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SLEEP QUALITY AMONG THE UNDERGRADUATE MEDICAL STUDENTS IN KANYAKUMARI DISTRICT, TAMILNADU- A CROSS-SECTIONAL STUDY.

Dr. Parvana s vinod[1*], Dr. Renju Y[2], Dr. Jayasree.C.S[3], Dr. Vishnu G Ashok[4], Dr.Vaisakh GT[5].

[1.]Post Graduate, Department of Community Medicine, Sree Mookambika Institute of medical sciences kulasekaram, Kanyakumari,Tamilnadu,India.E mail id : dr.parvana91@gmail.com*
[2]Post Graduate Department of Community Medicine, Sree Mookambika Institute of medical sciences kulasekaram, Kanyakumari,Tamilnadu,India.E mail id : renjuyohijini@gmail.com
[3]Professor, Department of Community Medicine, Sree Mookambika Institute of medical sciences kulasekaram, Kanyakumari,Tamilnadu,India.E mail id : cjayasree873@gmail.com
[4]Professor, Department of Community Medicine, Sree Mookambika Institute of medical sciences kulasekaram, Kanyakumari,Tamilnadu,India.E mail id : vishnusastha@gmail.com
[5]Senior Resident, Department of Community Medicine, Sree Mookambika Institute of medical sciences kulasekaram, Kanyakumari,Tamilnadu,India.E Mail id: Vaisakhgt1991@gmail.com

Corresponding author: : **Dr. Parvana s vinod[1*1*]**Post Graduate, Department of Community Medicine, Sree Mookambika Institute of medical sciences kulasekaram, Kanyakumari,Tamilnadu,India.E mail id : dr.parvana91@gmail.com, 9497268051

ABSTRACT:

Background: Sleep is undeniably an essential detachment from our daily routines. The emergence of smartphones and the pressure of competitive exams have significantly impacted the quality of sleep among university students, particularly those studying medicine. Inadequate sleep has profound consequences on the physical well-being of students, leading to conditions such as obesity, hypertension, and diabetes.

***Objectives*:** To Assess the sleep quality among undergraduate medical students

Methodology: A cross sectional study was conducted among 150 undergraduate medical students in Sree Mookambika institute of medical sciences, Kanyakumari using pre-tested questionnaire for a period of one month and the data entered were entered in MS Excel and analyzed using SPSS.

Results*:* Of the 150 medical students 41% are male and 59% are female. Out of 150 participants 83 (55.3%) of them cannot get sleep within 30 minutes. 77 (51.3%) of them wake up in the

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middle of sleep less than once a week. Only 36(24%) of students are getting 6-7 hours sleep which negatively impacts their academic performance.

Conclusion: Sleep Quality was found to be poor in a larger proportion of medical students in this study when compared to similar studies from other colleges.

Keywords*:* Medical students, prevalence, sleep quality.

INTRODUCTION:

It is needless to master the definition: “Sleep is a recurring, reversible Neuro - behavioural state of relative perceptual disengagement from and unresponsiveness to the environment. Sleep is typically accompanied (in humans) by postural recumbence, behavioural quiescence, and closed eyes". [1] In order to partake in this enjoyable activity. Obtaining a sufficient amount of sleep at night is crucial for maintaining optimal health. Insufficient quantity and quality of sleep have been associated with risk factors for cardiovascular disease (CVD) such as hypertension, obesity, diabetes, and dyslipidaemia.[2] A study involving young adults who experienced sleep deprivation for five consecutive days revealed an increase in the excretion of epinephrine and similar metabolites in their urine, indicating the impact of sleep deprivation on stress.[3]

Lack of sleep leads to impaired encoding in the hippocampus and memory deficits.[4] Additionally, sleep deprivation has been found to affect the recognition of emotions, particularly the identification of sad and happy faces.[5] Research has demonstrated that chronic poor sleep is linked to increased signs of intrinsic aging, lower satisfaction with appearance, compromised barrier function, and individuals who sleep well tend to have better recovery from erythema. [6]. University students, particularly those studying medicine, experience a significant decline in the quality of their sleep.[7] Despite the widely accepted belief that sleep is crucial for overall well-being, medical students worldwide struggle with poor sleep quality compared to their peers. It is generally recommended that adults get a minimum of 7 hours of sleep, although individual variations may exist [8].

However, medical students face numerous challenges that hinder their ability to achieve adequate sleep. Whether it's the overwhelming amount of study material or the

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constant distraction of smartphones, there is no shortage of reasons why medical students find it difficult to sleep. Consequently, this lack of quality sleep negatively impacts their academic performance. [9,10] Due to the paucity of evidence or literature in the current geographic region, the current study has been conducted to determine the sleep quality among undergraduate medical students

AIMS AND OBJECTIVES

- To find out sleep quality of undergraduate medical students in Sree Mookambika Institute**.**

MATERIALS AND METHODS:

This cross-sectional study was conducted over one month in December 2023 at the Sree Mookambika Institute of Medical Sciences. The study participants included all undergraduate medical students at the institute, excluding those who were not present during data collection. The sample size was calculated with a p-value of 39.5. The calculated sample size was 147, which was approximated to be 150. A convenient sampling technique is used in the study. Data were collected using a pre-tested Pittsburgh questionnaire and entered into Microsoft Office Excel 2013. Data analysis was performed using SPSS Trial Version 25.0.

RESULTS:

Gender Distribution

Of 150 medical students of which 61(41%) were male and 89(59%) were female.

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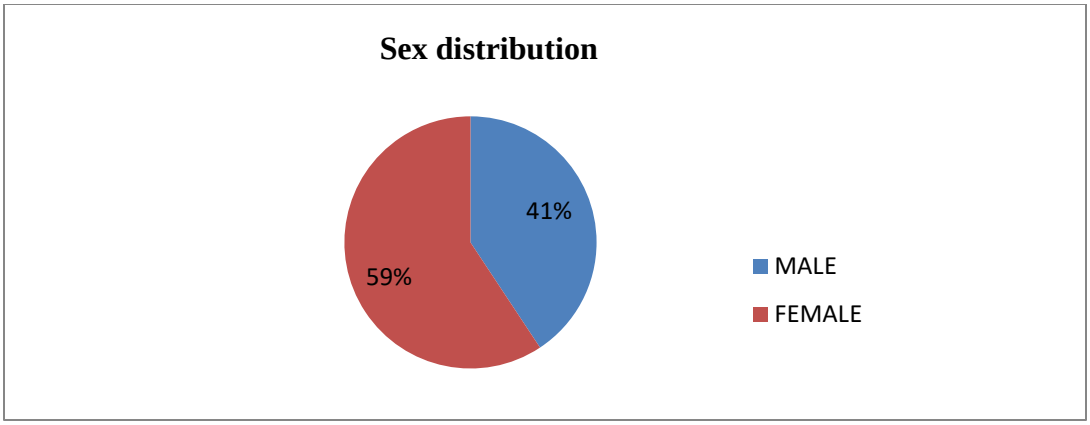

Figure : 1

DISTRIBUTION ACCORDING TO YEAR

TAB: 1

YEAR OF STUDY	FREQUENCY	PERCENTAGE
FIRST YEAR	34	22.7
SECOND YEAR	28	18.7
THIRD YEAR	54	36.0
FOURTH YEAR	34	22.7
TOTAL	239	100

Of the total 150 participants, 34 (22.7%) were first years, 28 (18.7%) were second years, 54 (36%), were 3rd years, and 34 (22.7%) were 4th years.

TAB: 2

AGE	FREQUENCY	PERCENTAGE
18	13	8.7
19	13	8.7
20	29	19.3
21	41	27.3
≥22	54	36.0

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TOTAL	150	100

The minimum age of participants was 18. The maximum age of participants was 23.
The mean age of the participants was 20.7333 with SD 1.272

SLEEP QUALITY INDEX

TAB:3

How often had you trouble to sleep because of you	Not during the past month	Less than once a week	Once or twice a week	Three or more times a week
Cannot get to sleep within 30 minutes	83(55.3%)	34(22.6%)	23(15.3%)	12(8%)
Wake up in the middle of the night or morning	38(25.3%)	77(51.3%)	25(16.6%)	13(8.6%)
Have to get up to use the bathroom	60(40.0%)	58(38.6%)	27(18%)	6(4%)
Cannot breathe comfortably	56(37.3%)	64(42.6%)	21(14%)	9(6%)
Feel too cold	67(44.6%)	49(32.6%)	29(19.3%)	8(5.3%)
Feel too hot	42(28.2%)	49(32.6%)	26(17.3%)	18(12%)
Have bad dreams	55(36.6%)	61(40.6%)	27(18%)	8(5.3%)
Have pain	55(36.6%)	63(42%)	25(16.6%)	7(4.6%)

Out of 150 participants,83 (55.3%) of them cannot get sleep within 30 minutes.77 (51.3%) of them wake up in the middle of sleep less than once a week.60 (40.0%)of them have to get up to use the bathroom not during the past month.64 (42.6%)of them cannot breath comfortably once a

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week.67(44.6%) of them fell too cold not during the past month.49(32.6%)of them felt too hot less than once a week.61(40.6%) of them have bad dreams less than once a week.63 (42%)of them have pain less than once a week.

COMPONENT 1: SLEEP QUALITY

In the first component sleep quality was assessed

TAB: 4

YEAR OF STUDY					
Quality of sleep	First year	Second year	Third year	Fourth year	TOTAL
Very good	5	0	18	12	45(30%)
Fairly good	17	12	29	16	74(49.3%)
Fairly bad	12	6	3	4	25(16.7%)
Very bad	0	0	4	2	6(4%)

COMPONENT 2: SLEEP LATENCY

TAB:5

YEAR OF STUDY					
SCORE	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FREQUENCY
0	12	14	19	11	56(37.3%)
1	13	8	23	11	55(36.6%)
2	7	4	6	9	26(17.3%)
3	2	2	6	3	13(8.8%)

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COMPONENT 3: SLEEP DURATION

TAB: 6

YEAR OF STUDY					
SCORE	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FREQUENCY
>7 hours	5	6	5	5	21(14%)
6-7 hours	10	10	8	8	36(24%)
5-6 hours	22	17	25	25	89(59.3%)
<5 hours	1	1	1	1	4(2.7%)

COMPONENT 4: HABITUAL SLEEP EFFICIENCY

TAB: 7

	YEAR OF STUDY				
Sleep efficiency	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FREQUENCY
>85%	19	18	36	24	97(64.7%)
75-84%	9	7	13	5	34(22.7%)
65-74%	5	2	2	1	10(6.6%)
<65%	1	1	3	4	9(6%)

COMPONENTS 5: SLEEP DISTURBANCES

TAB: 8

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YEAR OF STUDY					
Sleep disturbances	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FREQUENCY
Not during the past month	5	5	8	3	21(14%)
Less than once a week	22	17	41	25	105(70%)
Once or twice a week	7	6	3	5	21(14%)
Three or more times a week	0	0	2	0	2(2%)

COMPONENT 6: USE OF SLEEPING MEDICATION

TAB:9

YEAR OF STUDY					
MEDICATION USE	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FREQUENCY
Not during the past month	21	23	49	31	124(82.7%)
Less than once a week	8	3	2	0	13(8.6%)
Once or twice a week	5	2	1	2	10(6.7%)
Three or more times a week	0	0	2	1	3(2%)

COMPONENT 7 DAYTIME DYSFUNCTION

TAB-10

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	YEAR OF STUDY				
SCORE	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	FREQUENCY
Not during the past month	10	7	16	17	50(33.3%)
Less than once a week	13	12	19	10	54(36%)
Once or twice a week	9	8	15	5	37(24.7%)
Three or more times a week	2	1	4	2	9(6%)

DISCUSSION:

Study was originally developed to assess sleep quality among medical students. The findings from our study align with existing literature on sleep habits and quality among medical students. A significant proportion of our participants experienced varying levels of sleep disturbances and poor sleep quality, which echoes the findings of previous studies.

In our study the findings shows that a majority of students, especially those in their third and fourth years, reported inadequate sleep duration, with most getting only 5-6 hours of sleep per night result in both academic and psychological stress compared to a study done by Ruchi Singh et al highlighted that medical students are particularly vulnerable to poor sleep quality, which could be attributed to their demanding schedules and academic pressures. [11]

In our study Many students reported sleep disturbances less than once a week or once or twice a week, potentially linked to high mobile phone usage similar result found by Ibrahim et al mobile phone usage and poor sleep quality impact screen time and sleep hygiene.[12]

In our study 36% of students are getting 6-7 hrs sleep compared to study done by Dilek Yilmaz et al 56.5% of students getting 6-7 hours per day[13]

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In summary, our study confirms that sleep quality among medical students is suboptimal and influenced by various factors such as academic pressure, mobile phone usage, and physical activity. These findings underscore the need for targeted interventions to improve sleep hygiene and overall health among medical students. Future research should explore specific strategies to mitigate these issues and enhance the well-being of this vulnerable population.

LIMITATIONS:

- Low sample size.

CONCLUSION:

Students must be advocated about the importance of sleep and must be advised on reducing smart phone usage especially after bed time. Students must undergo stress management using methods like meditation, yoga. Professional help must be sought if there is persistent difficulty in falling asleep and daytime narcolepsy.

GENERALISABILITY:

Not Generalisable.

RECOMMENDATIONS:

- Only subjective sleep quality was studied, more efficient study would be using physiological sleep studies using EEG.

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