ORIGINAL RESEARCH

Exploring The Time Management Skills Among First-Year Medical Undergraduates: An Early Sensitization

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ABSTRACT
Background: Arranging and regulating the time to improve productivity and efficacy is called as Time management. Time management skill (TMS) increases the productivity and efficiency that ultimately lead to a healthier life for us by making us more settled and systematized.
Objective: To assess the time management skills of undergraduate medical students of a NCRIMS Medical College and Hospital, in Meerut.
Methodology: This cross-sectional study was conducted among 130 undergraduate medical students of a NCR Medical college and Hospital, tertiary healthcare institution in Meerut. The time management skill was assessed using a time management questionnaire (TMQ) which has 10 questions in 5-point Likert scales. The TMQ has 10 questions, each question has to be rated under a 5-point Likert scale and indicates as follows: 1 – never, 2 – rarely/infrequently, 3 – sometimes, 4 – often/frequently, and 5 – always. The higher score corresponds to better time management.
Results: Out of all students, 80% chose code 4 (16.9%) and code 5 (63.8%), and this frequency was climbed slightly to 88% after post analysis using combination answer of codes According to the heat plot, the majority of students chose codes 1, 2, and 3 in the earlier analysis. However, after further investigation, it appears to have reverted to codes 4 and 5.
Conclusion: Majority of the students possess poor to average time management skills. One of the reasons may be in medical colleges people didn't organise workshop, awareness program or debate on such hot topic so in future, further study relating time management with academic performance may be conducted and counselling/workshops/task within deadline and poster presentation should be organized for students to improve their time management skills.
Keywords: Deadlines, Medical Students, Self- Directed Learning Readiness, Time Management Skill, Time Management Questionnaire, Multitasker.

INTRODUCTION

Lack of the "Effective or Efficient Time Management" is one of the biggest issues facing current medical students. The criterion for well-organized time management lies not only in achieving recognised goals, but also in finishing them in the pre-decided deadlines or timeline. A critical question is now roaming how to use the available time in the most effective and actual way possible?. Rigid and non-renewable source is called "Time" and no such methods are available for the collection and amplification of time.[1] When a student is not able to complete the academic task and assignments then anxiety, obstructions, low confidence etc., settled in his/her mind then ultimately resulting in poor academic results. Effective time management is the significant tool to accomplishment and better academic presentation among students.[2] Time management is all about thoughtful and pre planned use of time available, setting priorities, and

accomplish them within deadline. In the context of professional course like MBBS, student must break down the tasks into little chunks and write down everything that has to do in advance. It also results in nervousness, unhappiness of not achieving desired academic performance and deprived sleep.[3] Ultimately, physical and mental health of the students deteriorates, hampering their acquisition of skills and knowledge. Because the National Medical Council of India predicts a medical graduate to be a lifelong learner, time management becomes essential, given the high volume of curricular and extracurricular activities during MBBS.[4] Along with the improved and organized life, effective time management is also allow us to enjoy his/her life by sparing and devoting more time for himself, for his family, relatives and friends.[5] Currently, time management is considered a very important component for individual and team success especially in the professional setting. Effective time management is associated with higher academic performance, while poor time management in students is associated with higher perceived stress.[6] Being unable to plan and use time properly and doing last-minute study for exams are some factors that can increase stress among students leading to poor academic performance. Sometimes, time wasting factors in college can be external issues which suddenly come up e.g. unplanned events, strikes, accidents, emergencies; these issues can affect students' studies adversely.[7] Students usually have less control on these unforeseen issues. However, the internal time-wasting factors of students can be even more important than the external factors. Some of these factors are lack of prioritization, procrastination and distractions. Some students may be overwhelmed by the task and they put it off till later dates.[8] This procrastination is due to habitual laziness. It does not let us complete the task rather it brings more tension. Delay and lack of prioritization are two most important problems among students. Lack of time management skills can lead to procrastination especially when students don't meet the deadlines.[9] Distractions, while studying, can also waste students' time. Some students may be distracted as they wrongly feel that some unrelated and unimportant things need their urgent attention. This may happen when students have tons of work to be done and they are lazily looking for an appropriate time to study. It has been observed that medical students have huge curriculum. It may be difficult for some of them to manage their study and leisure time which may lead to stress.[10] There seem to be shortage of evidence on time management skills, academic performance and perceived academic satisfaction among UP medical students. Therefore, this study was conducted to: (a) assess time management skills of UP medical students, (b) explore correlation between total time management score and various parameters of academic performance of the participants. Hence, this study was planned to assess the time management skills of undergraduate medical students of a tertiary care health institution in Meerut.

MATERIALS AND METHODS

Study conducted among MBBS students of a NCRIMS Medical college in Meerut. The medical college has 150 intakes into MBBS course every year. This study was conducted as a part of self-directed learning readiness (SDLR) study among MBBS students of a private medical college in Meerut. The community medicine subject is taught from the first through seventh semester in the medical college. Presented sensitization study has been approved by the Institute Ethics Committee of the Medical College. This cross-sectional study was conducted during foundation course of newly admitted MBBS students' batch 2022-23 along with written informed consent to participate. This explorative study was conducted during Foundation course, although we intended to include all the students during the study period, only 130 gave written informed consent to participate. Chronic absentees and student self-reporting under psychiatric care were excluded from the study. The study tool, which was self-administered, had four sections. First section had a semi-structured proforma to collect general information about the participants. The various information such as age, gender, class 12th board, language of class 12th board, residence (urban/rural), and current stay (hostel/day scholar) were collected and time management questionnaires (TMQs) were given. The TMQ has 10 questions, each question has to be rated under a 5-point Likert scale and indicates as follows: 1 – never, 2 – rarely/infrequently, 3 – sometimes, 4 – often/frequently, and 5 – always. The higher score corresponds to better time management. The students were asked to assemble in a lecture hall. The principal investigator explained the study procedures and tools, and students giving written informed consent were distributed the self-administered study tool. No discussion and talking among students were ensured. Association between time management scores and sociodemographic variables was assessed using unpaired t-test, and $P < 0.05$ was considered statistically significant.

STATISTICAL ANALYSIS

For continuous data, normality was tested using Kolmogorov Smirov test. For non-normal continuous data, NPr was used to compare the groups as appropriate. Categorical data were presented in frequency. For age data was represent in terms of mean and standard deviation. Statistical analysis was carried out using the statistical package for the social science, version 22 (SPSS-22, IBM, Chicago, USA) and graphs were preparate by Prizm software. Two tailed p value < 0.05 has been considered as significant.

RESULTS

We conducted research on 150 MBBS students based on a questionnaire, but we found that only 130 questionnaires were completed, thus we selected only 130 persons to study. The mean age ($\pm$ SD) of this study is cases and controls are 19.83$\pm$ 1.5 years in which male 38.4% and females are 61.5%. The first question of this study was (Q1) do you plan your day for study and for the other activities before the start of the day? About 38% of students admitted to doing it occasionally (code C3), 26% admitted to doing it frequently (code 4), and 15% said they always do it (code 5). Following post analysis, the frequency of code 3 was reduced by 50% ($p<0.01$), while the frequency of codes 4 and 5 increased by 21% and 50%, respectively (Code 4: pre 26% vs post 33% and Code 5: pre 15% vs post 32%) (all $p <0.05$). On the other hand, the difference between pre and post analysis for code 1 and 2 was found to be null ($p>0.05$). Moving towards the next question (Q2) in the questionnaire do you make a set of at the beginning of the to be achieve in a week? Most of the students (43%) were agree with code 3 followed by code 4 (26.9%), code 5 (11.5%) =code2 (11.5%), code 1 (6.9%). After post analysis again code 4 and 5 were significantly rise (all $p<0.05$). The following question (Q3) was, "Do you set your priority on the basis of its urgency, importance and utility?" 42% of students agreed to do it on occasion (code C3), while 15% and 23% of students chose codes 4 and 5. This number, however, decreased significantly with code 3 and increased with codes 4 and 5 (all $p<0.01$). Following post-analysis, it was discovered that students preferred codes 4 and 5 over codes 1, 2, and 3. The next question was from the questionnaire (Q4) was- Do you have ever seen the distractions pr Do you know the list of your distractions, 32% of students agreed to do it frequently (code C4), whereas 25% and 24% chose codes 5 and 3, respectively. Only 14 and 3% of students chose codes 1 and 2, respectively. After post-analysis, the frequency did not change significantly ($p>0.05$). That is, the difference was judged to be non-significant following post-analysis. Moving towards the next question (Q5): how frequent you revised or re schedule your plan in a week; we have noted highest frequency 46% of students agreed to do it sometime (code C3), whereas 25% and 16% chose codes 4 and 2, respectively. Only 6.2% of students chose codes 1 and 5. Further, the difference was judged to be null following post-analysis (all $p>0.05$). The next question (Q6) was, Do you think actually multitasker and goal setter will achieve his/her goal? 38% of students agreed to do it on defiantly (code C5), while 34% and 3.8% of students chose codes 3 and 1. Only 11.5% of students chose codes 2 and 4. The percentage with code 5 rises after post analysis up to 38 to 53% (all $p<0.01$). Following post-analysis, it was discovered that students preferred codes 5 over codes other. Further, next question (Q7): do you have calendar on your study table and you keep a record of important dates on a single calendar and check it regularly; we found that 26.9% of students agreed to do so frequently (code C4), while 23.8% and 21.5% chose codes 5 and 3, respectively. Only 15.4% and 12.3% of students chose codes 1 and 5, respectively. Following post-analysis, the difference was determined to be null (all $p>0.05$). Moving towards the next question (Q8): do you set your time limit (time target) for completion of your goals. About 41.5% of MBBS students admitted to doing it occasionally (code C3), 22.3% admitted to doing it defiantly (code 5), and 15% said they always do it (code 4). 13.1% and 7.7% of students were chose codes 2 and 1, respectively. Following post analysis, the frequency of code 1 to 3 was significantly reduced ($p<0.01$), while the frequency of codes 4 and 5 increased by 31% and 58%, respectively (Code 4: pre 15.4% vs post 21.5% and Code 5: pre 22% vs post 53%) (all $p <0.05$). Moving towards the second last question (Q9): how many times you revised your notes in a month; we have noted highest frequency 45.4% of students agreed to do it defiantly (code C4), whereas 32% and 13% chose codes 3 and 5, respectively. Following post analysis, the frequency of code 3 was increase ($p<0.01$), while the frequency of codes 4 reduced by 50% (Code 3: pre 32% vs post 44% and Code 4: pre 45% vs post 21%) (all $p <0.05$). Completing the questionnaire, the last question (Q10) was – do you believe on this "there must be the chances for the improvement and implementation of managing the time to achieve the goal. Out of all students, 80% chose code 4 (16.9%) and code 5 (63.8%), and this frequency was climbed slightly to 88% after post analysis using combination answer of codes 4 and 5 ($p>0.05$) (Table 1 and 2). The heat map (or heatmap) is a data visualization tool that depicts the magnitude of a phenomenon in two dimensions as color. The color change may be via hue or intensity, providing the reader with obvious visual cues regarding how the occurrence is clustered or varies over space. In this study, we construct a heat charts, demonstrating two different timeline of work that is pre and post types of questioners by five different levels (C1: never, C2: infrequent, C3: sometime, C4: frequent and C5: defiantly). This chart is a table in which its cells show the frequency of a particular code. When the frequency is high, the color turns into their higher scale value (Figure 1). According to the heat plot, the majority of students chose codes 1, 2, and 3 in the earlier analysis. However, after further investigation, it appears to have reverted to codes 4 and 5.

TABLES

	Frequency					
	Pre C1 N (%)	**Pre C2 N (%)**	**Pre C3 N (%)**	**Pre C4 N (%)**	**Pre C5 N (%)**	**Total**
Q1	16 (12.3)	10 (7.7)	50 (38.5)	34 (26.2)	20 (15.4)	**130**
Q2	9 (6.9)	15 (11.5)	56 (43.1)	35 (26.9)	15 (11.5)	**130**
Q3	10 (7.7)	15 (11.5)	55 (42.3)	20 (15.4)	30 (23.1)	**130**
Q4	4 (3.1)	19 (14.6)	32 (24.6)	42 (32.3)	33 (25.4)	**130**
Q5	8 (6.2)	21 (16.2)	60 (46.2)	33 (25.4)	8 (6.2)	**130**
Q6	5 (3.8)	15 (11.5)	45 (34.6)	15 (11.5)	50 (38.5)	**130**
Q7	20 (15.4)	16 (12.3)	28 (21.5)	35 (26.9)	31 (23.8)	**130**
Q8	10 (7.7)	17 (13.1)	54 (41.5)	20 (15.4)	29 (22.3)	**130**
Q9	2 (1.5)	9 (6.9)	42 (32.3)	59 (45.4)	18 (13.8)	**130**
Q10	4 (3.1)	5 (3.8)	16 (12.3)	22 (16.9)	83 (63.8)	**130**
	Post C1 N (%)	**Post C2 N (%)**	**Post C3 N (%)**	**Post C4 N (%)**	**Post C5 N (%)**	**Total**
Q1	14 (10.8)	9 (6.9)	22 (16.9)	43 (33.1)	42 (32.3)	**130**
Q2	7 (5.4)	6 (4.6)	45 (34.6)	51 (39.2)	21 (16.2)	**130**
Q3	6 (4.6)	9 (6.9)	25 (19.2)	33 (25.4)	57 (43.8)	**130**
Q4	8 (6.2)	8 (6.2)	32 (24.6)	40 (30.8)	42 (32.3)	**130**
Q5	11 (8.5)	21 (16.2)	62 (47.7)	25 (19.2)	11 (8.5)	**130**
Q6	13 (10)	8 (6.2)	20 (15.4)	20 (15.4)	69 (53.1)	**130**
Q7	23 (17.7)	15 (11.5)	33 (25.4)	34 (26.2)	25 (19.2)	**130**
Q8	2 (1.5)	7 (5.4)	28 (21.5)	29 (22.3)	64 (49.2)	**130**
Q9	3 (2.3)	13 (10)	58 (44.6)	28 (21.5)	28 (21.5)	**130**
Q10	2 (1.5)	2 (1.5)	11 (8.5)	23 (17.7)	92 (70.8)	**130**

Table 1: Distribution of frequency and % of study subjects

	Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q6**	**Q7**	**Q8**	**Q9**	**Q10**
NPr test	6329.0	6765.0	6926.5	7612.0	8108.5	7127	7921	5119	7627	7726.54
Wilcoxon W	14714.0	15150.0	15441.5	15997.0	16623.5	15512.0	16436.0	13504	16142	16243
Z	-3.52	-2.83	-2.66	-1.33	-0.49	-2.22	-0.79	-5.66	-1.33	-1.34
Asymp. Sig. (2-tailed) *P* value	0.01*	0.005*	0.008*	0.183	0.625	0.027*	0.430	0.00001*	0.048	0.150

Table: 2 Statistical comparison of study questionnaire
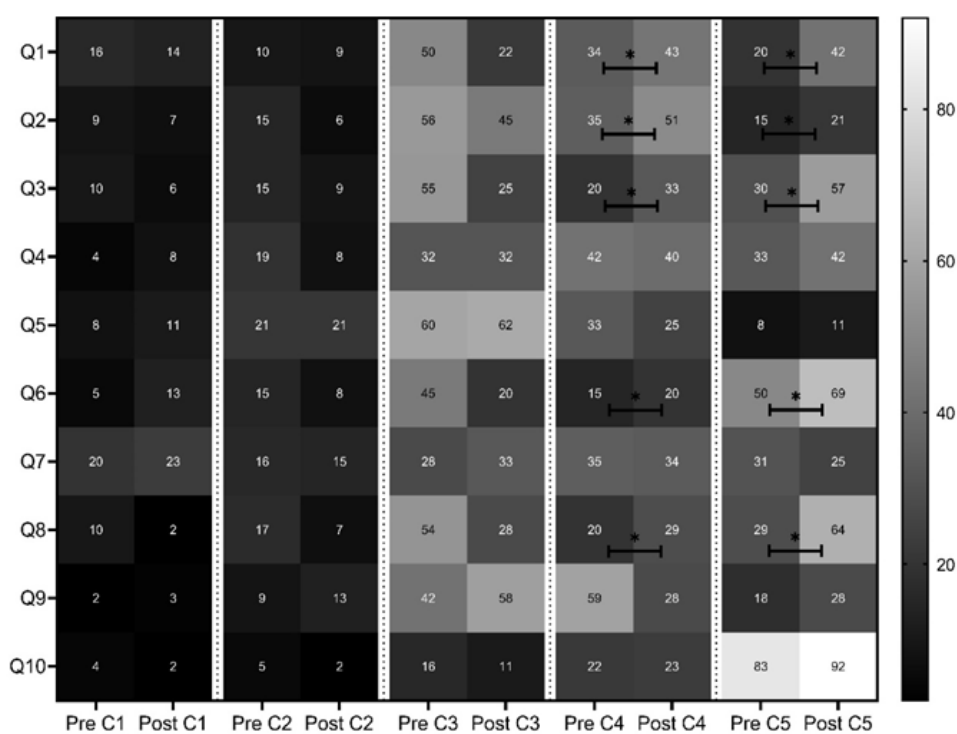
Figure 1: Heat map analysis of pre and post frequency data from 10 examined questions.

DISCUSSION

For better academic performance "Time management" is an important skill that every student must acquire but unfortunately TMS is one of the prime problems facing current medical students. Bashir, S et al[10] well explained that the the criterion for efficient time management lies not only in achieving set goals, but also in attaining them in the minimum time possible. Now the ultimate problem is how to achieve our target within deadlines. The sessions on TMSs provided an opportunity to the students for introducing and enhancing their time management more effectively. TMS development at an early stage in medical students will evolve as a habit of good time administrative skills.Gruppen, L.D et al[11] along with many earlier studies also support this fact. Generally female students accomplish well time management than male students. This has been attributed to better listening, planning, and organization. However, no significant difference in time management skills between male and female students was found in our study. Dalli M etal[12] and Khanam et al[13] and also could not establish statistically significant relationship between gender and time management skills. Findings from the current study suggest that more than half (54%) of the medical students have inadequate time management skills. We also found that there is no significant difference of time management skills in the participants on the basis of their gender, their study in private or government medical colleges, their residence in hostels or homes, their rural or urban background, and the educational qualification of their parents. We also observed significant positive correlation between total time management scores and total percentage of the marks of last exam, and perceived academic satisfaction among the participants.Covey SR et al[14] and Khatib AS et al[15] mentioned that some of the students have planned their day before the start of the day, but in our study, we observed there were very few students irrespective of their gender has planned their day in respect of both studies and other aspects, but most of them don't plan their day if they plan they were not able to follow it, but after the discussion on this point with examples majority students showed their positive response towards it. As we move on second and third question that students use to make the list of goals at the beginning of the week and they prioritize their goal on the basis of urgency? We know that goal setting and prioritization are two pillars of Life, we must understand the meaning and implement it in our daily life by ourself. Bashir R et al[16] said in his study that students are totally unaware about the impact of goal setting and prioritization in their life, so after sensitization in our study students showed their significant response towards it. Even we must develop the quality of multitasking and goal setting in students from very beginning because these are the core qualities to achieve the aim. Moving to next question that "Do students have the list of their distractions,

Yes actually some of them accepted this point but few even don't know their distractions?" We sensitized them number and list of distractions, we have discussed with them tried to realize that Gazettes and social networking are their prime distraction. As Deshpande J et al[17] and Demirci K et al[18] explained that not only students even all human being has been trapped in gazette era. As we move towards the next question that how frequent they revise their planned schedule in week or How frequent they rescheduled the time table? During the interactions they were not able to follow it from the beginning so no question to re scheduling, but after sensitizing them they showed their positive response in post-test. Entering in second part of discussion as we reach question number 6 that Students are actually thinking that goal setting and multitasking are the tools to achieve their aim within limited time frame? So, initially they were not able to elaborate the how to make goal setting and how to be multitasker for achieving the aim within limited time frame? After deep discussion on this very important point, they convinced and decided to list down their task. Moving towards the second half of the questions, that students have calendar on their study table or they are keeping record of the dates on a single calendar and check it regularly? So, we discussed this point majority of students are using calendar on their phone, so again the big problem because important dates and list of incomplete tasks should always in front of your eyes to make you remember that you have to complete it same problem pointed out by Dermirci K et al[18] but in phone most of the times we skipped all, busy in different apps all the time So, after brief discussion on this point students were convinced. As moving to second and third last questions that Do they set last dates or deadlines to complete their goals and do they revise their notes one in a month? Alay S et al,[19] and Nadinloyi KB et al[20] also explained the efficacy of time and impact self-efficacy on academic performances but majority of the students neither set the deadlines nor revise their notes regularly, weekly or once in month. They were saying that when pressure will come in form of exam or test only then they'll start to study. Actually, they were aware of deadline meaning, after discussing and briefing they convinced. At last question of questionnaire, they believe there is room of improvement in the way you manage your time? Previously they were like didn't understand the meaning of the question that do they believe there is chance to modulate to refining of your schedule? Some of them showed yes, can be different ways to improve time management so in post-test significant number of students were convinced these findings were similar to the study conducted by and Sevari k et al.[21]Limitations of the study: Due to resource constraints, the study focused only on the short-term effect of MAPM on time management. To understand the long-term effects of this method, extended forms of similar study can be conducted in the future.

CONCLUSION

There is a need to train the MBBS students on management skills like time management for better academic performance apart from course curriculum. This can be skilled by organizing time management workshops for students in their foundation course. The teaching learning process should shift from passive teacher-centric to active student-centric mode with primary responsibility lying on students. This will assist them to the better management of time, effective learning and well academic performance.

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