

Original Research Article

Assessment of Quality of Sleep and Perceived Sleep Distracters among Hospitalised Patients

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ABSTRACT

Topic: A comparative study to assess quality of sleep and perceived sleep distracters among hospitalised patients in selected private and government hospital of Delhi.

Objectives: The study aimed to assess and compare the quality of sleep and perceived sleep distracters among hospitalized patients in a selected government and private hospital of Delhi, to seek association between the quality of sleep and selected demographic variables and to develop and disseminate guidelines among nursing personnel.

Methods: A comparative study was conducted on a convenience sample of 100 patients admitted in general medical wards of selected private and government hospital of Delhi. The data was gathered through structured interview schedule from October to November 2016. Data analysis was done through descriptive and inferential statistics.

Results/findings: Result revealed that most of the patients in both the hospitals experienced moderately disturbed sleep and there was no significant relationship between the quality of sleep of patients admitted in government and private hospital. The result also showed that environmental factors are the main reason of disturbed sleep in both the hospitals but physical factors ranked third in government hospital and second in private hospital whereas, psychological factors ranked second in government hospital and third in private hospital.

Conclusion: Deteriorated quality of sleep in hospitalized patients may delay the recovery from illness and has serious impact on overall health of the patients. However, in India such studies are limited and need further exploration. Nursing interventions for reducing sleep disturbing factors are suggested.

Key words: Quality of sleep, perceived sleep distracters, hospitalized patients.

INTRODUCTION

Sleep is a basic human need. It is a state of rest accompanied by altered consciousness. Although the exact function of sleep is unclear, people spend one third of their lives asleep. The advice that “Everything will look better after a goodnight’s sleep” is based on the belief that it promotes physical well being. ^[1]

Proper sleep is important to health as good nutrition. Sleep is required for many reasons: to rest mind and body, to prevent fatigue, to conserve energy, to cope with daily stress. Inadequate amount of sleep decreases the concentration, ability to make judgment, and increases irritability. It promotes proper day time functioning. ^[2]

Homo sapiens is a day species that is adapted to perform activities during the light

period of the light/dark cycle and rest during the dark period. The development of the human visual system and its dependence on light information is what makes it a day species. The main sleep period for the human species is, therefore, during the dark phase.^[3]

In addition to the physiologic parameters, sleep quality is an important factor to be assessed for two reasons. Firstly, complaints about sleep quality are common. Difficulty in falling or staying asleep is the main factor affecting sleep quality and affects approximately 15% to 35% of cases. Secondly, poor quality sleep is an indication of various illnesses.^[3]

Sleep quality is a measure of the feeling that a person would have of being energetic, active, and ready for a new day, and includes numerous quantitative and qualitative aspects. This concept includes sleep latency, time of sleep, number of waking-up times per night, depth of sleep, and resting. Because of its direct effects on cardiopulmonary, gastrointestinal, and neuromuscular functions, an individual with inadequate sleep may present various physical and psychological problems. Sleep quality defects can cause disorder of a person's feelings, thoughts, and motivation. It is well known that sleeping problems of patients cause tension, delays in healing of wounds, increased pain, and contributes to many difficulties in the daily activities of patients.^{1,5,9} Although the functions and mechanisms of sleep are not clearly understood, it is generally accepted that it is necessary for the maintenance of good health and well-being.^[4]

Objectives of the study

1. To assess and compare quality of sleep among hospitalized patients in selected government and private hospital of Delhi.
2. To assess and compare the perceived sleep distracters among hospitalized patients in selected government and private hospital of Delhi.

3. To seek association between quality of sleep with selected demographic variables.(age, gender, length of stay in hospital and type of family)

MATERIALS AND METHODS

Research Approach: Quantitative approach

Research Design: Descriptive comparative survey design

Research variable: Quality of sleep and Perceived sleep distracters

Setting of the study: The setting for the pilot and final study both was M (private hospital) and S (government hospital) hospital, Delhi.

Population: Population comprised of patients admitted in general medical wards in M and S hospitals Delhi.

Sample: The sample size comprised of 100 patients (50 government hospital and 50 private hospital) who were hospitalised in M and S hospitals of Delhi.

Sampling technique : Convenience non probability sampling technique was adopted to select patients from M and S hospital, Delhi.

Procedure:

- Ethical permission was taken from the Institutional Ethical Committee of Jamia Hamdard, New Delhi to conduct the research study.
- Permission was obtained, to conduct the research study, from the Medical superintendent of M hospital, Delhi and S hospital, Delhi.
- The technique of data collection was a structured interview schedule to collect demographic data and perceived sleep distracters (Rating scale), a modified standardised tool (Pittsburgh sleep quality index) was used to assess the quality of sleep. Interviewing method was used to administer the tool.
- The possible range of score for sleep quality of index was 1-21. According to the possible range of score three

categories were formulated for the interpretation of the sleep quality index scores obtained by the hospitalised patients in general medical wards. Hence, their scores were interpreted as:

- 1 to 7- mildly disturbed sleep
- 8 to 14- moderately disturbed sleep
- 15 to 21- severely disturbed sleep

- Structured interview schedule to assess the perceived sleep distracters among hospitalized patients. This part consisted of 3 content areas with total of 50 items to find out the perceived sleep distracters among hospitalised patients. This rating scale was divided into 3 categories of sleep distracters in hospitals. They were as follows:
 - A. Environmental factors- (20 items)
 - B. Physical factors- (20 items)
 - C. Psychological factors- (10 items)
- To ensure the validity of the tool, seven experts were selected from the fields of Psychiatry, Mental Health Nursing, Medicine and Medical and Surgical nursing. The experts were chosen on the basis of their clinical expertise, experience, qualification and interest in the problem area.
- Reliability of the structured interview schedule to assess the quality of sleep (modified Pittsburgh sleep quality Index) and perceived sleep distracters (rating scale) in hospitalized patients was established by using Chronbach's alpha. It was found to be 0.83 and 0.86 respectively.
- Formal administrative approval was obtained from the concerned authority to conduct the final study.
- The patients hospitalised in medical wards who met the inclusion criteria were selected using Convenience non probability sampling technique.
- The purpose of the study was explained to the participants. After obtaining their willingness to participate in the study

the data were collected from the sample subjects.

Statistical Analysis

- The data was analysed using descriptive and inferential statistics.
- Frequency and percentage computation to describe the demographic profile of the study subjects.
- Mean, median and standard deviation of possible range of scores for quality of sleep among hospitalised patients.
- Mean, modified mean and rank order of perceived sleep distracters among hospitalised patients.
- Chi square test to seek relationship between the quality of sleep and selected demographic variables (Age, Gender, Length of stay in hospital, Type of family, Occupation).
- "z" value to determine the significance between the quality of sleep of hospitalised clients in selected government and private college of Delhi.

RESULTS

The data in Table: 2 revealed that the distribution of quality of sleep score among patients admitted in the government hospital ranged from 1-21. It can be seen that the mean of quality of sleep index of patients admitted in government hospital (13.98) was higher than the mean quality of sleep index of patients admitted in private hospital (13.88). The standard deviation of the quality of sleep index of patients admitted to private hospital was 4.94 and that of patients admitted to government hospital was 4.18 showing more heterogeneity among patients admitted in private hospital.

TABLE 1: Frequency and percentage distribution of study subjects by their demographic characteristics (Age, gender, religion, type of family), n₁+n₂= 100

S.No	Sample characteristics	Government hospital Frequency (%)	Private hospital Frequency (%)
1.	Age <ul style="list-style-type: none"> • 18-25 • 26-32 • 33-40 • Above 40 	10(20) 8(16) 14(28) 18(36)	9(18) 16(32) 16(32) 9(18)
2.	Gender <ul style="list-style-type: none"> • Male • Female 	26(52) 24(48)	30(60) 20(40)
3.	Religion <ul style="list-style-type: none"> • Muslim • Hindu • Sikh • Christian • Any other 	5(10) 44(88) 0(0) 1(2) 0(0)	33(66) 16(32) 1(2) 0(0) 0(0)
4.	Type of family <ul style="list-style-type: none"> • Joint family • Nuclear family • Single parent family 	21(42) 29(58) 0(0)	27(54) 23(46) 0(0)
5.	Educational qualification <ul style="list-style-type: none"> • Illiterate • Primary school • Secondary school • Graduate • Postgraduate and above 	30(60) 13(26) 7(14) 0(0) 0(0)	2(4) 0(0) 18(36) 20(40) 10(20)
6.	Occupation <ul style="list-style-type: none"> • Government job • Private job • Self employed • House wife • Student • Unemployed 	6(12) 15(30) 12(24) 10(20) 7(14) 0(0)	2(4) 30(60) 12(24) 4(8) 0(0) 2(4)
7.	Marital status <ul style="list-style-type: none"> • Single • Married • Widower/widowed • Divorced • Separated 	37(74) 10(20) 3(6) 0(0) 0(0)	39(78) 10(20) 1(2) 0(0) 0(0)
8.	Stay in hospital <ul style="list-style-type: none"> • 3-6 days • 1 week- 2 weeks • Above 2 weeks 	28(56) 11(22) 11(22)	39(78) 6(12) 5(10)
9.	Sleep quality before hospitalization <ul style="list-style-type: none"> • Satisfactory • Not satisfactory • Poor 	50(100) 0 0	50(100) 0 0

TABLE-2 Frequency distribution, mean, median, standard deviation of quality of sleep index in government and private hospitals. n₁+n₂=100

Range of scores	Government hospital (n ₁ =50)				Private hospital (n ₁ = 50)			
	Frequency (n ₁)	Mean	Median	Standard deviation	Frequency (n ₂)	Mean	Median	Standard deviation
Mildly disturbed sleep (1-7)	13	13.98	14.01	4.18	9	13.88	14.0	4.94
Moderately disturbed sleep (8-14)	21				28			
Severely disturbed Sleep (15-21)	16				13			

TABLE 3: Mean, mean difference, standard deviation and ‘z’ value of quality of sleep index of patients admitted to the private and government hospitals. n₁+n₂=100

Quality of sleep	Mean	Mean difference	Standard deviation	“Z” value
Government hospital	13.98	0.10	4.18	1.18
Private hospital	13.88		4.94	

‘Z’ =1.18, not significant at 0.05 level of significance

The data in Table: 3 showed mean, mean difference, standard deviation and “z” value of quality of sleep index. The mean and standard deviation of the quality of sleep index for government hospital was 13.98 and 4.18 respectively. While for private hospital, mean and standard deviation was 13.88 and 4.94 respectively, with a mean difference of 0.10. The obtained mean difference was found not to

be statistically significant as evident from the calculated z- value (1.18) which was less than the tabulated z- value (1.96) at 0.05 level of significance. Therefore, the obtained mean difference was not a true difference and was by chance. This indicates that there was no significant difference in the quality of sleep index between government and private hospital

TABLE : 4 Mean, modified mean and rank order of broad areas of factors that led to sleep distractions in patient of government and private hospital. $n_1+n_2=100$

Factors	No. of items	Government hospital (n ₁ =50)			Private hospital (n ₂ =50)		
		Mean	Modified mean	Rank order	Mean	Modified mean	Rank order
Environmental	20	7.14	0.357	I	7.60	0.38	I
Physical	20	4.08	0.204	III	4.68	0.234	II
Psychological	10	2.78	0.278	II	1.20	0.120	III

The data in Table 4 revealed that the highest sleep distracter in both the hospitals were in the area of ‘environmental factors’. The psychological factors ranked second among the distracters in the government

hospital whereas in private hospital it was the physical factors. The last among the factors ranked in government hospital was physical factors whereas in private hospital it was the psychological factors.

Table 5: The association between quality of sleep index of patients admitted to selected government and private hospitals of Delhi and selected demographic variables viz. Age , gender, length of stay in hospitals and type of family. $n_1+n_2 = 100$

Category	Mildly disturbed sleep	Moderately disturbed sleep	Severely disturbed sleep	Test used	X ² value
Age(in years)					
Below 40	12	26	18	Chi square test	0.878
Above 40	10	23	11		
Gender					
Male	15	21	16	Chi square test	4.063
Female	7	28	13		
Length of stay in hospital					
Below 2 weeks	14	49	13	Chi square test	1.121
Above 2 weeks	8	19	29		
Type of family					
Joint family	6	18	12	Chi square test	1.68
Nuclear family	16	31	17		

X² (2)= 5.99 at 0.05 , not significant

The data in table-5 showed that chi square test was computed to find the association between the quality of sleep index of patients admitted to selected private and government hospital of New Delhi and selected demographic variables such as age, gender, length of stay in hospital and type of family. It was found that none of the demographic variable had a significant relationship with quality of sleep of the patients.

DISCUSSION

Sleep quality is particularly important in inpatients of a general hospital. It was shown in various studies that the rate of deteriorated sleep quality increased among inpatients in general hospitals.

The present study aimed at finding the quality of sleep and perceived sleep distracters among hospitalized patients in a selected private and government hospital of Delhi. The results revealed that all the patients in both the hospitals experienced a bad quality of sleep and maximum of the

patients experienced moderately disturbed sleep in both the hospital but there was no significant relationship between the two hospitals.

Izadi-Ivanji F et al, [5] conducted a similar study, a cross sectional survey in Kashan's Hospitals, Iran in 2009 which aimed at evaluating the quality of sleep among patients admitted in general medical wards on a sample size of 400 patients and it was found that overall quality of sleep of the patients was poor and previous experience of hospitalisation had no impact on their quality of sleep after discharge.

Hospitals are usually environments where having high-quality sleep is a challenge. The reasons why sleeping in a hospital might not be a restful or restorative experience can be classified into the following three groups of factors: environmental (for example, loud noises and excessive lighting), physiological or organic (such as pain and nausea) and psychological (for example, distress and anxiety). Accordingly, it is valuable to determine the risk factors for sleep disturbances in inpatients of general hospitals. Unfortunately, there are few studies of sleep problems among Indian inpatients of general hospitals

The present study also assessed perceived sleep distracters among hospitalised patients in general medical wards. And it showed that environmental factors have been the main reason of the disturbed sleep for both government and private hospitals. Psychological factors and physical factors ranked second and third respectively in government hospital while in private hospital physical factors were ranked second and psychological factors were ranked third.

Pimental et.al [6] conducted a study in two hospitals in Belo Horizonte, Brazil, showed that the main causes of sleep disturbances were environmental factors including noise (45.7%), temperature (22.9%) and number of roommates (20.0%). Furthermore, 29% of the inpatients could not sleep, because of their medical condition

and 17% became insomniac because of psychological problems.

In a study undertaken at a specialized women's health service at a teaching hospital located in Campinas (SP), the author observed that the main factors patients mentioned as being responsible for the interruption of their night sleep were environmental factors, such as the care health professionals provided to them (92%) and their fellow patients (84%). In addition to these factors, among female patients, 44% referred to the noise caused by equipment placed near the bed, the noise caused by patients who were generally in poor health or who were agitated and the need to use the bathroom or the urinal. Excessive lighting was cited as an influential factor by 52%, and environment noises were cited by 36%. [7]

Limitations

- The study was conducted only in the medical wards in selected private and government hospital of Delhi, hence the generalization of the data in other settings cannot be done.

Recommendations

- A similar study can be conducted in the different areas of hospitals such as orthopaedics wards, gynaecological wards, psychiatric wards or surgical wards.
- The same study can also be conducted in more than one hospital at the same time to generalise the findings.
- A similar study can be conducted on a larger sample size.
- Quality of sleep can be assessed on patients who are on sedative therapy.

CONCLUSIONS

- ✓ The study showed that all the study subjects had a satisfactory sleep habit before hospitalization.
- ✓ Most of the samples were in age group of above 40 years in government hospital and between 26-32 years in private hospital,

- ✓ More than half of the samples were Hindu in government hospital and Muslims in private hospital
- ✓ Most of the samples were illiterate in government hospital and in private hospital most of them were graduates.
- ✓ Most of the samples stayed between 3-5 days in both private and government hospital.
- ✓ It was found in the research that most of the samples in both hospitals experienced moderately disturbed sleep and no statistically significant relationship of quality of sleep index was found between the two hospitals.
- ✓ The highest sleep distracting factor was in the area of environmental factors in both of the hospitals. And the least distracting factors were in the area of psychological factors in private hospital and physical factors in government hospitals.

Implications of the study

Keeping in view the widespread problem of deteriorated quality of sleep during the hospitalization in government and private set ups, this study adds to body of knowledge and research evidence that throws light on aspects related to quality of sleep and perceived sleep distracters among patients admitted in private and government hospitals of Delhi. Hence, the study has implications for nurse professionals

- **Nursing education**

- ✚ In nursing syllabi and course plans both at graduate and post graduate levels, students have certain theory units and hours dedicated to sleep and sleep disorders and how a good night sleep plays an important role in the early recovery of the diseases.
- ✚ Student nurses can use evidence based knowledge to understand the process of good and bad quality of sleep and the areas where the sleep distractions are highly present.
- ✚ Nurse educators should have the responsibility in updating the knowledge on bad quality of sleep and can provide health education to the target group in order to promote sleep in hospitalised patients in government and private hospitals.

- ✚ In service and continuing education programmes can be organised for nurses working in hospitals, so that they are also updated in assessing the quality of sleep in hospitalised patients and promoting effective sleep in hospital environment.

- **Nursing administration**

- ✚ Deteriorating quality of sleep in the hospitals and increasing distracters has been an issue of concern for a while now.
- ✚ As nurses work on a 24- hour basis in the hospitals there is a need to divert more attention to involve nurses in the assessment of sleep quality of patients and promoting effective sleep.
- ✚ The nursing administration must facilitate the organisation and conduction of such health education programmes, wards and clinics.

- **Nursing research**

- ✚ Bad quality of sleep and sleep distractions in hospital is a bio-psycho-social and medical problem. More and more research can be carried out on deteriorating quality of sleep in the hospitals and its contributing factors in many aspects.

ACKNOWLEDGEMENT

Though only my name appears on the cover of this dissertation, a great many people have contributed to its production.. First of all, I wish to express my proud gratitude to God Almighty who was with me through this endeavor. I would like to express my deepest appreciation to Ms. Bindu Shaiju, Assistance professor and Ms. Neha John, Tutor, Faculty of Nursing, Jamia Hamdard, New Delhi, without whose constant guidance and support, this dissertation would not have been possible. I feel obliged to express my gratitude to Dr. Manju Chhugani, Principal/ Working Dean, Ruffaida college of Nursing for facilities permission, extending facilities, support and consistent help throughout this research project.

My sincere thanks and acknowledgment are extended to all my well wishers, and all others who assisted, guided and cooperated directly or indirectly for the completion of present study.

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How to cite this article: Maryam SS, Shaiju B, John N. Assessment of quality of sleep and perceived sleep distracters among hospitalised patients. *Int J Health Sci Res*. 2017; 7(4):317-324.
