

A Study to Assess the Quality of Sleep Among Nursing Students of Selected Colleges of Rohtas, Bihar with A View to Develop Information Booklet to Improve Quality of Sleep

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Abstract— Introduction: Sleep Quality is an essential component of the learning and memory processes. Sleep issues are common among college students and may negatively impact their academic performance. This study aimed to assess sleep quality among undergraduate nursing students studying in selected colleges of Rohtas, Bihar.

Sleep is a physical and mental resting state in which a person becomes relatively inactive and unaware of the environment and also we know that sleep is a naturally occurring altered state of consciousness characterized by decrease in awareness and responsiveness to stimuli. Nursing students are the future professional nurses and they are destined to work in different shifts. The nature of work done by professional nurses demand alertness and a vigilant attitude. Nursing students may not consider sleep as a top priority in the context of their academic requirement as they reduce their sleeping time to have extra hours for study and work.

Methods: A cross-sectional descriptive study was concluded among 210 nursing students from four colleges of Rohtas, Bihar. A self-questionnaire tool includes the socio demographic profile of the study subjects and Pittsburg of the study subject. The technique of sampling was simple random. Collected data was entered and analyzed in SPSS version 18.

Findings:

- Majority of the study (59.5) % were having very good sleep quality followed by (35.3) % were fairly good and (2.4%) were fairly bad only (2.4%) were having sleep quality very bad. Majority of the study (77.6%) were having in sleep latency of 1-2 hours followed by 17.1% with 0 sleep latency and only 5.2% were having 3-4 sleep latency. Majority of the study (48.9%) were having in sleep duration of 6-7hours followed by 30.5% with >7hr sleep duration and 17.1% with 5-6 hours sleep duration and only 4.28% were having <5 hour sleep duration.

Majority of the study (38.57%) were having in Sleep Efficiency of <65%, followed by (24.2%) with 85% sleep efficiency and (21.4%) were in sleep efficiency 64-74% and only (15.7%) were having 75-84%. Sleep efficiency. Majority of the study (72.38%) were having in sleep disturbance of 1-9, followed by (16.19%) with 0% sleep disturbance and (11.4%) were in sleep disturbance 10-18 and only 0 were having 19-27 sleep disturbance. Majority of the study (80.47%) were having in Sleep Medication Not During the Past Month, followed by (16.6%) with less than once a week in Sleep Medication, and (2.8%) were having in Sleep Medication Once or Twice a Week and only (0) were having in Three or More Times a Week sleep medication. Majority (52.85%) were having in Daytime Dysfunction is 0 followed by (35.2%) with 1-2 Daytime Dysfunction and (10.95%) were in 3-4 Daytime Dysfunction, only (1%) were in 5-6 Daytime Dysfunction.

Conclusions: The present study was aimed to assess the quality of sleep among the study group, out of 210 study participant majority of 84.3% having good sleep quality and 15.7% of study participant have bad quality of sleep. Provide informational booklet to those students which have bad quality of sleep to improve quality of sleep Component of information booklet are;

- Why is sleep hygiene important.
- Signs of poor sleep hygiene.
- How can improve your sleep hygiene.
- When to consult health care professional

There is no significant association between quality of sleep and selected socio demographic variables.

Index Terms- Nursing students; Sleep quality.

I. INTRODUCTION

Sleep is defined as an essential brain state for maintaining energy and restoring bodily function.

Sleep quality has a huge impact on health and it is considered a leading public health problem. Although there has been interest in sleep quality in different disciplines such as nursing, medicine, and psychology, it has not yet been clearly defined from a neurophysiological point of view.¹

Sleep disorder have been associated with several factors such as smoking, being overweight lack of physical activity, coffee intake and stress. Several studies report a high prevalence of some of those risk factors among university students. Nursing students often have some periods of night shift due to hospital internship. Currently, there is a debate as to whether night shifts during placement are effective learning time although they might disturb sleep in undergraduate students.²

The study was conducted by Saat N.Z.M., Sleep hygiene was assessed using a set of questions on the behavior such as eating, daily wakeup time, exercise screentime and others. Mean While, study of sleep quality among university students postulated that poor sleep quality was due to skipping breakfast, and tea drinking habits recognized the importance of sleep and relationship between physical activity and sleep quality in enhancing the health status of the population. Purpose of this study was assess the prevalence of poor sleep quality and its relationship with physical activity among health science students in Kuala Lumpur³

Nursing students are recognized as one of the groups with greater sleep deprivation and one of the most technologically oriented. Some evidence suggest that poor sleep quality has been associated with internet addiction. The use of internet devices during the night period and the brightness of the light that they project on the retina are some factors that can cause changing sleep pattern.⁴

The impact of nursing students sleep hygiene practice on patient safety conducted by Cynthia M.Thomas. This study also found that many nursing students need to work while in colleges and/or during clinical activities requiring up to 12 hours⁵

Sleep hygiene is a behavior modification that can affect the fulfilment of sleep needs. This Behavior or

habit is very effective in the process of improving the quality, quantity and fulfilment of Sleep needs. Some recommended sleep hygiene practices are: reducing irregular Sleep-wake schedules, reducing strenuous activities or exercise at night, and reducing the use of caffeine, alcohol, and cigarettes (Stepanski and Wyatt, 2003). Most college students with unwanted sleep habits are poorly aware of behavior that can improve Sleep quality. Lack of knowledge about good sleep hygiene contributes to poor sleep practices, which Then affects health and well-being (Suen, Tam and Hon, 2010). Sleep quality in medical students may be improved through sleep hygiene education programs (Brick, Seely and Palermo, 2010) Research conducted on medical students of Qazvin University, found that students⁶

Need of the study:

Nursing students face complex situation that can affect their sleep quality. Different factors that have been identified as limiting the quality of sleep of this group, especially during the first year of professional training. There were individual psychosocial factors regarding the academic area and professional environment where they describe the possibility of making mistakes in care practice and handling equipment, as well as lack of knowledge and professional skills.

Nursing students may not consider sleep as a top priority in the context of their Academic Requirement as they reduce their sleeping time to have extra hour for study and work.

According to the National sleep foundation, American academy of sleep medicine and Sleep research society guidelines recommended 7 to 9 hours of sleep for young adults. According to National institutes of health report more than 70% of college students less than eight hour of sleep a day. 60% of college students dragging and tired or sleepy at least three days a week. More than 80% of college students loss of sleep negatively affect their academic performance. According to the National sleep foundation, American academy of sleep medicine, sleep problems are second and stress is first cause of difficulties with academic performance of college students.

So, the present study was conducted to assess the quality of sleep among undergraduate student with a

view to develop information booklet on sleep hygiene. The study was decided to improve quality of sleep to enhance the academic performance of the students.

- Assess the sleep quality of nursing students
- To improve the quality of sleep among nursing students.

II. RESEARCH METHODOLOGY

The study methodology includes the research approach, research design, variables, setting of the study, population, sample sampling technique, description of tools, ethical considerations, pilot study, data collection procedure, and plan for data analysis.

III. RESEARCH APPROACH

Quantitative research approach was used to do the present study.

IV. SAMPLE SIZE

210 study subjects were included are as per the power analysis during pilot study.

V. METHOD OF DATA COLLECTION

Data was collected from the study subjects by providing them self-structured perform a for sociodemographic variables and Pittsburgh sleep quality index tool to be field by them as per their experience about sleep

VI. TOOLS FOR THE DATA COLLECTION

TOOL 1: Sociodemographic variables data of college students. It includes of 6 items which includes demographic and clinical data of selected college students

I.e., Age, Gender, Course of study, Year of study, Language and area.

TOOL 2: Pittsburgh sleep quality index.

Pittsburgh sleep quality index to assess the quality of sleep which includes 7component

Component: 1 Sleep quality

Component: 2 sleep latency

Component: 3 Sleep duration

Component :4 Sleep efficiency

Component: 5 Sleep Disturbance

Component: 6 Sleep Medication

Component:7 Day time Dysfunction

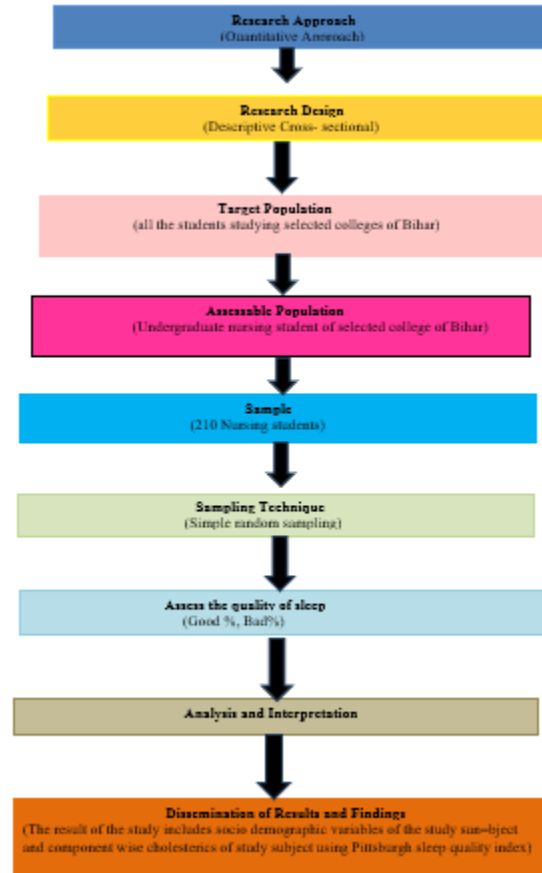


Fig: SCHEMATIC REPRESENTATION OF RESEARCH METODOLOGY

VII. OBJECTIVE OF THE STUDY

1. To assess the quality of sleep among undergraduate Nursing students of selected college of Rohtas.
2. To associate the quality of sleep with the of undergraduate nursing students with the selected socio- demographic variables.

The 19-term PSQI is a self -administered questionnaire that examines sleep patterns during the past month. PSQI has seven components of sleep quality. Sleep latency, sleep duration, subjective sleep quality, sleep disturbances, use of sleep medication and day- time dysfunction. The score for each

components ranges from 0-3 and the sun is a global score that ranges from 0 to 21. Higher scores signify poor sleep quality. A global score >5 detects poor sleep quality.

collected data were entered and analyzed in SPSS version

Inferential statistics was used to find out the association between sleep quality & socio-demographic variables of the study subjects.

VIII. RESULTS

Table:1 presents the quality of sleep out of 210 students, 177 students (84.3%) were found to have good sleep quality, whereas 33 students (15.7%) were found to have poor sleep quality

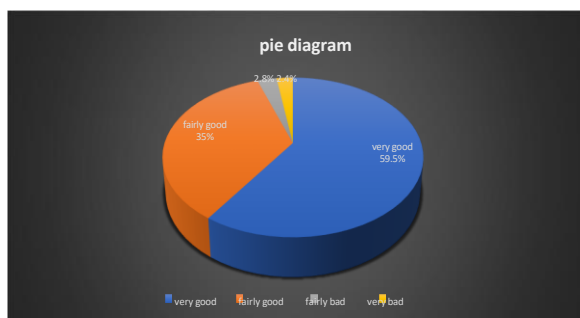


Fig: The depicts the majority of the study subjects were (59.5%) were as very good (35.3%) were as fairly good (2.8%) were as fairly bad (2.4%) were as very bad.

Table:1 Socio-demographic profile of nursing students (N=210)

Variables	N (%)
Age in years:18-20	117(55.7)
21-23	78(37.1)
24-26	15(7.1)
Gender:	
Male	80(38.1)
Female	130(61.9)
COURSE OF STUDY:	90(42.9)
GNM	2(1.0)
POST-B.SC B.SC	117(55.7)
NURSING M.SC	1(0.5)
NURSING	
LANGUAGE:	

HINDI ENGLISH	100 0
CURRENT YEAR OF STUDY	122(58.1) 43(20.1)
1st year	26(12.4)
2nd year 3rd year	18(8.6)
4th year	

Section-2 Assessment of sleep characteristics using Pittsburgh sleep quality index of the study subject which includes: 7 component:

- Component -1 (Sleep Quality)
- Component -2 (Sleep Latency)
- Component -3 (Sleep Duration)
- Component -4 (Sleep Efficiency)
- Component -5 (Sleep Disturbance)
- Component- 6 (Sleep Medication)
- Component -7 (Daytime Dysfunction)

SECTION- 2 Pittsburg sleep quality index of the study subject which includes 7 components

Component 1(Sleep Quality)

Table 4.2 Percentage distribution of sleep quality

N=210

COMPONENT ALITY) :1(SLEEP QU		
SLEEP QUALITY	OMPONENTS (N)	PERCENTAGE OF STUDY SUBJECTS
Very Good	0	59.5%
Fairly Good	1	35.3%
Fairly Bad	2	2.8%
Very Bad	3	2.4%

COMPONENT:1(SLEEP QUALITY)

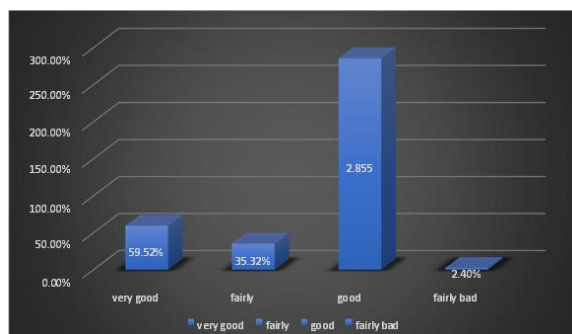


Fig:- 1. Percentage distribution of study subject as per their quality of sleep,

The figure depicts the majority of study subjects (59.5%) were Very Good, (35.3%) were in Fairly Good, (2.8%) were Fairly Bad, (2.4%) were Very Bad.

Component:-2 (Sleep Latency)

Table 4.3 Percentage distribution of sleep Latency

N=210

COMPONENT :2(SLEEP LATENCY)		
SLEEP LATENCY	SCORE (N)	PERCENTAGE OF STUDY SUBJECTS
0	0	17.1%
1—2	1	77.6 %
3—4	2	5.2 %
5—6	3	0%

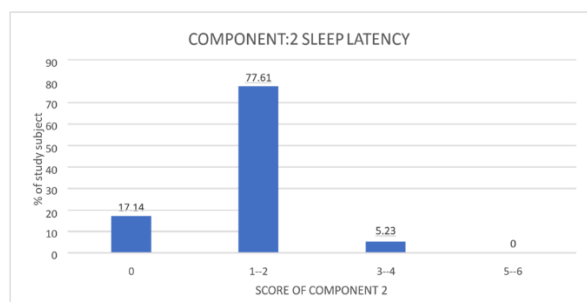


Fig: - 2. Percentage distribution of study subject as per their sleep latency,

The figure depicts the majority of the study subjected (77.6%) were in Sleep Latency 1 – 2, (17.1%) were in Sleep Latency 0, (5.2%) were in Sleep Latency 3 – 4.

Component 3(Sleep Duration)

Table 4.4 percentage distribution of sleep Duration.

N=210

COMPONENT:3 (SLEEP DURATION)		
SLEEP DURATION	SCORE (n)	PERCENTAGE OF STUDY SUBJECTS
>7Hrs	0	30.5%
6-7 Hrs	1	48.0%
5-6 Hrs	2	17.1%
<5 Hrs	3	4.2%

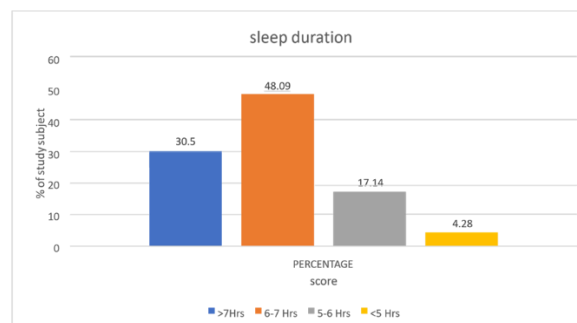


Fig: - 4.9 Percentage distribution of study subject as per their Sleep Duration,

The figure depicts the majority of study subjects (48.0%) were 6-7hrs of sleep duration (30.5%) were sleep duration >7 hrs ,(17.1%) were sleep duration 5-6 hrs ,(4.2%) were sleep duration <5 hrs.

Component 4(Sleep Efficiency)

TABLE 4.5 PERCENTAGE DISTRIBUTION OF SLEEP EFFICIENCY.

N=210

COMPONENT- 4 (SLEEP EFFICIENCY)		
SLEEP EFFICIENCY	SCORE (n)	PERCENTAGE OF STUDY SUBJECTS
>85%	0	24.2%
75-84%	1	15.7%
64-74%	2	21.4%
<65%	3	38.5%

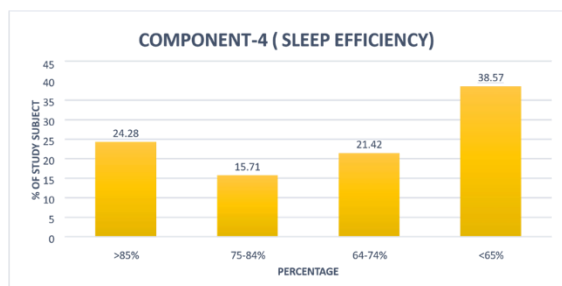


Fig: - 4.10 Percentage distribution of study subject as per their Sleep Efficiency,

The figure depicts the majority of (38.5%) were in Sleep Efficiency <65%, (24.2%) Were in sleep efficiency >85%, (21.4%) were in sleep efficiency 64-74% and (15.7%) were in sleep efficiency 75-84%.
Component 5(Sleep Disturbance)

TABLE 4.6. PERCENTAGE DISTRIBUTION OF SLEEP DISTURBANCE.

N=210

COMPONENT- 5 (SLEEP DISTURBANCE)		
SLEEP DISTURBANCE	SCORE (N)	PERCENTAGE OF STUDY SUBJECTS
0	0	16.1%
1--9	1	72.3%
10--18	2	11.4%
19--27	3	0%

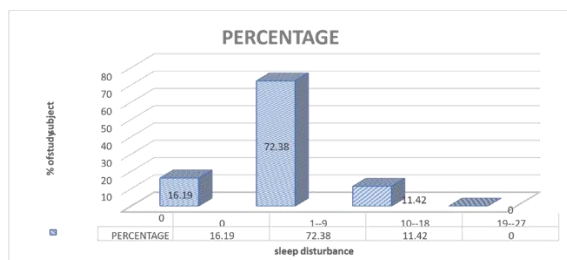


Fig: - 4.11 Percentage distribution of study subject as per their Sleep Disturbance,

The figure depicts the majority of (72.3%) were in sleep disturbance 1-9, (16.1%) were in sleep disturbance 0, (11.4%) were in sleep disturbance 10-18 and 0 were in sleep disturbance 19-27.

COMPONENT-6 (SLEEPING MEDICATION)

TABLE 4.7. PERCENTAGE DISTRIBUTION OF SLEEPING MEDICATION.

N=210

COMPONENT- 6 (SLEEPING MEDICATION)		
USE OF SLEEPING MEDICATION	SCORE(N)	PERCENTAGE OF STUDY SUBJECTS
Not use the past month	0	80.4%
Less than once a week	1	16.6%
Once or twice a week	2	2.8%
Three or more times a week	3	0%

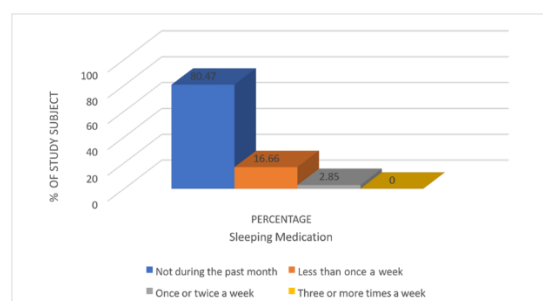


Fig: - 4.12 Percentage distribution of study subject as per their Sleep Medication,

The figure depicts the majority of study subject (80.4%) were in Sleep Medication Not During The Past Month, (16.6%) were in Sleep Medication Less Than Once a Week, (2.8%) were in Sleep Medication Once or Twice a Week and (0) were in Sleep Medication Three or More Times a Week.

Component- 7 (Daytime Dysfunction)

TABLE 4.7. PERCENTAGE DISTRIBUTION OF DAY-TIME DYSFUNCTION.

N=210

COMPONENT- 7 (Day-time Dysfunction)		
DAY-TIMED DYSFUNCTION	SCORE(N)	PERCENTAGE OF STUDY SUBJECTS
0	0	52.8%
1--2	1	35.2%
3--4	2	10.9%

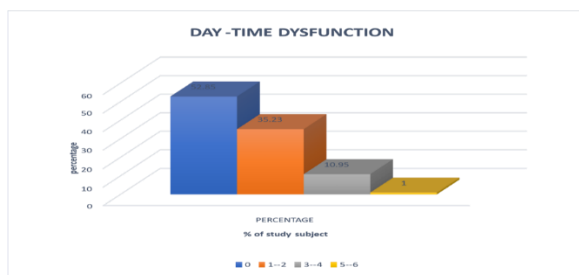


Fig: - 4.13 Percentage distribution of study subject as per their Daytime Dysfunction,

The figure depicts majority of study subjects (52.8%) were in Daytime Dysfunction is 0, (35.2%) were in Daytime Dysfunction is 1-2, (10.9%) were in Daytime Dysfunction is 3-4, (1%) were in Daytime Dysfunction is 5-6.

Section- 3 To Associate the Quality of sleep Score of study subject with selected socio demographic variables

Table-4 Association between quality of sleep and socio-demographic variables of the study subjects.

N=210

demographic variables	Category	Quality of Sleep		Chi-Square value	df	Tabulated Value
		Good	Poor			
Age(in years)	18- 20	99	18	4.0	2	0.134 ^{NS}
	21-23	68	10			
	24-26	10	5			
Gender	Male	63	17	2.9	1	0.84 ^{NS}
	Female	114	16			
Course of study	Gnm	69	21	7.1	3	0.068 ^{NS}
	Post Basic	2	0			
	asic B.Sc Nursing	105	12			
	M.Sc Nursing	1	0			

Year of study	1st year	100	22	7.7	4	0.103 ^{NS}
	2nd year	37	7			
	3rd year	23	3			
	4th year	17	1			
Area of residence	Urban	51	9	3.7	2	0.15 ^{NS}
	Rural	100	23			
	Semi-Urban	26	1			

REFERENCES

- [1] Ruiz-Zaldibar c, et al The effect of sleep intervention on sleep quality in nursing students: study protocol for Randomized controlled trails. Int j.Enviro Res public health.2022oct25;19(21):13886. Doi:103390/ijerph 19211386 PMID: 36360766;PMCID: PMC9656642.
- [2] Belingheri M, Luciani M, Ausili D et al sleep disorder and night shift work in Nursing students: across-sectional study Med Lav.2022 feb 22;113(3):e2022.003 Doi:10.23749/mdl.v113il,12150.PMID:3522665 4;P MCID;PMC8902742
- [3] Saat N.Z.M, Hanawi S. A. et al Sleep quality among university students: Association between demographic factor and physical activity level International journal of pharmaceutical Research and Allied science,2020, 9(3):57-65 Available and Alide science, 2020,9(3):57-65 Available onlinewww.ijpras.com
- [4] Emerson joe the importance of sleep foe college students last update; Jun 15, 2022https:// admissions u.s.f edu/blog/the- importance of sleep for college students.
- [5] M. Cynthia Thomas et al the impact of nursing students sleep hygiene practices on patient safety June 2022 Journal of nursing education practice 12(10): 16 Doi: 10.5430/jnep.v12n10p16
- [6] Hatta Santoso ong, et al. Chronobiology and the case for sleep health intervention in the

- community: Singapore med J.2021 May; 62(5):220-224. Doi : 10.11622/smedj.2021058.
- [7] Mohamed R, Dwibedi N. Psychosocial correlates of insomnia among college students. *Prev Chronic Dis* 2022;19:220060 Doi : <http://dx.doi.org/10.5888/pcd19.220060>