

# Factors Affecting Sleep-Quality for Patients in Medical and Surgical Departments

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**Abstract:** Sleep health essential behaviour, sleep is a multidimensional, bio behavioural process that is essential to human health and function. Many factors that disturb Sleep among hospitalized patients negatively influence the quality of life. *The objective;* of the study was assessment factors affecting sleep-quality for patients in medical and surgical departments. *Design;* A descriptive design was applied in the current study. *Setting;* the study was conducted at the Medical and Surgical Departments at Ain Shams University Hospitals and El-Demerdash Hospital. *Participants;* A purposive sample of 212 patients was included. *Methods;* Three tools were used for data collection; Structured Interview Questionnaire, Assessment Questionnaire for Factors affecting Sleep quality and Sleep-Quality Questionnaire. *Results* of the study showed that there were highly statistically significant correlation between the sleep-quality for studied patients and department, classification of department, hospital length of stay and hospital room and a highly statistically significant positive correlation between the sleep-quality of studied patients and health & illness factors, environmental factors, and emotional factors. There was a statistically significant correlation between the sleep-quality for studied patients with age and gender.

**Keywords:** Factors affecting sleep; Sleep-quality; Sleep.

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## I. INTRODUCTION

Almost a third of life is passed in sleep. Sleep is a fundamental physiological need of humans which required for energy conservation, appearance, and physical well-being and if it is not provided, human life is threatened [1]. Sleep is one of the essential daily life activities of the individuals, affects their lives and health, and has psychological, physiological and social dimensions [2]

Sleep is a formal of temporary, partial, and periodic communication loss of an organism with its surroundings that can be reversed by stimuli of varying intensities. Physical and psychological health depends on meeting necessities such as sleep. Sleep quality comprises concepts such as regular sleep routine, sleep latency, and total sleep duration. Sleep quality is significant as it is an indicator of many diseases [3] Decreased sleep quality may cause mental, emotional, and motivational disorders.

Sleep is defined as 'cyclic reversible state of cognitive and sensory disconnected from the external environment' that is essential for rest, repair, well-being, and survival. Normal sleep consists of 4-6 cycles each cycle 90-100 minute of period REM and non REM sleep[4]. Studies of normal subjects show sleep deprivation negatively affects ventilatory, immunologic, hormonal, circulatory and metabolic stability. Sleep deprivation defines as a person's ability to perform physical activities and affects cognitive function such as delirium.[2]

Normal sleep is included non-rapid eye movement (NREM) and rapid eye movement (REM) sleep. NREM sleep divided into progressively deeper stages of sleep: stage N1, stage N2, and stage N3. The phasic component is a sympathetically driven state characterized by muscle twitches, rapid eye movements, and respiratory variability. Tonic REM is a Para sympathetically driven state with no eye movements. The REM period length and density of eye movements increase throughout the sleep cycle. [5]

Sleep-quality and quantity can be affected by psychological, social, and physical factors which including age, the amount of recent sleep or wakefulness, the time of the day or night relative to an individual's internal clock, other behaviors prior to sleep such as stress, exercise, environmental conditions such as temperature and light, and various chemicals [6] also Sleep-quality may change with personal characteristics and health status, In the realization of this basic human activity, factors such as smoking and alcohol, medicines, diseases, and noise play important roles [7].Disease and hospitalization have a close relationship with sleep disturbances, especially leads to disturbances in the sleep pattern [1].

Sleep is one of the inevitable daily-living activities and it is one of the most important factors contributing to health. Sleep has a positive effect on homeostasis and body functions and quality of life. Sleep is a basis for the systemic, organic, and cellular functions of an organism with its absence being potentially harmful to health and changing feeding behavior, blood pressure, glucose regulation, some hormonal axes, and cognitive processes. [8].

It is known that sleep- quality, particularly of those patients who stay at surgery clinics, is negatively affected by pre/post-surgery periods and pain restricted movements. Patients' inability to maintain routine sleep-wake cycle may affect their overall health negatively, and creates more tension in patients, retards wound-healing, intensifies pain and generates difficulties in doing activities of daily living. Therefore, hospitalized patients need more sleep and rest than normal so that their bodies can be recovered and restored. [9]

In practice, it is known that hospitals are not the ideal places to rest in and lead to sleep problems by affecting the quality of sleep. Patients state are generally disturbed and the quality of their sleep is interrupted by being woken up to noisy, take medicines and strange environment, frequently done medical interventions and care services. Also, it is emphasized that such factors as anxiety and stress, night-lights, overcrowded hospital rooms, and uncomfortable hospital beds affect the quality of sleep [10].

Handling sleep disorders, which are common problems among hospitalized individuals, constitute a part of care. The identification of individuals having sleep disorders and factors affecting sleep is important in the care process about planning nursing intervention [11]. Insufficient sleep quality is associated with nervousness, confusion, anxiety increased, and generally poor life satisfaction [12].

Awareness of sleep disorders, as one of the concerning factors of the quality of life among patients and its associated factors, would enable health care providers to offer more comprehensive care. It is essential to evaluate sleep disturbance factors and to modify any of these factors to maintain an environment for optimal sleep quality which would promote the recovery process [13].

Asleep quality is essential for physical, psychological and cognitive well-being. Learning, memory processing, brain development, and cellular repair are among the most important functions of sleep. In addition to maintaining normal brain functioning, sleep has important roles in controlling the functions of many other body systems. Sleep deprivation is associated with increased daytime sleepiness, fatigue and reduced neurocognitive performance [8].

Nursing is a profession that includes meeting basic human needs, as well as sleep, needs to help the patients through a holistic approach, nurses are expected to take the necessary precautions by determining the factors that affect the sleep status of the hospitalized patients to help maintain normal sleep process and to improve the quality of sleep of the patients [14].

In nursing agree with Virginia Henderson (1955), who identified sleep and rest as one of the 14 basics "human needs," and Florence Nightingale who noted the importance of sleep to human health and healing (1860) that sleep promotion is a fundamental element of nursing practice. By our broad focus on health promotion, disease prevention, expertise in lifestyle, and behavioral change coupled with bio behavioral perspectives, nurses are well suited to promote sleep and assist individuals, families, groups, and communities to prevent and treat sleep disorders[15].

Sleep Disorders and Sleep Promotion in Nursing Practice to provide a reference for nurse educators, advanced practice nurses, and other nursing leaders on sleep and sleep disorders; to integrate the science of sleep into nursing practice, research and education; and to facilitate the uptake and translation of evidence-based assessment and treatment of sleep into community based and clinical settings where nurses practice[15].

*Significance & justification*

It is essential to spend a sufficient period of time in sleep, as sleepiness from any cause can result in impaired attention with adverse disastrous results. Research has shown that poor sleep can affect not only a person's physical and mental health, but it can even impair civilized behavior like moral judgments [16]. Sleep disorders cause increased morbidity and higher health care costs. Additionally, chronic sleep deprivation is associated with increased risk of diabetes mellitus, cardiovascular disease, cancer, decrements in functional capacities and quality of life [17]. Many kinds of evidence point to sleep being essential for health, including observed relationships between inadequate sleep and symptom, functional performance deterioration, physical and mental disease vulnerability, on through to premature mortality[15].

**AIM OF THE STUDY:**

The aim of this study was to assess factors affecting sleep-quality for patients in medical and surgical departments.

**RESEARCH QUESTION**

To achieve the aim of this study the following research questions were formulated:

- A. What are the factors affecting sleep- quality for patients in medical and surgical departments?
- B. Is there a relation between socio-demographic characteristics and sleep-quality disturbance among patients in medical and surgical departments?
- C. What is the relation between the factors affecting sleeping and sleep-quality among patients in medical and surgical departments?

**II. MATERIALS AND METHODS**

It involved a description of the study design, settings, as well as study subjects and sampling, and data collection tools.

**RESEARCH DESIGN:**

A descriptive design (cross-section study) was used in this study to fulfill the aim of the study and answer the research questions.

**SETTING:**

The study was conducted at the Medical and Surgical Departments at Ain Shams University Hospitals (El Demerdash Hospital), Cairo, Egypt.

**SUBJECTS:**

A purposive sample for all patients (male and female) in medical and surgical departments with selective criteria;

Inclusion criteria, included patient-oriented with GCS 15/15 and undergoing medical or surgical diagnosis, hospitalized for at least three days, able to communicate and willing to participate in the study.

Exclusion criteria, Patients who had a situation or disease that had a direct effect upon their sleep-quality (e.g. alcohol addiction, use of psychiatric and neurological medicines, psychological disorders, dementia, etc.) were excluded.

**TOOLS FOR DATA COLLECTION**

Three different tools were used to collect data pertinent for this study. They included the following:

1. Structured Interview Questionnaire: it designed by the researcher and included the 1<sup>st</sup> part Socio-demographic data as "age group, gender, marital status, education level and occupation" and 2nd part included that "department of admission, classification of department, hospitalization length of stay, and hospital room".
2. Assessment Questionnaire for Factors Affecting Sleeping quality.

It developed by the researcher based on the related literature [18] [19] and validated by a group of five experts in the medical surgical nursing department at the Faculty of Nursing, Ain Shams University. It was answered by Yes or No. It was used to assess the factors affecting sleep quality for patients, which included seven items related to factors health/illness (11point), Environment factors (10 points), Lifestyle (5 points), Emotional /Stress (4points), Diet (2point), Stimulation factors (4points) and administer medication through the day effect on sleep (7point).

3. Sleep-Quality Questionnaire: it adopted from [20] which included 9 questions to measure sleep quality. Which the following as a guide scoring system: 0– 9 sleep problems seem to be severe, 10– 18 some sleep problems and It’s important to examine sleep habits and see how can make changes, 19– 27 sleep is in good shape, but there are still many steps can take to make it even better and 28– 36 sleep is in great shape.

**PILOT STUDY:**

The pilot study commenced once ethical approval had been obtained. The pilot study was conducted on 5 patients to test the clarity, feasibility, and applicability of the determent tools. Based on its result modifications and omissions of some details were done and then the final forms were developed. The patients who included in the pilot study were excluded from the study sample.

**PROCEDURES OF THE STUDY:**

Data were collected over a period of three months from the beginning of June 2019 to the end of August 2019. Data were collected for five days a week from Saturday to Wednesday at morning shift from 8:00 am to 2:00 pm and afternoon shifts from 2:00 pm to 8:00 pm. Data were collected using Electronic Questionnaire Google Form for each patient that was interviewed individually to fill in the questionnaire sheet by the researcher who was read the questionnaire to the patients and as they answered the researcher filled in the questionnaire. The all-time needed for the application of the tool lasted approximately about 40-45 minutes. The first tool was interviewing questionnaire; it lasts about 10 minutes to fill in it, while the second tool was Questionnaire for Factors Effect on Sleeping Pattern it lasts about 15 minutes to fill in it, and finally, the third tool was Sleep-Quality Questionnaire it lasts about 15-20 minutes to fill in it.

**ADMINISTRATIVE DESIGN AND ETHICAL CONSIDERATION:**

Official permission was obtained from the Director of Ain Shams University Hospital and the heads of the departments in which the study was conducted. Meeting and discussions were held between the researchers and nursing administrative personnel to make them aware of the aims and objectives, as well as to get better cooperation during the implementation phase. It was important to have their full support, especially to find out some sort of motivation to stimulate patients to participate positively in the study. The aim of the research was explained to the participants. Verbal consent was obtained from each patient to participate in the study, after clarifying the procedures of the study. Participants were informed about their right to refuse participation and to withdraw at any time without any consequences. The confidentiality of data was ensured.

**STATISTICAL DESIGN:**

Statistical design: data entry and analysis were done using the Statistical Package for Social Science (SPSS) version 20. Data were presented in the tables and charts using actual numbers and percentages. Appropriate statistical methods were applied (percentage, correlation coefficient (r)). Regarding P-value, it was considered that: non-significant (NS) if P> 0.05, Significant (S) if P< 0.05, Highly Significant (HS) if P< 0.01.

**III. RESULTS**

**Table 1: Percentage distribution of sociodemographic characteristics of the studied patient.**

<i>Items</i>	<i>Total No =212</i>	<i>%</i>
<b>Age:</b>		
▪ 18 – 24	24	11.3
▪ 25 – 34	28	13.2
▪ 35 - 44	56	26.4
▪ 45 – 54	32	15.1
▪ 55 – more	72	34.0
<b>Gender:</b>		
▪ Female	116	54.7
▪ Male	96	45.3
<b>Marital Status:</b>		
▪ Married	164	77.4
▪ Unmarried	48	22.6

<b>Education Level :</b>	▪ Illiterate	32	15.1
	▪ Primary school	36	17.0
	▪ Middle school	36	17.0
	▪ High school	24	11.3
	▪ University	84	39.6
<b>Occupation :</b>	▪ Employed	80	37.7
	▪ Unemployed	132	62.3

Table 1: Shows socio-demographic characteristics of the studied patients, more than one-third of them (34 % & 39.6 %) their age was 55 and more years old and their educational level was university level respectively. Regarding their occupation, more than two-thirds (62.3%) were unemployed, while more than one half (54.7 %) were female and more than two thirds (77.4 %) were married of them.

**Table 2: Percentage distribution of studied patient during hospitalization admission.**

<i>Items</i>	<i>Total No =212</i>	<i>%</i>
<b>Department of admission</b>		
▪ Surgical ward	116	54.7
▪ Medical ward	96	45.3
<b>classification of departments</b>		
▪ General surgery	76	35.8
▪ Orthopedic surgery	40	18.9
▪ Endocrine (medical)	40	18.9
▪ Urology (medical)	20	9.4
▪ Chest (medical)	16	7.5
▪ Hematology (medical)	20	9.4
<b>Hospital room</b>		
▪ Single room	36	17.0
▪ Double room	112	52.8
▪ >double room	64	30.2
<b>Hospitalization length of stay</b>		
▪ Days (1- 6)	144	67.9
▪ Week	28	13.3
▪ Weeks (2-3)	16	7.5
▪ Month	24	11.3

Table 2: Shows that more than half of patients (54.7%) were in the surgical ward, about the classification of department, more than one-third of them (35.8%) were from general surgery while more than half of them were in a double room, additionally, 67.9 % of the patients' hospitalization length of stay was from 1 to 6 days

**Table 3: Health / illness related factors that affect the sleep-quality of studied patient's**

<i>Items</i>	<i>Yes</i>		<i>No</i>		<i>Mean ± SD</i>
	<i>No =212</i>	<i>%</i>	<i>No =212</i>	<i>%</i>	
Chronic pain	152	71.7	60	28.3	0.717±0.451
Require more sleep than normal	92	43.4	120	56.6	0.434±0.496
Arthritis	72	34	140	66	0.339±0.474
Cardiovascular disorders	32	15.1	180	84.9	0.150±0.358
Pulmonary disease	44	20	161	79.2	0.207±0.406
GIT disorders	72	34	140	66	0.339±0.474
Diabetic	72	34	140	66	0.339±0.474
Neurodegenerative disorder	28	13.2	184	86.8	0.132±0.339
Genitourinary disorder	40	18.9	172	81.1	0.188±0.392
Pain related to medical management	141	67.9	68	32.1	0.679±0.467
Smoking	36	17	176	83	0.169±0.376

Table 3: Regarding the Health/illness-related factors which affected the sleep quality of studied patients; it was noticed that the most common factors were chronic pain and pain related to medical management (71.7 % & 67.9 %) respectively, while the minority of factors (13.2 %) that affect the sleep quality were neurodegenerative disorders.

**Table 4: Environmental related factors that affect the sleep-quality of studied patient's**

Items	Yes		No		Mean ± SD
	No =212	%	No =212	%	
Often disturbed from health care team	116	54.7	96	45.3	0.57±0.498
Do you suffer from extreme temperature?	48	22.6	164	77.4	0.226±0.419
Do you suffer from noise?	88	41.5	124	58.5	0.415±0.493
Do you suffer from light levels?	76	35.8	136	64.2	0.358±0.480
Do you suffer from lack of ventilation?	80	37.7	132	62.3	0.377±0.485
Do you suffer from place discomfort?	116	54.7	96	45.3	0.547±0.498
Size of bed unsuitable?	56	28.4	156	73.6	0.264±0.441
Lack of exposure to sunlight?	48	22.6	164	77.4	0.226±0.419
Persons around a patient who snores.	48	22.6	164	77.4	0.226±0.419
Do you have different on sleeping habits?	84	39.6	128	60.4	0.396±0.490

Table 4: show Environmental related factors that affect the sleep of studied patient's, it found that the most affecting factors were health care team and place discomfort (54.7%) while an equal percentage (22.6%) of these factors were extreme temperature, exposure to sunlight & Persons around a patient who snores.

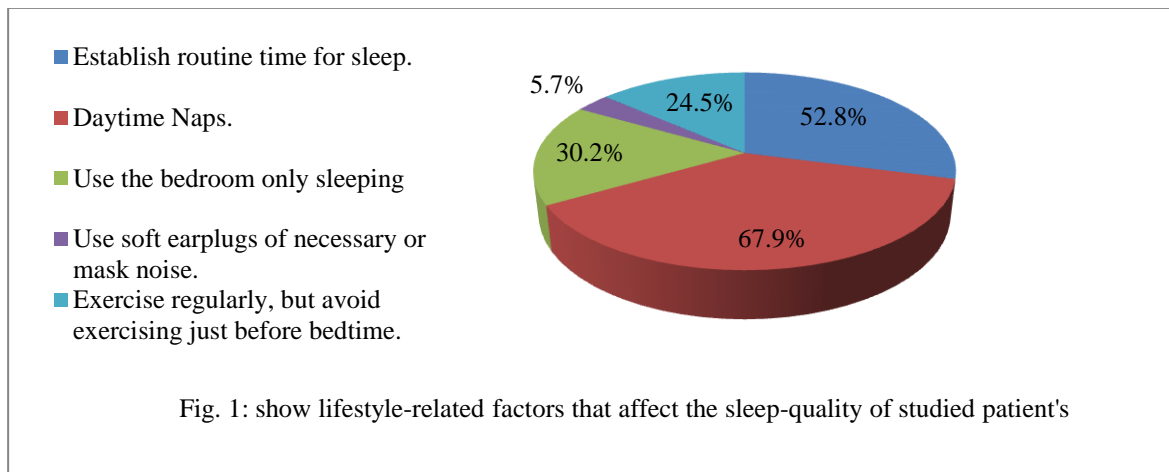


Fig.1: show Lifestyle-related factors that affect the sleep-quality of studied patient's, it was observed that, the most affect factors related to Lifestyle were daytime naps and establish a routine time for sleep (67.9 & 52.8 %) respectively, while the minority of them used soft earplugs if necessary or mask noise (5.7 %).

**Table 5: Emotional, Diet, and stimulation related factors that affect the sleep-quality of studied patient's**

Items	Yes		No		Mean ± SD
	No =212	%	No =212	%	
<b>Emotional related factors</b>					
Change of residence.	128	60.4	84	39.6	0.603±0.490
Hospitalization.	164	77.4	48	22.6	0.773±0.419
Hyperarousal	108	50.9	104	49.1	0.509±0.501
Avoid engaging in a stressful activity or unpleased tastes near bedtime	76	35.8	136	64.2	0.358±0.480
<b>Diet related factors</b>					
Eating large meals immediately before bedtime.	56	26.4	156	73.6	0.264±0.441
Fluid intake before bedtime.	68	32.1	144	67.9	0.320±0.467
<b>Stimulation related-factors</b>					



Take power during before bedtime.	48	22.6	164	77.4	0.226±0.419
Take caffeine or other stimulants.	72	34	140	66	0.339±0.474
Smoking before bedtime.	40	18.9	172	81.1	0.188±0.392
Any motivation activities before bedtime.	48	22.6	164	77.4	0.226±0.419

Table 5: reveals that the most common emotional related factors were hospitalization and change of residence (77.4% & 60.4%) respectively, However, nearly one-third ( 26.4 % & 32.1 %) of studied patients eating large meals immediately before bedtime and take Fluid. Regarding Stimulation related factors, more than one-third of them (34 %) took caffeine or other stimulants while 18.9 % of them were Smoking before bedtime.

**Table 6: Medication-related factors that affect the sleep-quality of studied patient's**

Items	Yes		No		Mean ± SD
	No =212	%	No =212	%	
Diuretics	72	34	140	66	0.339±0.474
Antidepressants	4	1.9	208	98.1	0.018±0.136
Anticholinergics	8	3.8	204	96.2	0.037±0.191
Bronchodilators	40	18.9	172	81.1	0.188±0.392
Decongestants	40	18.9	172	81.1	0.188±0.392
Beta-blockers	52	24.5	160	75.5	0.245±0.431
Narcotics	28	13.2	184	86.8	0.132±0.339

Table 6: in relation to medication-related factors that affect the sleep-quality of studied patient's, it was found that more than one-third of studied patients (34 %) were using diuretics while nearly quarter of patient (24.4%) were using beta-blockers and 18.9 % of them were use bronchodilators and dehumidifiers

**Fig: 2: The total score for Sleep- quality questionnaire for studied patients**

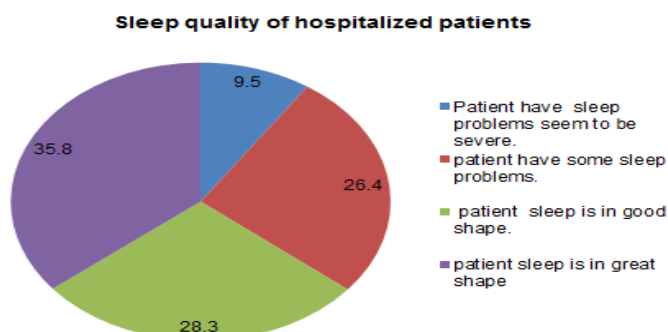


Fig 2: shows that total score of sleep quality for studied patients (9.5 %) had sleep problems seem to be severe while more than one quarter (26.4 %) of them had some sleep problems.

**Table 7: Correlations between sleep-quality and sociodemographic characteristics regarding age, gender and hospitalization admission process for studied patients**

Items	Age	Gender	Department of admission	Name of department	Hospital length	Hospital room
Sleep-quality	r= -0.146 p 0.034 S	r= 0.150 p 0.030 S	r= -0.235 p 0.001 HS	r= 0.364 p 0.000 HS	r= -0.316 p 0.000 HS	r= -0.206 p 0.003 HS

Table 7: shows that there was highly statistically significant correlation between the sleep-quality for studied patients and department, name of department, hospital length and hospital room while there was a statistically significant correlation between the age and gender with sleep-quality.

**Table 8: Correlations between sleep-quality and total factors effect on sleep quality for studied patients**

items	Health/illness F.	Environmental factors	Lifestyle factors	Emotional factors	Diet factors	Stimulation factors	Medication factors
Sleep-quality	r= -0.26 p 0.000 HS	r= 0.173 p 0.012 HS	r= -0.042 p 0.546 NS	r= -0.628 p 0.000 HS	r= -0.094 p 0.174 NS	r= -0.061 p 0.378 NS	r= -0.067 p 0.331 NS

Table 8: reveal that there was a highly statistically significant positive correlation between the sleep-quality for studied patients and health & illness, environmental, and emotional factors while there was no statistically significant correlation between the sleep-quality, and Lifestyle, diet, stimulation and medication factors

#### IV. DISCUSSION

In studies that assess factors affecting sleep-quality for patients in medical and surgical departments. Sleep-associated problems cause morbidity, increase in mortality and decreased life quality [21] Sleep quality comprises concepts such as sleep latency, regular sleep routine, and total sleep duration. Sleep quality is essential as it is an indicator of many diseases [22] [23] Decreased sleep quality may cause emotional, mental, and motivational disorders.

In the current study, it was detected that socio-demographic characteristic of the studied patients, more than one-third of them their age from 55 - more years old with more than one half of them were female and their educational level was university level. These results were incongruent with [24] who were noticed that the majority of patients were male, their age was between (50 to 60) years old.

Regarding occupation and marital status, this study found that more than two-thirds of studied sample was unemployed and married, These results agreed with [24] who studied factors associated with sleep pattern disturbance among patients in critical care units and institute that the majority of the study samples were educated and married respectively.

The current study findings revealed that more than half of the patients were in the surgical ward and a double room, about the classification of the department, more than one-third of them were from general surgery, which more than two-thirds of the duration in hospital from 1 to 6 days. these results agree with [14] who studied factors affecting the sleep status of surgical and medical patients at a University Hospital of Turkey, who conclude that there were fifteen each from the surgery and medical clinics and more than two-thirds of them stayed at the hospital for less than 5 days and more than thirty quarters stayed in double rooms.

Regarding the Health/illness-related factors which affected sleep quality of studied patient's, the results found that the majority of study patients were pain related to medical management and more than two-third were chronic pain, this finding in the same line with [24] who reported that, the majority of common factors were pain effects on sleep.

The present study showed that more than half of the health care team and place discomfort while more than fifths of these factors were extreme temperature, exposure to sunlight & Persons around the patient who snores from environmental-related factors that affect the sleep quality of studied patient's, these results were in accordance with [25] who there were found that, environmental factors (e.g nursing care interruptions, lighting, noise,) were more frequently cited causes of poor sleep than medical acuity, while unlike [26] who report that hospital environments can be quite noisy and special care needs to be taken to reduce noise in the hallways and nursing care units, while

In the same line, the current finding agrees with [26] who reported that discomfort from environmental temperature and lack of ventilation can affect sleep, light levels can be another factor. A person accustomed to darkness while sleeping may find it difficult to sleep in the light. Another influence includes the comfort and size of the bed. Persons have different sleep habits as snores, or other sleep troubles may become a problem for the person also.

In the present study, related to lifestyle factors that affect the sleep quality of studied patient's, which that more than two thirds of them were daytime naps and more than half of them were established routine time for sleep, this finding agree with [27] who reported that lifestyle factors include excessive underexposure to daytime sunlight and nighttime light pollution can lead to interference of daily rhythms.



In addition to lifestyle factors, the results revealed that more than one fifth from studied patients was exercise regularly before time sleep, this finding agrees with [26] who reported that lifestyle includes an irregular morning and nighttime schedule can affect sleep. Average exercise in the morning or early afternoon usually is beneficial to sleep, but exercise late in the day can delay sleep.

Regarding stimulation related factors the results in this study revealed that more than one-third of them were taken caffeine or other stimulants while less than one-fifth of them were Smoking before bedtime. this result agreed with [1] who found that smokers had a lower sleep quality than the non -smokers. [28] Showed that most of the smokers in their study intended to smoke at night and before sleep. Nicotine in cigarettes can reason sleep problems and thus reduce sleep quality. The relationship between sleep disorder and cigarette smoking has been recorded in another study [29] who reported that smoking cessation may reduce sleep disorder and improve sleep quality in these patients.

The results of this study concerned with medication-related factors that affect the sleep of studied patients, it was found that more than one third of studied patients were using diuretics while nearly quarter of patient use Bata blockers and less than of fifth of them were used bronchodilators and dehumidifiers. This finding as the same with [30] who showed that the use of angiotensin-converting enzyme inhibitors might accelerate sleep-disordered breathing. The use of anti-hypertension was one of the sleep disturbance predictors in patients with hypertension as reported by [31]. Also, in several studies found relationships between the uses of diuretics, beta-blockers, and sleep problems.

The present study showed that nearly one third of studied patients had eaten large meals immediately before bedtime and drink fluid, the findings of this study agree with [32] who reported that tips for establishing healthy sleep hygiene, such as refraining from eating large meals near bedtime and avoiding reading or watching TV in bed.

For the current study revealed that total sleep quality of studied patients more than one-quarter of them had some sleep problems. This finding like with [15] reported that adequate sleep quality is important for optimum human health. Excessive daytime sleepiness is a major public health problem associated with poor job performance, reduced ability to handle daily stressors.

The findings of the present study were found that there was highly statistically significant correlation between the sleep-quality for studied patients and department, classification of department, hospital length of stay and hospital room while there was statistically significant correlation between the sleep-quality and age and gender, this finding agree with [6] and [33] also showed that sleep quality was poorer in the patients with longer durations of hospitalization. In contrast, [11] who study confirmed no significant correlation between the quality of sleep and the duration of hospitalization. However, patients with more problems are likely to have longer hospital stays, and length stays in the hospital separate them from their natural environment of home and cause more stress by interrupting their normal life. in addition to [1] who found that There was a positive and significant relationship between sleep quality and sleep duration.

As the same line [34] reported that Individuals who are hospitalized and worried about the disease generally meet an unknown environment, unfamiliar noises and undergo painful or uncomfortable diagnosis and treatment procedures in addition to the disease. Therefore, their sleep- quality is affected and their sleep patterns changes.

The current study results revealed that there was a highly statistically significant positive correlation between the sleep-quality of studied patients and health & illness factors, environmental factors, and emotional factors while there was no statistically significant correlation between the sleep- quality pattern and Lifestyle factors, diet factors, stimulation , and medication factors, this finding agreed with [26] reported that the environment can promote sleep. The person must be able to attain a state of relaxation previous to entering a period of sleep, in the environment can inhibit sleep. The absence of stimuli or the presence of unaware stimuli can prevent people from sleeping.

As regarding emotional factors agree with [26] found that Stress is considered by most sleep experts to be the number one cause of short-term sleeping difficulties. A person preoccupied with personal problems may be unable to relax sufficiently to get to sleep. Anxiety increases the norepinephrine blood levels through stimulation of the sympathetic nervous system, addition unlike with [35] reported that a significant positive relationship between sleep quality and drugs was obtained.

In another view [36] reported that The quality of sleep may be evaluated by many factors from an objective and a subjective point of view. Objective sleep quality mentions to how difficult it is for a person to fall asleep and remain to

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sleep, and how many times they wake up during a single night. Poor sleep quality disorders the cycle of change between the different stages of sleep [37] Subjective sleep quality in turn refers to a sense of being rested and reestrating after awaking from sleep.

**V. CONCLUSION**

The quality and quantity of sleep can have a significant impact on a person's wellbeing and quality of life. There are many reasons why patients have sleep problems or a change in their sleep quality, and there is often more than one contributing factor, including: health/ illness, Environment, Lifestyle, Emotional /Stress, Diet, Stimulation, and administer medication through the day effect on sleep

Based on the findings of the current study, it can be concluded that hospitalized patients changes in sleep routines and poor- sleep quality and disruptions are common problems among patients in the hospital. This problem is related to many factors as health & illness factors, environmental factors, emotional factors, Lifestyle factors, diet factors, stimulation factors and medication factors

**VI. RECOMMENDATION**

The following recommendations are formulated based on the results of the study:

- Procedures and nursing care plan must be organized as possible at the day time to eliminate the interruption for patients at night.
- Health care team must be aware of their sounds and avoid conversations at night beside the patient.
- It is recommended to conduct this study on large sample with different geographical characteristics.
- Periodic in service – training advanced nursing care programs based on best practice guidelines to improve patient sleep quality.
- Health care team - nurses being in the first place - should be more sensitive to the sleep disturbances and the factors that affect sleep.

**AUTHOR CONTRIBUTIONS**

EH, and LA, developed the interview for data collection. EH, and LA, conducted the analysis. EH, and LA, provided overall supervision. EH, and LA, took the main responsibility for drafting of the manuscript. All authors read and approved the final manuscript.

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