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Mastering Time Management, Minimising anxiety: A Cross section Study of First Year Medical Students at Suez Canal University.

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Abstract

Background:

The mental health of medical students is an area of increasing concern worldwide. Time management is an important prerequisite for effective and efficient learning in higher education. Thus, this study aimed to assess the relationship between time management and anxiety at the Faculty of Medicine Suez Canal University through an analytic cross-sectional study.

Subjects and methods:

The Assessment of time management skills (ATMS) was used to measure students' ability to manage their time according to 3 subscales (Time control, Emotional regulation in time management, and Time planning and organizing). Furthermore, The State-Trait Anxiety Inventory (STAI) Survey Instrument was used to collect data from the students' data to assess their anxiety levels.

Results:

The overall assessment of time management (ATMS) ranged from 30 to 112. Forty-two students (31%) demonstrated low time management skills, while 60 students (44%) showed moderate time management skills, and 34 students (25%) showed high levels of time management skills. The overall STAI of both forms ranged from 27 to 67; with 40 students (29%) demonstrating mild anxiety, 46 students (34%) showing moderate anxiety manifestations, and 50 students (37%) demonstrating severe levels of anxiety. A statistically significant negative correlation was found between time management skills and levels of anxiety ($r = -0.864$, $P = 0.001$).

Conclusion:

Time management is a critical tool for reducing stress and anxiety in medical students who deal with a unique, highly-paced work environment with various job demands. Regular evaluations of time management skills and anxiety screening from students can help detect students who need help before they deteriorate in their academic progress.

Keywords:

Time Management, Medical Students, Anxiety, STAI, ATMS.

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Introduction:

Around the world, medical students' mental health is a significant aspect of public health. University students often face significant academic and personal demands, which leads to a high level of psychological stress. The stress can cause significant disorders and mental health problems, including anxiety and depression (1).

Furthermore, emotional labor is a term coined by sociologist Arlie Russell Hochschild. It essentially refers to the effort individuals put into managing their emotions to meet their role's social or organizational expectations. The job that medical students do is among the highly emotional kinds of labor, which impacts their physical and mental well-being. Additionally, first-year medical students experience more academic stress than older students, who were shown to handle stress better than first-year students (2).

Medical students in their initial years underestimate the time required to study successfully and report problems in regulating study time and class attendance alongside non-university obligations. They spend considerable time on activities that are not conducive to their academic performance or distract them from learning activities, such as social networking or watching TV (3).

University students appear especially prone to procrastination and report related self-handicapping behaviors even during class attendance. Accordingly, time management is considered an integral component of self-regulated learning and is correlated with higher academic performance. Unfortunately, first-year students' time management skills often tend to be deficient, indicating a need for appropriate interventions (1).

In addition, time management skills are potent predictors of first-semester academic performance in medical school and other higher education disciplines since practical time management skills are essential, and students who do not plan their time effectively run out of time before running out of content (4).

Regarding the efficacy of time management treatments, recent research employing intervention programs meant to enhance students' time management abilities discovered that following intervention, students' perceptions and time management abilities considerably improves (1).

The extensive and complex medical curriculum can be daunting for first-year students. Strong time management skills are essential to navigate lectures, labs, and independent study effectively. Students can better manage their workload and reduce stress by allocating sufficient time for each academic assignment.

First-year medical students also experience a great deal of anxiety, which they attribute to a variety of factors, including pressure to perform well academically, fear of failing, and the intimidating nature of the medical field. Anxiety and psychological discomfort are elevated when going to medical school because it intensifies pre-existing pressures. Anxiety can damage cognitive abilities, impede academic achievement, and lower general quality of life if left untreated. Accordingly, the study aimed to assess the relationship between time management and anxiety among first-year medical students.

Study subjects and methods

Study design:

This analytical cross-sectional study was conducted at the Faculty of Medicine, Suez Canal University. All first-year medical students enrolled in the Faculty of Medicine in Suez Canal were included in the study. Students with a history of any psychological illness or administration of any drugs having psychological effects were excluded from the study.

Sample Size:

The required sample size was calculated based on the following equation:

$$n = \left[\frac{Z_{\alpha/2} + Z_{\beta}}{\frac{1}{2}\log\frac{1+r}{1-r}}\right]^2 + 3$$

(Dawson and Trapp, 2004)
Where:
n= sample size

$Z\alpha/2 = 1.96$ (The critical value that divides the central 95% of the Z distribution from the 5% in the tail)

$Z\beta = 0.84$ (The critical value that separates the lower 20% of the Z distribution from the upper 80%)

r = 0.3 correlation coefficient of the relation between time management and anxiety among university students (Ahmady et al., 2021).

According to the previous calculations, a total of 85 students will be required for this study.

Sampling technique:

Convenience sampling was conducted where first-year medical students who were eligible based on the study's inclusion and exclusion criteria were invited to participate in this study, All First-year medical students were invited to participate into our study (283 student) but only 150 students responded and 14 of them didn't finish the questionnaires so they were dropped from the study and it ended up with 136 students. (N.B: The total number of first year medical students was 283 students then).

Data Collection Tools

The time management assessment questionnaire:

A self-administered questionnaire consisting of 30 items, with a 4-point response scale, with a range of possible scores from 30 to 120 is used for data collection. The scale was developed and validated by White et al. (5) and it assesses three aspects of time management: awareness that you can manage time, active behaviors and specific skills used to manage time, and self-assessment of time management skills.

Higher scores indicate better performance of time management skills and practices; eight items are reverse scored. The Flesch Reading Grade Level was estimated to be at the 4.8 grade level.

State-Trait Anxiety Inventory for Adults:

STAI Form Y-1 and Form Y-2 Were developed and validated by Spielberger et al. (6) to measure anxiety from the perspective of states vs. traits. Form Y-1 assesses how the individual feels "right now" or at this moment. Form Y-2 addresses how the individuals generally feel by rating themselves on a four-point scale: almost never, sometimes, often, or almost always.

Each form has 20 items; all items are rated on a 4-point scale (e.g., from "Almost Never" to "Almost Always"). The range of possible scores for each form of the STAI varies from a minimum score of 20 to a maximum score of 80. STAI scores are commonly classified as "no or low anxiety" (20- 37), "moderate anxiety" (38-44), and "high anxiety" (45-80).

Test-retest coefficients for this study measures in the present study ranged from .69 to .89. Considerable evidence attests to the construct and concurrent validity of the scale.

Data collection process:

After the beginning of the academic year, the permission to conduct the research project was obtained from the Research and Ethics Committee (REF No: 5007#) at the FOM-SCU on 27/7/2022. A statistical sample was determined, and the researchers attended the school of FOMSCU. The students were informed about the objectives of the study and were asked to complete two questionnaires. The students who were willing to participate in the research were included in the study. The questionnaires were distributed on paper format and collected after completion.

Statistical analysis:

Statistical analysis was performed using the SPSS program (Version 24.0). Quantitative data were expressed as mean and standard deviation while descriptive or qualitative data will be expressed as numbers and percentages. Comparisons were performed using Student's t-test (for quantitative data) and Chi2 test (for quantitative categotical data). Correlation was done by Pearson's correlation. Statistical significance was accepted when the p-value is < 0.05.

Ethical consideration:

The following ethical considerations were respected during the course of the study:

Participants of the study were informed about the aims of the study and were kept updated with any changes in the research and all of them were assured of the confidentiality of their demographic information and responses. Written informed consent to participation in the study was obtained from all participants. They were also given enough time to complete the questionnaires, also they have the right to withdraw from the study at any time. The findings and the practical significance of the study were communicated in clear, straightforward, and appropriate language to relevant research populations, institutional representatives, and other stakeholders.

Ethical approval:

Approval of the administration of the faculty, represented in its Dean and Vice Dean of The Students Affairs was taken, Ethical approval was obtained from the Research and Ethics Committee (REF No: 5007#) at the FOM-SCU on 27/7/2022.

Results

Figure (1) shows that a total of 136 first-year medical students who met the inclusion criteria were enrolled in our study; 54 (39.7%) students were males, whereas 82 (60.3%) students were females, with a male-to-female ratio of 1:1.5.

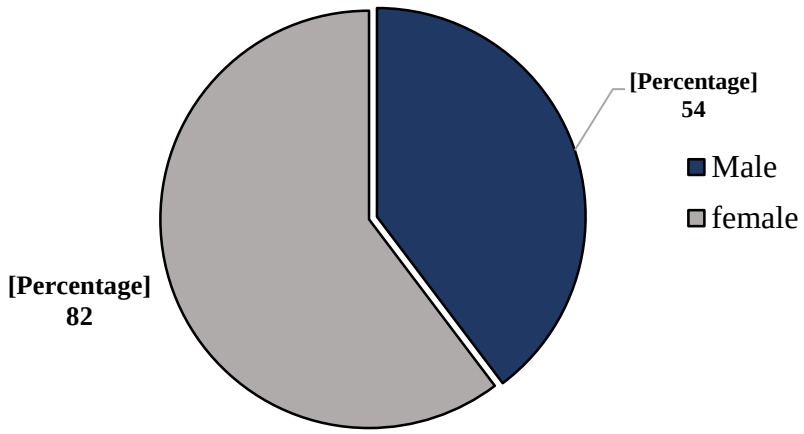

Fig. 1: Gender distribution among study samples.

Table 1 shows that for the time control subscale, 29% of first-year medical students cannot control their time at all, 25% of them can control their time slightly while 25% of the students are capable of controlling their time most of the time.

Table 1: Assessment of Time control subscale of Time Management Skills Questionnaire (ATMS) Answers (N = 136 students).

Items	None of the time		Some of the time		Most of the time		All of the time	
	No.	%	No.	%	No.	%	No.	%
I feel I manage my time well	44	32	32	24	29	21	31	23
I find that, even though I want to be on time, I am often late	32	24	38	28	21	15	45	33
I feel that I don't manage any time well	37	27	27	20	36	27	36	27
I rush while completing my work	49	36	28	21	30	22	29	21
I run out of time before I finish important things	35	26	39	29	35	26	27	20
I can correctly estimate the time I need to complete my tasks	42	31	37	27	23	17	34	25
Time Control Subscale	39	29	34	25	28	21	34	25

Table 2 shows that for the time planning and organizing subscale, first-year medical students are divided into almost two halves, with 29% of student's responses being "none of the time," 23% being "some of the time," 21% were "most of the time," and 27% were "all the time." One half is perfectly capable of planning and organizing their time, and the other doesn't have that skill.

Table 2: Assessment of Time planning and organizing skills subscale of Time management skills Questionnaire (ATMS) Answers (N = 136 students).

Items	None of the time		Some of the time		Most of the time		All of the time	
	No.	%	No.	%	No.	%	No.	%
Time Planning								
I plan my daily activities	34	25	38	28	27	20	37	27
I stop and plan out the steps before I start something new	39	29	32	24	24	18	41	30
I make sure I have a good night's sleep	38	28	31	23	33	24	34	25
Items	None of the time		Some of the time		Most of the time		All of the time	
	No.	%	No.	%	No.	%	No.	%
Time Planning								
I plan my daily activities	34	25	38	28	27	20	37	27
I stop and plan out the steps before I start something new	39	29	32	24	24	18	41	30
I make sure I have a good night's sleep	38	28	31	23	33	24	34	25
Time Organizing								
I am not organized in my tasks	40	29	33	24	29	21	34	25
I use a calendar or an appointment book as a way of remembering my daily tasks	40	29	33	24	17	13	46	34
I carry an appointment book	37	27	36	27	24	18	39	29
I clear my workspace before beginning a task	44	32	29	21	34	25	29	21
I make to do list	32	24	36	27	33	24	35	26
I carry a pen or pencil daily	38	28	26	19	42	31	30	22
I wear a watch or carry a cell phone	47	35	25	18	26	19	38	28
I put my things back where they belong or where I got them from	43	32	27	20	36	27	30	22
I look at the calendar or appointment book during the day to keep track of my daily schedule	45	33	28	21	24	18	39	29
Organization and Planning Subscale	39	29	31	23	28	21	37	27

Table 3 shows that regarding time emotions skills among first-year medical students, about 29% of first-year medical students don't show affection for their emotions. On the other hand, about 25% of the students can easily be affected by their feelings.

Table 3: Assessment of Time emotions skills subscale of Time management skills Questionnaire (ATMS) Answers (N = 136 students).

Items	None of the time		Some of the time		Most of the time		All of the time	
	No.	%	No.	%	No.	%	No.	%
Time Emotions								
I do my most difficult work at the time of day when I have the most energy	43	32	29	21	27	20	37	27
I find that I am overwhelmed by my daily routine	45	33	32	24	27	20	32	24
Even I do not like to do something I still complete it on time	43	32	28	21	28	21	37	27
I complete the tasks in my schedule on appointment book on my satisfaction	35	26	35	26	27	20	39	29
I put off things I don't like to do until the very last minute	31	23	37	27	28	21	40	29
I wait until I feel better before taking an important task	37	27	33	24	29	21	37	27
I feel competent about managing my time when I write down my appointments	35	26	34	25	33	24	34	25
My mood affects my ability to manage my time	40	29	30	22	34	25	32	24
I feel confident that I can complete my daily routine	39	29	37	27	26	19	34	25
I put in more efforts to follow my schedule when I see others keeping up with their schedule	45	33	28	21	31	23	32	24
I reward myself for doing a good job	43	32	32	24	27	20	34	25
I learn from my mistakes	35	26	38	28	31	23	32	24
Regulation of Emotions Subscale	39	29	32	24	30	22	34	25

The overall AMTS was ranging from 30 to 112. As shown in Figure 2, 42 (31%) students demonstrated low time management skills, 60 (44%) students showed moderate time management skills, and 34 (25%) showed high levels of time management skills.

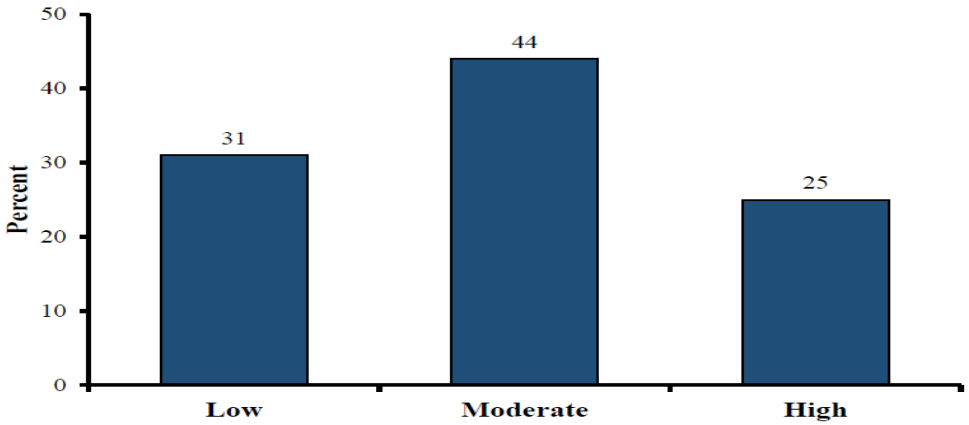

Fig. 2: Overall Assessment of Time Management Skills Questionnaire (ATMS) Answers.

Table 4 shows that for the "Positive State" subscale, 31% of students' responses were "almost never," while 9% were "almost always," which indicates that the majority of first-year medical students showed a high anxiety level at the time of the questionnaire.

Table 4: Assessment of positive traits subscale of State-Trait Anxiety Inventory Results Form Y-1 questionnaire answers (N = 136 students).

Variables	Almost Never		Sometimes		Often		Almost Always	
	No.	%	No.	%	No.	%	No.	%
I feel calm	41	30	61	45	20	15	14	10
I feel secure	38	28	51	38	36	27	11	8
I feel at ease	40	29	59	43	27	20	10	7
I feel satisfied	34	25	63	46	27	20	12	9
I feel comfortable	43	32	53	39	27	20	13	10
I feel self-confident	50	37	42	31	32	24	12	9
I am relaxed	45	33	47	35	35	26	9	7
I feel steady	37	27	50	37	36	27	13	10
I feel pleasant	55	40	35	26	31	23	15	11
I am content	45	33	51	38	27	20	13	10
Positive Trait	42	31	52	38	30	22	12	9

For the "Negative Trait" subscale, Table (5) shows that the majority of students' Responses were between almost always and often(30% and 39% respectively), which showed a high level of anxiety at the moment.

Table 5: Assessment of Negative Traits subscale of State-Trait Anxiety Inventory Results Form Y-1 questionnaire answers (N = 136 students).

Variables	Almost Never		Sometimes		Often		Almost Always	
	No.	%	No.	%	No.	%	No.	%
I feel tense	13	10	30	22	61	45	32	24
I feel strained	7	5	35	26	65	48	29	21
I feel upset	14	10	31	23	54	40	37	27
I am presently worrying over possible misfortunes	14	10	30	22	54	40	38	28
I feel frightened	17	13	29	21	48	35	42	31
I feel nervous	15	11	30	22	57	42	34	25
I am jittery	6	4	26	19	54	40	50	37
I feel indecisive	12	9	26	19	58	43	40	29
I am worried	14	10	32	24	39	29	51	38
I feel confused	14	10	29	21	41	30	52	38
Negative Trait	12	9	30	22	53	39	41	30

Table 6 shows that for the "Positive State" subscale, the majority of first-year medical students' choices lie between almost never and sometimes (32% and 38% respectively) , which indicates a high anxiety level in general while only 8% of the students chose almost always.

Table 6: Assessment of positive traits subscale of State-Trait Anxiety Inventory Results Form Y – 2 questionnaire answers (N = 136 students).

Variables	Almost Never		Sometimes		Often		Almost Always	
	No.	%	No.	%	No.	%	No.	%
I feel pleasant	36	27	51	38	34	25	15	11
I feel satisfied with myself	48	35	45	33	29	21	14	10
I feel rested	39	29	52	39	41	30	3	2
I am calm, cool, and collected	47	35	51	38	31	23	7	5
I make decisions easily	47	35	46	34	34	25	9	7
I am happy	44	32	51	38	29	21	12	9
I feel secure	43	32	52	38	34	25	7	5
I am content	45	33	58	43	23	17	10	7
I am a steady person	35	26	47	35	27	20	27	20
Positive Trait	43	32	52	38	30	22	11	8

For the "Negative State" subscale, Table (7) shows that the majority of students' Responses about 37% were almost always, which shows a high level of anxiety in general while only 9% of the students' responses were almost never.

Table 7: Assessment of negative traits subscale of State Trait Anxiety Inventory Results Form Y-2 questionnaire answers (N = 136 students).

Variables	Almost Never		Sometimes		Often		Almost Always	
	No.	%	No.	%	No.	%	No.	%
I feel nervous and restless	10	7	35	26	55	40	36	27
I feel like a failure	10	7	25	18	51	38	50	37
I feel that difficulties are piling up so that I cannot overcome them	12	9	36	27	46	34	42	31
I worry too much over something that really doesn't matter	9	7	34	25	42	31	51	38
I have disturbing thoughts	12	9	30	22	49	36	45	33
I lack self confidence	5	4	26	19	59	43	46	34
I feel inadequate	5	4	33	24	51	38	47	35
Some unimportant thoughts run through my mind and bothers me	15	11	30	22	53	39	38	28
I take disappointments so keenly that I can't put them out of my mind	14	10	37	27	50	37	35	26
I wish I could be as happy as others seem to be	15	11	31	23	48	35	42	31
I get in a state of tension or turmoil as I think over my recent concerns and interests	22	16	26	19	51	38	37	27
Negative Trait	12	9	31	23	51	37	42	31

The overall STAI form Y-1 ranged from 25 to 70. The overall STAI from Y-2 ranged from 25 to 64. The overall STAI of both forms was ranging from 27 to 67.

As shown in Figure 3, 40 (29%) students demonstrated mild anxiety, 46 (34%) students showed moderate anxiety, and 50 (37%) showed severe levels of anxiety.

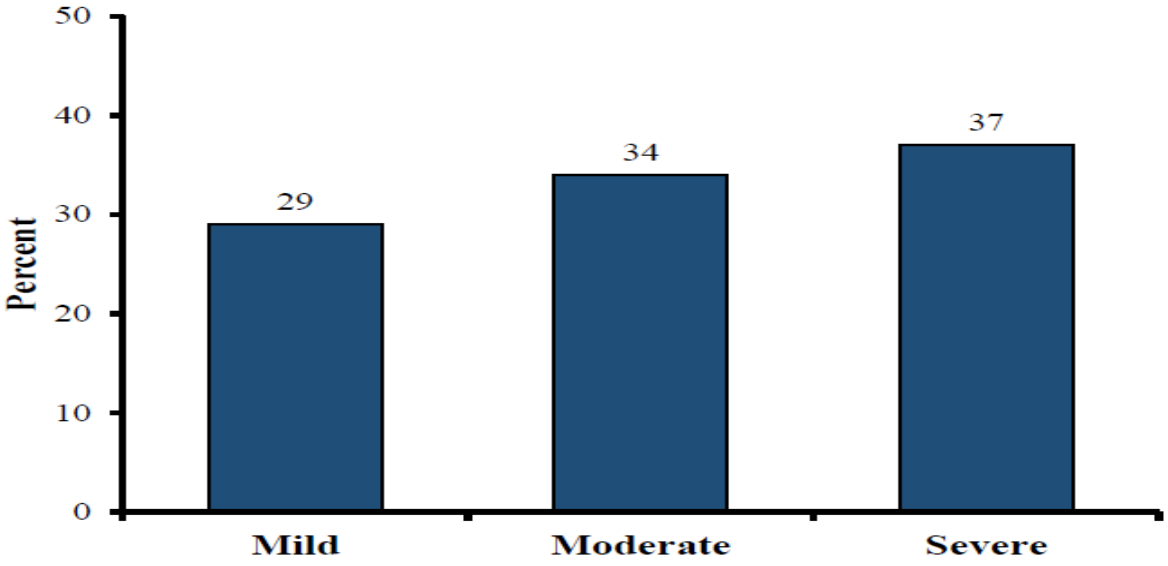

Fig. 3: The overall State-Trait Anxiety Inventory (STAI) Questionnaire Answers

Figure (4) shows a statistically significant negative correlation was found between time management skills and levels of anxiety (r = -0.864, P = 0.001).

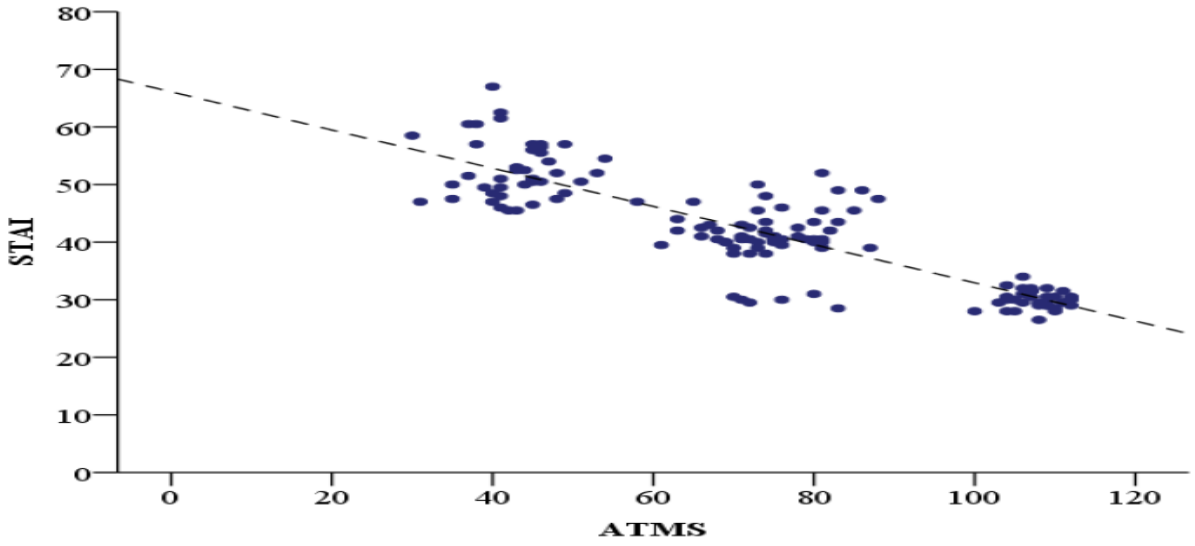

Figure 4: Correlation Between means of AMTS and STAI.

Discussion:

A cross-sectional analytical study involved first-year medical students from the 2022-2023 academic year at the Faculty of Medicine, Suez Canal University. This study aimed to evaluate time management skills, determine the prevalence of anxiety, and explore the relationship between time management and anxiety among these students.

The current study found that most first-year medical students had moderate time management skills (Figure 2). They were not at positive or negative extreme positions regarding time management skills. This could be due to increased time demands, including busy schedules, which pressurize the students. It could also be because Time management includes individual perceptions and different attitudes toward time. It can be stated that people's different attitudes to time are derived from their personality traits. The results of this study are consistent with the findings of another study conducted by Khananm et al. (9) on students at Zahedan University of Medical Sciences, which found that participants' time management skills were moderate. This is consistent with other studies, which found that participants' time management skills were generally moderate and asserted that students with higher time management skills might be expected to show less tendency towards academic procrastination (7, 8).

The study findings also revealed that the planning and organization subscale (Table 2) was the highest in students' time management, followed by the emotional and time control subscales. This can emphasize that first-year medical students are efficient at planning and organizing their time by instant. Still, they become affected by their positive and negative emotions (table 3), eventually leading to losing control over time (table1). More programs are required to teach time management and control emotions, not to affect time management skills.

Anxiety is considered a factor that disturbs mental regulation and stability, and it prevents coping with sensitive conditions and reasonable reactions. Uncontrollable anxiety in one medical student can lead to academic failure and dropout; furthermore, negative consequences can create problems for their family, classmates, and clients. In addition, doctors should be able to control their feelings to increase their accuracy and speed in a practice that, due to sudden work stresses or critical conditions, would otherwise prevent them from making crucial decisions more precisely.

It was found that in our current study, the State-Trait Anxiety Inventory (STAI) results Y-1, which assess the level of anxiety at the moment, showed that the score for the negative state subscale was higher than the score for the positive trait. The STAI results Y-2, which assess the level of anxiety in general, showed that the average score for the negative state subscale was also lower than the positive state subscale. According to these results, the medical students generally possessed a moderate-level anxiety score (either state or trait anxiety). These results (Table 4, 5, 6, 7) could be because medicine is one of the most sensitive, stressful, and challenging jobs requiring a stable, calm mind. Also, increased time demands, including busy schedules, midterm/final exams, skill labs, research papers, assignments, and practical training, always make the students feel pressured near deadlines and increase their stress levels.

In addition, society has a prototype for medical students and doctors who are always committed and excel academically and socially. Accordingly, they always feel pressured with increased levels of anxiety to meet these expectations, which might explain the results of STAI form Y-1. This result was consistent with studies that suggested mid-level anxiety scores among students (10,11).

This study also reports a strong negative correlation between time management and state-trait anxiety among medical students. This indicates that better time management skills are associated with lower anxiety levels. This relationship can be explained by the fact that when students organize their study schedules, adhere to their timetables, and manage their emotions to avoid disrupting their plans, they feel more in control of their time and can accomplish more, thereby reducing their anxiety. Accordingly, it can be stated that time management reduces tension and anxiety. Some people need more time to finish their tasks, and some need shorter periods. If students understand themselves well, they can manage their tasks better and be prepared for their homework and exams to reduce anxiety (12).

The same findings were found in research by Zhang et al. (13), which stressed that university students with strong time management abilities have less anxiety because they can organize their schedules well and finish all of their assignments on time. Additionally, research suggested that students would worry less about their social, academic, and personal lives if they received appropriate time management instruction.

Al Khatib found that stress and time management among students at the University of Science and Technology in the United Arab Emirates had a negative and significant association, consistent with our findings. Additionally, the Ocak study's results showed a somewhat unfavorable correlation between test-taking and time management (14).

According to the evidence above, time management training courses can be used in medical faculties to help students overcome anxiety. In this direction, educational authorities require planning for practical workshops and programs to teach time management and to prioritize anxious students to attend these workshops.

Our study strength is the use of a validated time management questionnaire to assess the three aspects of time management by White et al. (5) and a validated STAI questionnaire created by Spielberger et al. (6) to measure anxiety from the

perspective of states vs. traits, as well as the study's substantial sample size (n=136), is one of the study's strengths. Furthermore, this study might be significant to the student support unit since it will provide a reference point to offer meaningful advice to students suffering from anxiety and lack of time management, leading to improved academic achievement. It would also help open students' eyes to critical time management skills and how mastering them would affect their anxiety level, grades, and achievements.

Also, our study has some limitations, such as its cross-sectional and correlational nature, which makes it impossible to determine the causal relationship between the variables. Also, convenience sampling can lead to selection bias, limiting the ability to generalize the findings to the entire first-year population. A self-report questionnaire was the only measurement method used to collect data, so reporting bias can be conceivable. If it were not possible to verify the participants' answers, it may have affected the accuracy of the results.

Conclusion:

Time management is a critical tool for reducing stress and anxiety in medical students who deal with a unique, high-paced work environment with various job demands. Regular evaluations of time management skills and anxiety screening from students can help detect students who need help before they deteriorate in their academic progress.

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