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## Assessment of quality of sleep and wellbeing among college students

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### Abstract

**Background:** Sleep is an integral human need. College students are one of the groups most at risk for poor sleep quality and chronic sleep loss, which could influence both physical and mental health. Poor sleep quality and insufficient sleep duration have been linked to a wide range of negative health outcomes, including, physical ailments and wellbeing. Conversely, adequate and good-quality sleep is crucial for maintaining physical health and personal well-being. The present study was aimed to assess the quality of sleep and personal wellbeing among college students.

**Methodology:** A descriptive survey design was used for the study. Study sample consisted of 300 college students from Rajadhani Institute of Engineering and Technology, Nagaroor in Trivandrum district who were selected by using convenience sampling technique. The data were collected by using socio demographic questionnaire, Pittsburgh Sleep Quality Index and Personal Wellbeing Index Scale. The collected data were analysed by using descriptive and inferential statistics.

**Results:** The study findings revealed that 57% of college students were having good quality of sleep and 41.6% had high personal wellbeing. There was a low negative correlation was found with quality of sleep and personal wellbeing of college students ( $r = -0.419, p > 0.05$ ). There was a significant association found between quality of sleep and selected socio demographic variables like hours of sleep, most preferred leisure time activity and family history of sleep problems ( $p > 0.05$ ). Significant association found between personal wellbeing and selected demographic variables like hours of sleep, use of mobile phone before going to bed, regular exercise ( $p > 0.05$ ).

**Conclusion:** The study findings concludes that personal wellbeing increases with good quality of sleep.

**Keywords:** Assess, college students, quality of sleep, relationship, personal wellbeing

### Introduction

Good health is the greatest blessing of life. It is important for us to care both physical and mental health through habits like proper nutrition, exercise, adequate sleep and stress management. Life becomes success and colourful, only if we satisfy all these habits, in that sleep plays an important role. Sleep is a vital indicator of health and wellbeing. Sound sleep during night, gives freshness and energise the whole day, thus providing a lovely effect on whole body [1]. Sleep is a normal state of altered consciousness during which the body rests, it is characterized by decreased responsiveness to the environment, and a person can be arouse to from it by external stimuli [2]. As a basic human necessity, sleep is one of the most relevant emerging themes, because there is strong evidence the sleep deprivation and sleep disturbances affecting metabolic and inflame with the broad negative impacts on health [3]. Sleep-related problems are prevalent occurrence among university students. Poor sleep quality is one of the most studied aspects of sleep complaints, affecting from 10% to 50% of this population. Poor sleep quality consequences are many and have a profound impact in the student's psychobiological health [4]. Sleep quality plays a crucial role in the overall wellbeing of college students, as inadequate sleep can significantly impact their academic performance, mental health, and daily functioning, making it a vital area of focus due to the unique stressors and lifestyle demands students face often leading to disrupted sleep patterns and poor quality rest [5].

### Material and Methods

Quantitative research approach with descriptive survey design was adopted for this study. Three hundred students who are studying in bachelor or diploma programme in the age group of 18-21years were selected by using convenient sampling technique.

Data were collected from students those who are studying in Rajadhani Institute of Engineering and Technology, Nagaroor, Thiruvananthapuram after obtaining formal permission from the institutional head. Ethical clearance taken from institutional ethics committee of Sivagiri Sree Narayana Medical Mission College of Nursing Varkala.

**Sample Size Calculation:** Sample size was calculated by the following formula.

#### Sample Size Calculation

$$n=4pq/d^2$$

$$P=54$$

$$q=46$$

$$d=11\% \text{ of error value}$$

$$=11/100 \times 54 = 5.94$$

$$4pq/d^2 = 4 \times 54 \times 46 / (5.94)^2 = 282$$

Anticipating loss to follow up and missing of data, the minimum sample size is rounded to be 300

#### Inclusion Criteria

Age group between 18-21 years.

#### Exclusion criteria

Students who have any physical and mental illness.

#### Ethical Considerations

Ethical clearance was obtained from the Institutional Ethical Committee of Sivagiri Sree Narayana Medical Mission

College of Nursing, Varkala. Formal permission was secured from the Principal of Sree Narayana College, Varkala and Rajadhani Institute of Engineering and Technology, Nagaroor. Participants were informed about the purpose of the study, assured of confidentiality, and their written informed consent was obtained.

#### Data collection process

Investigators introduced themselves to the sample and explained about the study. Confidentiality of the data were ensured and informed consent was obtained from the study participants. All the subjects who meet the inclusion criteria and variables during the time of data collection were selected as samples. Sleep quality of college students assessed by using Pittsburgh Sleep Quality Index (PSQI). Wellbeing of college students is assessed by using Personal Wellbeing Index (PWI) scale to measure their overall satisfaction with life and various domains of their lives

#### Statistical analysis

Frequency and percentage were used to describe the socio demographic variables, quality of sleep and wellbeing of college students. Relationship between quality of sleep and wellbeing was assessed by using Karl Pearson's correlation coefficient. Chi-square was used to assess the association between quality of sleep, wellbeing and socio demographic variables.

#### Results

**Table 1:** Distribution of samples based on socio demographic variables

Socio demographic variables	Frequency (f)	Percentage (%)
<b>1. Age (in years)</b>		
< 18 years	22	7.3
18–20 years	121	40.3
> 20 years	157	52.4
<b>2. Gender</b>		
Female	159	53.0
Male	141	47.0
<b>3. Religion</b>		
Hindu	167	55.7
Muslim	92	30.6
Christian	39	13.0
Others	2	0.7
<b>4. Area of residence</b>		
Rural	211	70.0
Urban	89	30.0
<b>5. Type of family</b>		
Nuclear	230	76.6
Joint	53	17.7
Extended	17	5.7
<b>6. Marital status</b>		
Married	30	10.0
Unmarried	270	90.0
<b>7. Course of study</b>		
Undergraduate	198	66.0
Postgraduate	43	14.3
Diploma	59	19.7
<b>8. Monthly family income (₹)</b>		
< 50,000	204	68.3
50,000 – 1,00,000	63	20.7
> 1,00,000	33	11.0
<b>9. Type of accommodation</b>		
Hostel	94	31.3
Home	185	61.7

Paying guest	21	7.0
<b>10. Leisure time activity</b>		
Watching TV	33	11.1
Reading books	43	14.3
Social media use	175	58.3
Others	49	16.3
<b>11. Use of mobile/laptop before bedtime</b>		
Yes	216	72.0
No	84	28.0

### Socio demographic variables

Among 300 college students 52.4% were within the age group of more than 20 years, 40.3% of college students were within the age group of 18-20 years and 7.3% were less than 18 years. Based on gender 53% were females and 47% were males. About 55.7% of college students were Hindus, 30.6% of college students were Muslims, and 13% of college students were Christians. Most of the college students (76.6%) were living in nuclear family 17.7% were from joint family and 5.7% of college students were from extended family. Among the total college students 70% were residing in rural area and 30% were residing in urban area. Majority of college students 90% were single and 10% of college students were married. Based on course of study 66% of college students were studying in B Tech, 14.3% of college students were studying M tech and 19.7% of college students were studying in Polytechnic. Majority 68.3% of college students had monthly family income of less than 50,000 rupees, 20.7% of college students had 50001 to 100000 rupees and 11% of students had greater than 1 lakh. Based on the current living status 61.7% were residing at home and 7% were paying guest. Based on habits of 91% were not having any habit of using cigarette, alcohol or any other substance and 9% were having habit of using cigarette, alcohol or other substances. Majority of college students 70.7% were not exercising regularly and 29.3% of college students were exercise regularly. Based on hours of sleep per day 52% of college students had 6-8hours of sleep per day, 27.3% of college students had 4-6 hours of sleep per day, 16.3% of college students had 8-10 hours of sleep per day and 4.4% of college students had less than 4 hours of sleep per day. Majority 58.3% of college students were spending time with social media, 16.3% of college students were spending time with other activities, and 11.1% college students were spending time with watching TV and 14.3% of college students spending time with reading books. Majority students 72.3% of college were using mobile phones before going to bed and 27.7% not using mobile phones before bed time. Most 95% of college students do not have any family history of sleep problems and 5% of college students is having family history of sleep problem.

### Quality of sleep & Personal wellbeing of college students

The result showed that 57% of college students had good quality of sleep and 43% had had poor sleep. About the personal wellbeing 41.6% of college students had high wellbeing, 35.8% of college students had neutral wellbeing and 22.6% of college students had low wellbeing.

### Relationship between quality of sleep and personal wellbeing among college students

There is a low negative correlation was found between quality of sleep and wellbeing ( $r = -0.419$ ) and significant at  $p < 0.05$

**Table 2:** Correlation between quality of sleep and personal wellbeing of college students

Quality of sleep	Personal Wellbeing			
	Low	Neutral	High	r
Good	28	52	90	-0.419*
Poor	40	55	35	

\*Significant at  $p < 0.05$  level.

### Association between quality of sleep and personal wellbeing with selected socio demographic variables.

The Chi square test shows that there was statistically significant association between quality of sleep and selected demographic variables like hours of sleep, leisure time activity and family history of sleep problem ( $p < 0.05$ ) and there was statistically significant association between wellbeing and selected demographic variables like use of mobile phone or laptop before sleep, hours of sleep and regular exercise ( $p < 0.05$ ).

### Discussion

The first objective of the study was to assess the quality of sleep among college students. The result shows that quality of sleep among college students based on the distribution, 57.3% of college students had good sleep and 42.7% had poor sleep. The above findings were supported by the study conducted by Kiran Paudel, Tara Ballav Adhikari, Pratik Khanal, Ramesh Bhatta, Rajan Paudel, Sandesh Bhusal, Prem Basel (2021) to identify the factors associated with sleep quality among 212 undergraduate medical students in Nepal. The result showed that 38.2% students have poor sleep quality and 61.8% have good sleep quality [6].

The second objective of the study was to assess personal wellbeing among college students. The result showed that 41.6% of college students had high wellbeing, 35.8% of college students had neutral wellbeing and 22.6% of college students had low wellbeing. The above findings were supported by a cross sectional study was conducted by Douwes, R Metselaar, J Pijnenborg, G. H. M., & Boonstra, (2023) to assess well being of students among college students among 24000 students in the department of studies to business and hospital management in Netherlands. The study reveals that 69.2% of good personal well being and 30.8% students having poor wellbeing [7].

The third objective of the study was to find out the relationship between quality of sleep and personal wellbeing among college students. Karl Pearson coefficient was used to find the relation between quality of sleep and wellbeing among college students. The result shows that there is a low negative correlation found between quality of sleep and wellbeing ( $r = -0.419$ ) and significant at  $p < 0.05$ . Hence the hypothesis  $H_1$ : there is a significant relationship between quality of sleep and wellbeing of college students. The above findings were supported by the cross sectional study was conducted by Chichen Zhang, Fang Dong, Xiao Zheng

et.al (2022) was to assess relationship between quality of sleep and wellbeing among older adults in China. Karl Pearson Correlation Coefficient was used to prove the relation. The findings indicated that poor sleep quality predicted lower subjective wellbeing( $r=-0.997$ ), with negative emotions partially mediating this relationship [8].

The fourth objective of the study was to find out the association between quality of sleep and selected socio demographic variables. The chi square test shows that there was statistically significant association between hours of sleep, leisure time activity and family history of sleep problem ( $p<0.05$ ) and there is statistically no significant association between other selected socio demographic variables. Therefore the hypothesis H<sub>2</sub>: there is a significant association between quality of sleep and selected socio demographic variables among college students. The above findings were supported by the cross sectional study conducted by Amanda Hellstrom, Patrik Hellstrom, Ania Willman And Cecilia Fragerstorm (2014) was to assess the association between sleep disturbances and leisure activities among elderly in Swedish. The findings indicated that leisure activities associated with sleep quality in the elderly. Moreover gender differences play a role in sleep disturbances and there is association between quality of sleep and selected socio demographic variables [9].

The fifth objective of the study was to find out the association between personal wellbeing and selected socio demographic variables. The chi square test shows that there was statistically significant association between hours of sleep, usage of mobile phone or laptop before sleep and family history of sleep problems ( $p<0.05$ ) and there is statistically no significant association between other selected socio demographic variables. Therefore the hypothesis H<sub>3</sub>: there is a significant association between wellbeing of students and selected socio demographic variables among college students. The above findings were supported by the cross sectional study conducted by Jiayi Peng, Jiayi Zhang, Bingbing Wang, Yanchen He, Qiuying Lin, Peng Fang, Shengjun Wu (2023) was to assess subjective wellbeing and socio demographic variables. The findings indicated that selected socio demographics such as sleep duration, mobile phone usage and family history of sleep issues significantly associate with subjective wellbeing of college students [10].

## Conclusion

Sleep is one of the important factors that helps individuals to stay healthy everybody needs to have a sufficient duration of sleep. Poor sleep quality will influence daily activity. The present study was intended to assess quality of sleep and wellbeing among college students. The following conclusion were drawn based on the findings of the study. 57% of college students experienced good quality of sleep and 41.6% of college students experienced high levels of wellbeing. Karl Pearson correlation coefficient was used to find the relationship between quality of sleep and wellbeing of college students. Significant low negative correlation was found between quality of sleep and wellbeing of college students. Significant association found between quality of sleep of college students and selected socio demographic variables such as hours of sleep, leisure time activity and family history of sleep problem ( $p<0.05$ ) and Significant association found between personal wellbeing of college students and selected socio demographic variables such as

use of mobile phone before sleep, hours of sleep and regular exercise ( $p<0.05$ ).

**Conflict of Interest:** Nil.

**Source of funding:** Self.

**Ethical Clearance:** Taken from institutional ethics committee of Sivagiri Sree Narayana Medical Mission College of Nursing, Varkala on 15.03.25 IEC NO: SCN/166/25-26

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