Original Article

Sleep Quality Among Interns in a Tertiary Care Centre in Kanyakumari District: A Cross Sectional Study

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Abstract

Background: Good quality sleep is important in order to have better cognitive performance and to avoid health problems. OBJECTIVES:_1. To assess the Sleep quality among M.B.B.S interns in a tertiary care centre.2. To find the Correlation between Body Mass Index and Sleep quality.

Methodology: A Cross sectional study was conducted among Interns of a tertiary care centre southern Tamilnadu in the month of August 2023 and the sleep quality was assessed using Sleep Quality Scale. Date were collected after getting consent and entered in MS Excel and analysed using SPSS. The Correlation between BMI and Sleep quality were analysed. RESULTS**:** Mean age of the participants was 24.03 among them 34.8% were males and 65.2% were females. Mean BMI of the participants was 22 with the minimum BMI of 17 and the maximum BMI of 35. Mean total score was 34.93 with the minimum score of 8 and the maximum score of 64. There is weak correlation between BMI and Sleep quality.

Conclusion: Optimal level of balance between training and adequate sleep is important in residency programs. Our study indicates that there is no relationship between BMI and sleep quality among M.B.B.S interns in Kanyakumari district.

Key Words: Age, BMI, Sleep quality.

Introduction

Getting enough good-quality sleep is essential for both maintaining good health and improving cognitive function. Its quality is closely linked to various measures of well-being, including physical and psychological[1]. Lack of sleep and the signs of

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sleep disorders have long been disregarded and poorly understood considering the high incidence of sleep disorders in the general population and the possible effects of these disorders on quality of life, morbidity, and mortality[2, 3].

Individual pattern of wakefulness and sleep are known to differ depending on a number of factors, including age, occupation, working environment, physiological and psychosocial traits, psychiatric disorders, and other physical illnesses[4]. Problems relating to sleep and insomnia have received more attention in the past few years. It is gaining more attention primarily because it is acknowledged that weariness and sleepiness are becoming endemic in the populace[5]. In terms of sleep, young doctors get less sleep in their early years because they study late at night for medical college exams, which is followed by long shifts and night work at the hospital[6].

It is commonly acknowledged that lack of sleep may play a role in adolescent obesity.The dietary and lifestyle choices of residents in medical hospitals have an impact on sleep quality. For the majority of interns in residency and throughout their careers, long work hours, night shifts, modified schedules, and on-call periods are standard practices. About how sleepiness affects a doctor's performance, there is ongoing discussion in the medical literature, in residency training programs, in medical schools, and in clinical practice[7, 8].

Being a complex disorder, obesity is caused by both genetic relationships and risk factors that may be changed. In the early stages of childhood and adolescence, lifestyle modification and human behaviour are major risk factors for the development of obesity. Teenagers are particularly prone to forming behaviours that encourage weight gain. Thus, in addition to maintaining a healthy diet and adequate physical activity, recent research shows that there is a link between inadequate sleep and increased risk of obesity, particularly in children and adolescents[9].

There is inadequate evidence in the emerging field of relationship between Body mass index and sleep quality[10]. Over the last ten years, a number of studies have examined the detrimental effects of sleep deprivation on medical professionals across a range of surgical and medical specialties.

Hence, this study intends to explore the assessment of sleep quality and its relationship with BMI among medical interns of Sree Mookambika Institute of Medical Sciences (Dr. MGR University), Kanyakumari district, Tamil Nadu, India.

RESEARCH QUESTION:

- What is the sleep quality among Medical interns of Kanyakumari district.

HYPOTHESIS:

- Null hypothesis,

  H_0: There is no relation between Sleep quality score and BMI.

- Alternative hypothesis,

  H_1: There is relation between Sleep quality score and BMI

DESIGN: Cross Sectional Study

AIM AND OBJECTIVES:

1. To assess the Sleep quality among M.B.B.S interns in a tertiary care centre.
2. To find the Correlation between Body Mass Index and Sleep quality.

Materials and Methods

STUDY DESIGN: A Cross sectional study.

STUDY SETTING: Sree Mookambika Institute of Medical Sciences.

APPROXIMATE TOTAL DURATION OF STUDY: (August-2023 to September-2023) 2 months

NUMBER OF GROUPS TO BE STUDIED: One

DETAILED DESCRIPTION OF THE GROUPS: One group of 112 interns of Sree Mookambika Institute Of Medical Sciences, Kanyakumari District, Tamil Nadu.

TOTAL SAMPLE SIZE OF THE STUDY: 112

SCIENTIFIC BASIS OF THE SAMPLE SIZE USED IN THE STUDY: Based on the research article published by Ashita Maria Paul et al[11].

SAMPLING TECHNIQUE USED IN THE STUDY : Convenient sampling.

STUDY SETTING: Sree Mookambika Institute of Medical Sciences, Kulasekharam, Kanyakumari district, Tamil nadu.

SAMPLE SIZE CALCULATION:

$$n = \frac{(Z_{1-\alpha/2})^2 pq}{d^2}$$

p= Proportion of poor sleep quality among interns

=77.4%

q=1-p

=22.6%

d=10 % of p

=10/100 x 77.4

=7.74%

$Z_{1-\alpha/2}$ =1.96, for α=5 %

Applying in the formula

$$\frac{1.96^2 \times 77.4 \times 22.6}{7.74^2}$$

n=112

INCLUSION CRITERIA:

- M.B.B.S interns posted in various departments of Sree Mookambika Institute of Medical Sciences during the study period.
- Willing to participate in the study.

EXCLUSION CRITERIA:

- Interns who were on treatment for any psychiatric illness.

PROCEDURE IN DETAIL:

After getting informed consent from the participants and ensuring privacy, details were assessed using a pre-structured questionnaire (Sleep quality scale).

STATISTICAL METHOD OF ANALYSIS: Significance level was prefixed and other appropriate statistical test were used.

DATA COLLECTION:

- The data was collected using a Self administered Questionnaire (Sleep Quality Scale) which is added in the appendix 1 and the data was in the custody of the investigator.
- The data collected was anonymized and there were no personal identifiers and only a unique id no was there.
- The data was confidential and stored in the investigators PC, it is not shared to anyone and it is deleted.

SOFTWARE USED FOR DATA ENTRY: Study parameters were entered in Microsoft Office Excel 2010.

SOFTWARE USED FOR STATISTICAL ANALYSIS: SPSS version 20.0

Results and Discussion

Table 1. Gender wise Distribution of participants

Gender	Frequency	Percentage %
Male	39	34.8
Female	73	65.2
Total	112	100

- Of the 112 participants 39 (34.8%) were Male and 73 (65.2%) were Female.
- Mean age of the participants was 24.03 and the Std. Deviation was 1.881 with the minimum age of 22 and the maximum age of 30.

Frequency calculated for total score

- The mean was 34.93, the median was 34 and the mode was 31 with the Std. Deviation of 10.446 with the Minimum score of 8 and the Maximum score of 64.
- Mean BMI of the participants was 22 and the Std. Deviation was 3.266 with the minimum BMI of 17 and the maximum BMI of 35

Table 2. Correlation between BMI and Total score

		BMI	Total score
BMI	Pearson Correlation	1	.165
	Sig. (2-tailed)		.082
	N	112	112
Total score	Pearson Correlation	.165	1
	Sig. (2-tailed)	.082	
	N	112	112

- 0.165 indicates weak correlation between BMI and Sleep quality (No statistical significance)

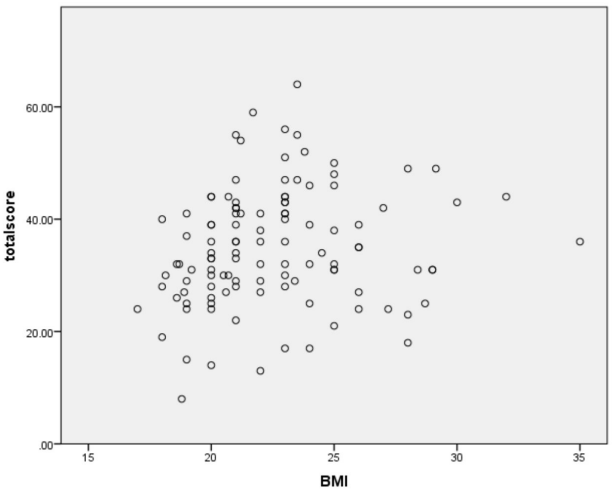

Figure 1. Correlation between BMI and Sleep quality scores among study participants

- The Scatter Graph indicates that there is no correlation between BMI and Sleep quality.

Sleep is a physiological process essential to life. The increasing level of sleeplessness, stress as well as the hectic schedule result in sleep loss, disruption of circadian rhythm, change in dietary habits and fatigue for medical personnel who provide around-the-clock health care. The role of sleep is not only to rest the body but also the suppression of blood pressure and glucose tolerance by decreasing the secretion of catecholamine and cortisol, which will leads to prevention of metabolic syndrome and other obesity-related diseases.

Based on the study done by Paul AM et al[11] on Sleep pattern and life style habits in medical students and interns male were 31.4% and females were 68.6% compared to our study were the males were 34.8% and females were 65.2%

The study done by Anam MR et al [9] on Association of sleep duration and sleep quality with overweight and obesity among adolescents there is more than 15% of the students have sleep disturbance.

Reports have been made were the quality of sleep have been associated with obesity, fatigue, poor decision making, diabetes mellitus, hypertension, atherosclerosis and cardiovascular diseases. Individuals who have slept an average of 7 to 8 hours per night have had the lowest morbidity of metabolic syndrome, and those who have slept longer and shorter have shown an increase risk of metabolic syndrome.

Conclusion

Sleep is an essential component of healthy behavior. Achieving the optimal level of balance between training and adequate sleep is important in residency programs. In our study most of the participants were females (Table 1. Gender wise Distribution of participants). It indicates that there is no relationship between Body Mass Index and sleep quality among M.B.B.S interns in Kanyakumari district (Figure 1. Correlation between BMI and Sleep quality scores among study participants).

Further large-scale studies are needed to assess all sleep dimensions and confirm the present findings. In the future Sleep disturbance will be a major concern in academic as well as professional development. Sleep disturbance is a modifiable risk factor and if this concern is addressed early in their life with proper knowledge and precautions it can lead to healthy life.

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BIAS: Recall bias may be present.

GENERALISABILITY: Not Generalisable.

LIMITATIONS: Low sample size.

FUNDING: Not funded.

CONFLICTS OF INTEREST: Nil

Ethical clearance: Signed copy of Declaration of Helsinki was submitted by all authors.

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