night time regularly?
 - 16) I listen to music/use mobile while studying?
 - 17) I study even if I feel sleepy, tired or bored?
 - 18) I engage in day dreaming while studying?
 - 19) I space my study timing/take regular breaks for study?
 - 20) I read given chapter/parts of chapter randomly or whichever interest me first?
 - 21) I skip the topic/chapter which does not interest me or find difficult to understand?
 - 22) I start reading from the first paragraph of the chapter?

- 23) I make outline of the chapter before reading?
- 24) While studying if I come across a new term, I refer dictionary?
- 25) I always understand whatever I have read i.e. I can explain the same to someone else?
- 26) I master a particular topic by reading it.... number of times? (Specify the number)
- 27) After reading I assess how much I have remembered?
- 28) I review/revise particular chapter after 3 to 4 days?
- 29) I use highlighter during my reading?
- 30) I take down my notes in my own words?
- 31) I explain the topic to a friend who has not read it or has not understood the topic?
- 32) I discuss studied topic/chapter with my friends by asking questions?
- 33) I participate in question answer tutorial?
- 34) I feel shy/ fear/embarrassment while asking/ answering a question?
- 35) I am aware of and follow method to remember whatever I have understood (e.g., mnemonics, memory palace, imagery etc.)?
- 36) While studying I prepare diagram, charts and tables?
- 37) I take internal assessment exam seriously?
- 38) I am able to write all the questions within a given time frame of exam?
- 39) I write/practice university exam paper of past couple of years?
- 40) I study till last moment of the exam?