Research Article

A COMPARATIVE STUDY TO ASSESS THE QUALITY OF SLEEP AMONG HOSPITALIZED PATIENT IN WARDS AND INTENSIVE CARE UNITS AT SELECTED APOLLO HOSPITALS

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Abstract

Background: Sleep in the intensive care unit (ICU) poses unique challenges for patients, clinicians, nurses, and researchers. Patients spend long periods in bed, remain in a supine position with minimal to no activity, and are typically not exposed to significant light variation over a 24-hour period. These conditions make sleep onset and continuity problematic. In addition, patients are subject to repeated environmental disruptions that further fragment sleep. **Objectives:** 1. To assess the quality of sleep among hospitalized patients of wards and ICUs 2. To compare the quality of sleep among hospitalized patients of wards and ICUs 3. To associate the quality of sleep among hospitalized patients of wards and ICUs with their selected demographic variables. **Materials & Methods:** In this Comparative study, we have selected 60 patients (30 – ICU's & 30 – Ward) by Non probability purposive sampling technique. The Modified Pittsburgh Sleep Quality Index was used to assess the Quality of sleep among Hospitalized patients in ICU & Ward and scores were compared. **Results:** Ward patients are having mean of 5 PSQI score and ICU patients are having mean 15.57 PSQI score, so the mean difference is 10.57, this difference is large and it is statistically significant difference. It was confirmed using student independent t-test. Also each domain wise ICU patients are having more PSQI score than ward patients. So, Statistical P value is P<0.001 very high significant. Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS, version 22) statistical software's. **Conclusion:** Our study showed that there is a significant difference in the Quality of sleep among Hospitalized patients in ICU's & Wards.

Keywords: Quality of Sleep, Hospitalized patients in ICU's & Wards, Pittsburgh Sleep Quality Index Scale..

INTRODUCTION

Sleep is very important for humans and more so to hospitalized patients. Alterations in the normal sleep pattern have negative impact on the medical conditions, mental health, cognitive performance and recovery of the hospitalized individuals. Sleep in the intensive care unit (ICU) poses unique challenges for patients, clinicians, nurses, and researchers. Patients spend long periods in bed, remain in a supine position with minimal to no activity, and are typically not exposed to significant light variation over a 24-hour period. These conditions make sleep onset and continuity problematic. In addition, patients are subject to repeated environmental disruptions that further fragment sleep. As per the National Sleep Association - Sleep quality is the measurement of how well you're sleeping—in other words, whether your sleep is restful and restorative. Most of studies are assessing the Quantity of sleep pattern. Sleep quality is more complicated to measure than sleep quantity, but it's not entirely subjective. The researcher got interested to assess the Quality of sleep among hospitalized patients in ICU's & Wards. Guidelines give an overview of sleep quality goals, and they include some individual and age differences. Four items are generally assessed to measure sleep quality: Sleep Latency, Sleep waking, Wakefulness and Sleep Efficiency. The goal of this study to assess the Quality of Sleep among Hospitalized patients in ICU's & Wards and compare the results.

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MATERIALS AND METHODS

The data was collected in 2022. A Quantitative research approach with Non-Experimental design – Descriptive design was used to assess the Quality of Sleep among Hospitalized patient in Wards and Intensive Care Units at selected Apollo Hospitals Chennai. After obtaining Institutional Ethics Committee approval this study was conducted. The researcher first introduced herself and had a general talk with all patients in ICU's & Wards, to identify the patients who fill the inclusion criteria and select 60 samples (30 – ICU's & 30 – Wards) by Non probability purposive sampling technique and explained the purpose of the study and got consent from all the study participants. The data collected for 4 weeks between 9am to 4 pm whose Minimum Hospital Stay is ≥ 5 days. The Subjects were given Modified Pittsburgh Sleep Quality Index to assess the Quality of sleep among Hospitalized patients in ICU & Ward and scores were compared. Section A Consists of Demographic characteristics (Age, Sex, Education, Occupation, Duration of Stay and Regular Sleeping Hours) and Section B consist of Modified Pittsburgh Sleep Quality Index Questionnaire. Final data has been drawn onto Microsoft Excel sheet and sent for statistical analysis. Descriptive & Inferential statistics were used for the data analysis. Simple bar diagram, Multiple bar diagram, Pie diagram, simple bar with 2 standard error bar diagram were used to represent the data. ≤ 0.05 was considered statistically significant. All statistical tests are two tailed test. Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS, version 22) statistical software's.

The Scoring Interpretation criteria considered appropriate as follows:

Global PSQI score interpretation

Min=0, Max=3, Total Questions=7, Total score =21

PSQI score	
SCORE	CATEGORY
0-4	Good
5-21	Poor

RESULTS

The below table shows the demographic information of patients those who are participated for the following study on "A Comparative study to assess the quality of sleep among hospitalized patients in Wards and Intensive Care Units at selected Hospitals". Similarity of demographic information between wards and ICU patients are assessed using chi square test. Ward patients are having mean of 5 PSQI score and ICU patients are having mean 15.57 PSQI score, so the mean difference is 10.57, this difference is large and it is statistically significant difference. It was confirmed using student independent t-test. Also each domain wise ICU patients are having more PSQI score than ward patients.

Fig.1 Shows below the Level of PSQI Score among Ward and ICU Patients.

Association between PSQI score and demographic variables of ward & ICU patients

Fig. 2, 3 & 4 shows the association between PSQI score and demographic variables of Ward & ICU patients.

Table 1. Demographic variables

Demographic variables		Wards(n=30)		ICU(n=30)		Chi square test
		n	%	n	%	
Age (in Years)	16-25 years	1	3.33%	3	10.00%	χ2=4.99 p=0.17(NS)
	26-35 years	7	23.33%	3	10.00%	
	36-45 years	8	26.67%	4	13.33%	
	Above 46 years	14	46.67%	20	66.67%	
Gender	Male	14	46.67%	13	43.33%	χ2=0.07 p=0.80(NS)
	Female	16	53.33%	17	56.67%	
Religion	Hindu	25	83.34%	24	80.00%	χ2=2.49 p=0.28(NS)
	Christian	1	3.33%	4	13.33%	
	Muslim	4	13.33%	2	6.67%	
Residence	Rural	1	3.33%	3	10.00%	χ2=5.47 p=0.14(NS)
	Semi-rural	7	23.33%	13	43.33%	
	Urban	16	53.34%	8	26.67%	
	Semi-urban	6	20.00%	6	20.00%	
Education	Informal education	0	0.00%	0	0.00%	χ2=0.77 p=0.68(NS)
	Primary education	9	30.00%	11	36.67%	
	Higher secondary	11	36.67%	12	40.00%	
	Graduate	10	33.33%	7	23.33%	
Occupation	Government	0	0.00%	0	0.00%	χ2=5.49 p=0.06(NS)
	Private	18	60.00%	10	33.33%	
	Business	0	0.00%	2	6.67%	
	Home maker	12	40.00%	18	60.00%	
Duration of stay	5-10 days	27	90.00%	24	80.00%	χ2=1.46 p=0.48(NS)
	10-20 days	2	6.67%	5	16.67%	
	20-30 days	1	3.33%	1	3.33%	
	More than a month	0	0.00%	0	0.00%	
Regular sleeping hours	> 7 Hours	19	63.34%	2	6.67%	χ2=24.21 p=0.001***(S)
	6-7 Hours	7	23.33%	9	30.00%	
	5-6 Hours	4	13.33%	16	53.33%	
	< 5 Hours	0	0.00%	3	10.00%	
Type of Family	Nuclear Family	9	30.00%	15	50.00%	χ2=2.50 p=0.11(NS)
	Joint Family	21	70.00%	15	50.00%	
	Extended Family	0	0.00%	0	0.00%	
Marital Status	Married	28	93.34%	29	96.67%	χ2=1.02 p=0.60(NS)
	Unmarried	1	3.33%	0	0.00%	
	Divorced	0	0.00%	0	0.00%	
	Widow	1	3.33%	1	3.33%	

Table 2. Modified Pittsburgh sleep quality index (PSQI)

| Domains	Ward (n=30)		ICU (n=30)		Mean Difference	Student independent t-test
	Mean	SD	Mean	SD		
Subjective sleep quality	.77	.63	2.27	.52	1.50	t=10.09 p=0.001***(S)
Sleep Latency	.90	.61	2.40	.50	1.50	t=10.46 p=0.001***(S)
Sleep duration	.57	.57	2.27	.52	1.70	t=12.07 p=0.001***(S)
Sleep efficiency	.60	.50	2.23	.50	1.63	t=12.62 p=0.001***(S)
Sleep disturbance	.87	.57	2.17	.59	1.30	t=8.65 p=0.001***(S)
Use of sleep medication	.47	.57	2.10	.76	1.63	t=9.42 p=0.001***(S)
Daytime dysfunction	.83	.59	2.13	.63	1.30	t=8.24 p=0.001***(S)
TOTAL SCORE	5.00	2.97	15.57	3.53	10.57	t=12.54 p=0.001***(S)
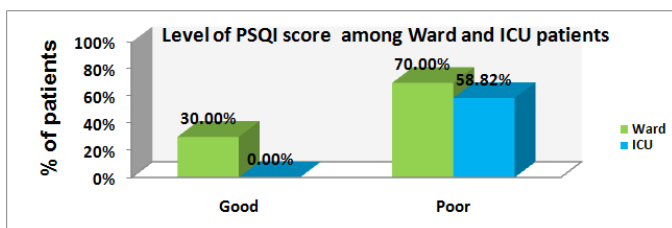
Figure 1.
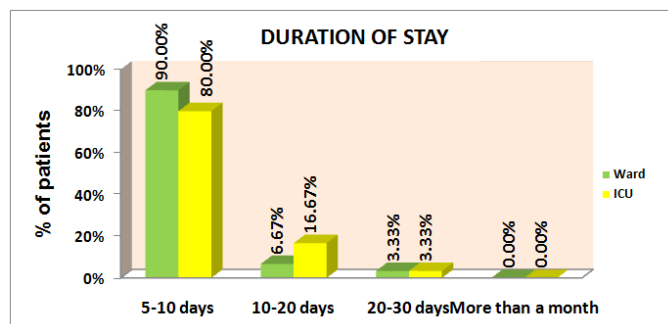
Figure 2.

Above showed Fig.2 shows that the patients in Ward with shorter duration have a Good sleep pattern compared with patient whose hospitalization more than 10 days in ICU.
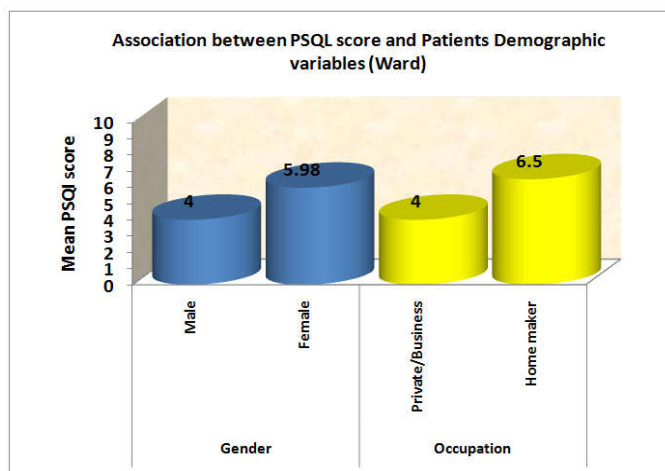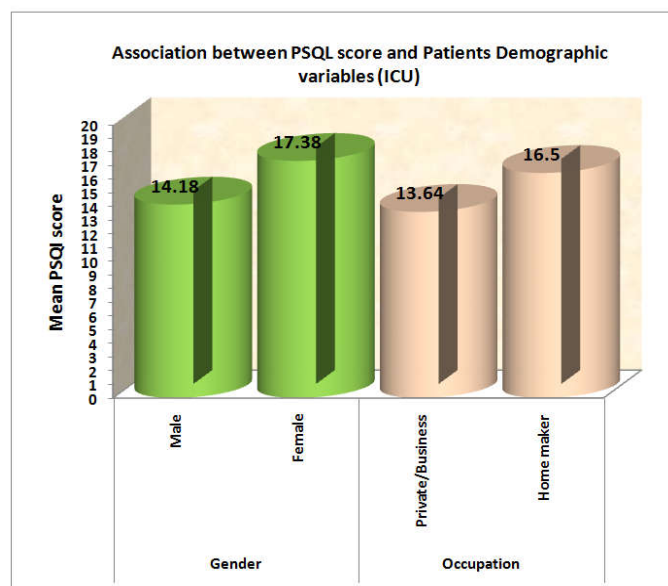

Figure 3.

Figure 4.

The association between PSQI score and demographic variables of Ward & ICU patients. Females and home makers are having more PSQI score than others. Statistical significance was calculated using non parametric (because standard deviation is large) Kruskal Wallis test.

DISCUSSION

The present study findings were revealed in terms of the objectives for the study. Ward patients are having mean of 5 PSQI score and ICU patients are having mean 15.57 PSQI score, so the mean difference is 10.57, this difference is large and it is statistically significant difference. It was confirmed using student independent t-test. Also each domain wise ICU patients are having more PSQI score than ward patients. The association between PSQI score and demographic variables of Ward & ICU patients. Females and home makers are having more PSQI score than others. Statistical significance was calculated using non parametric (because standard deviation is large) Kruskal Wallis test. The patients in Wards with shorter duration have a Good sleep pattern compared with patient whose hospitalization more than 10 days in ICU.

The study which supports the result of the current study done by Ovine Loyster D souza, Irene T.R. Alvares, Manjeshwar Shrinath Baliga, Factors affecting quality of sleep in hospitalized patients: A Cross-sectional survey in a tertiary care hospital. The findings of the cross-sectional study showed that the mean score for PSQI was 7.58 ± 3.14 and that 69% of the patients had poor sleep as inferred from the global PSQI >5 scores. Age and gender had no effect on the PSQI total score, but the number of roommates, type of the ward, hospitalization period, presence and severity of pain, taking sleep medication, and attitude toward the overall atmosphere and interior of wards has caused deviation in scores. Another study which supports the result of the current study done by SN Prakrithi, Suhas Chandran, M Kishor, TS Pradeep, 2019, A Comparative study of the quality of sleep in patients in the ward: Pre and Postsurgery in a tertiary care hospital in South India. The findings of the study showed poor postoperative sleep quality across all subgroups, i.e., age, sex, use of sleep medications, type of anesthesia administered, and room type. During the postoperative period, subjective sleep quality, sleep latency, and sleep disturbance worsened along with reduced duration of sleep, without significant changes in the habitual sleep efficiency and day-time dysfunction. Sleep is an extremely important physiological requirement for recovery after surgical stress. By identifying which component of sleep is being affected more than others, targeted interventions can be designed by the way of pharmacological or non-pharmacological methods to effectively combat sleep disturbance in surgical patients.

Conclusion

- Sleep is one of the basic activities of human daily living, and it affects human health physically and mentally.
- In general, decreased sleep time during illness, stress, or change of a sleep environment such as hospitalization can affect sleep-wake cycle directly and causes daytime somnolence.
- Ward patients are having mean of 5 PSQI score and ICU patients are having mean 15.57 PSQI score, so the mean difference is 10.57, this difference is large and it is

statistically significant difference. It was confirmed using student independent t-test. Also each domain wise ICU patients are having more PSQI score than ward patients.

• This study shows that Ward 30% of the patients is having good sleep and 70% of them are having poor sleep. In ICU, 100% of them are having poor sleep. Sleep quality score were not similar in both the groups. Statistical significance difference between experiment and control group was calculated using chi square test. So, Statistical P value is P<0.001 very high significant.

REFERENCES

Abhishek Honawad et al., Study of Sleep Quantity & Quality in Hospitalized Medical General Ward Patients: Journal of the Association of Physicians of India 2022 Apr;70(4):11-12.

Dennis Auckley, MD, Poor sleep in the hospital: Contributing factors and Interventions: Wolters Kluwer. 2022 Aug, 05

Ovine Loyster D souza et al., Factors affecting quality of sleep in hospitalized patients: A cross-sectional survey in a tertiary care hospital Year : 2019 | Volume : 10 | Issue : 4 | Page : 201-206

Prakrithi, S.N., Chandran S, Kishor M, Pradeep T S. A comparative study of the quality of sleep in patients in the ward: Pre and postsurgery in a tertiary care hospital in South India. *Muller J Med Sci Res.,* 2019;10:1-7.

Ramavath Devendra Naik, Kartik Gupta and Sanjeev Sinha. Sleep Quality and Quantity in ICU patients: A Cross-sectional Study. *Indian J Crit. Care Med.,* 2018 Jun; 22(6): 408–414

Santi Kulpatcharapong et al., Sleep Quality of Hospitalized Patients, Contributing Factors, and Prevalence of Associated Disorders: PubMed Central Published online 2020 Jan 20. doi: 10.1155/2020/8518396

Siti Nadiah Binte Arman et al., Subjective sleep quality among hospitalised adult patients: An observational, cross-sectional study: SAGE Journals; published on June 28, 2022/Proceedings of Singapore Healthcare Volume 31: 1–7

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