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Factors Affecting Sleeping Pattern with Reflection on Quality of Life among Patients with Chronic Heart Failure

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Abstract: **Sleeping is a basic and vital human need. It affects different dimensions of individuals' quality of life and health. There are several factors affecting sleeping pattern as; some chronic disease e.g. chronic heart failure which might be associated with disturbances of sleeping pattern. So, it is essential to identify these factors in order to specify the avoidable ones and make a corrective nursing action to control over them with a final aim of improving patient's quality of life. Accordingly, this study is aiming to identify factors affecting sleeping pattern with reflection on quality of life among patients with chronic heart failure. A descriptive correlational research design was adopted. A purposeful sample including 59 patients was recruited from one of the Teaching Hospitals in Cairo according to inclusion and exclusion criteria. Three tools were used: First: Patient's demographic data assessment tool. Second: Sleeping pattern and factors affecting it assessment tool, and third: Patient's quality of life assessment tool.**

Results: proved that, slightly more than one tenth of the studied sample had very good sleeping pattern, while approximately one third had fairly good sleeping pattern, and the rest had either fairly bad or very bad sleeping pattern. The most important factors that affect sleeping pattern and could be avoided are types of medication and their schedule, as well as environmental factors. However, the most dominant non-avoidable factors that affect sleeping pattern were breathing related complaints. Finally, a positive highly statistically significant relation was proved between total quality of sleeping pattern and total quality of life among patients. This study concluded that, there are non-avoidable and avoidable factors which affected negatively on the patient's sleeping pattern. The avoidable factors could be properly managed to improve the patients' sleeping pattern and improve their quality of life. Based on the findings of this study, it is recommended to deliver awareness sessions for the nurses regarding the importance of assessing factors affecting sleeping pattern negatively in order to develop corrective actions aiming to support patients and their families. It is also recommended to repeat the study on a wider scale in order to make generalization of the findings.

Keywords: **Factors affecting - sleeping pattern- Quality of life - Chronic heart failure.**

1. INTRODUCTION

Nowadays there is increasing in recognition that disturbance of sleeping pattern and reduced amount of sleeping can have significant effect on humans. Poor quality of sleeping pattern can clearly result in daytime sleepiness ***(Badran et al., 2015***). Healthy individuals should fall in asleep within 5-10 minutes after switching off the light, and it is recommended having at least seven hours of sleeping per day for adults. However, individuals' sleeping needs differ in relation to age, gender, nutrition, activity, health status, environment, individual features and genetic inheritance ***(Ölmez et al., 2015***; ***Borji et al., 2017)***.

Chronic heart failure is a major health problem. Up to 70% of patients with chronic heart failure report problems with sleeping. Therefore, regular assessment of sleeping pattern and functional capacity for patients with chronic heart failure

has become vital issue in order to recognize patients at risk and provide a better guide to therapeutic procedures for effective rehabilitation in order to improve sleeping pattern. It is now evident that the treatment of sleeping pattern disturbance requires a multidisciplinary approach to enhance patient's prognosis ***(Badran et al., 2015; Awotidebe et al., 2017)***.

Currently, with increased life expectation, chronic heart failure has been identified as a major health problem. The people suffering from chronic heart failure should change their role as a healthy individual into a patient. The incidence of disturbance of sleeping pattern and its causes in patients with chronic heart failure have paying attention of many researchers in the past 10 years. Disturbances of sleeping pattern are common in patients with chronic heart failure and this problem has been reported by most of patients with chronic heart failure. As well, high prevalence of disturbances of sleeping pattern among patients with chronic heart failure is associated with physical, behavioral, and psychological problems which might reflect negatively on quality of life among those patients ***(Parvan et al., 2013; Kazmierczak et al., 2013).***

Disturbances of sleeping pattern could lead to a significant effect on patients' daily activities, tasks and responsibilities. Moreover, it may affect functional performance among patients with chronic heart failure that lead to feeling of fatigue and confusion and development of poor health status and worsening patient's prognosis ***(Moradi et al., 2014; Abera et al., 2015).***

Although, disturbance of sleeping pattern is one of the most common complaint among patients with chronic heart failure, there are some measures that could be done to overcome the factors that might lead to such disturbances as; adjustments of lifestyle habits that could greatly improve quality of sleep, especially when they are done along with medical treatments ***(Roddick & Cherney, 2016; Sable et al., 2017).***

Health team members especially nurses are usually focused on diagnosing and managing physical signs and symptoms. However, it is recently recognized that the physical, psychological and social aspects of a patient's life are important issues to consider when caring for patients with chronic heart failure and have sleeping pattern disturbances. The nurse has an essential role among a multidisciplinary heath team who is responsible for identifying patients complaint and caring them to achieve optimal care. Preserving sleeping pattern should be considered the top of nurse's priorities while caring for patients who have such problem. The nurse should be aware to identify patients at risk for disturbances of sleeping pattern, so the nurse will be able to arrange for proper interventions in order to overcome any sleeping pattern disturbances ***(Motron & Fontaine, 2013; Moon et al; 2015).***

Nurses play an important role in identifying factors affecting sleeping pattern among patients with chronic heart failure. In order to improve sleeping pattern and quality of life for those patients, medical team and specially nurses should act on physical, psychosocial, and environmental factors that might have an effect on sleeping pattern among those patients. In addition, there are several nursing interventions that could be done for those patients as; non-pharmacological interventions that could include daytime physical activities with attempts to keep patients out of bed, with afternoon bright light exposure, and a consistent bedtime routine. Moreover, there are some behavioral treatments that could be done as encouraging sleep hygiene, control of any stimulus that could affect sleeping pattern, and finally adopting some of relaxation training techniques ***(Taha & Ali, 2015; Atalla, et al., 2017).***

Significance of the Study:

Chronic heart failure is a leading cause to high level of sleeping pattern disturbances. These disturbances are the most frequently reported complaint of patients with chronic heart failure. Prevalence of sleeping pattern disturbances among patients with chronic heart failure is 50-82% ***(Baniak & Chasens, 2017).*** Disturbances of sleeping pattern among patients with chronic heart failure are still need more attention by health team members, especially nurses. Nurses should acquire relevant knowledge for assessing this problem and then providing the patients prophylaxis measures and treatment for such problem. Recognizing the physiological process of the sleep cycle, rest and ways to encourage relaxation and sleep, as well identifying factors which could lead to sleeping pattern disturbances among patients with chronic heart failure, and its consequence on their quality of life is necessary in order to plan proper treatment that is applicable to the multiple dimensions ***(Santos et al., 2011).***

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Aim of the Study

This study is aiming to identify the factors affecting sleeping pattern with reflection on quality of life among patients with chronic heart failure.

Research Questions:

1. What is the sleeping pattern among patients with chronic heart failure?
2. What are the avoidable and non-avoidable factors affecting sleeping pattern among patients with chronic heart failure?
3. What is the type of relation between quality of life and sleeping pattern among patients with chronic heart failure?

2. MATERIALS & METHODS

Study Design, and Setting

A descriptive correlational research design was used. This study conducted in different medical wards in one of the Teaching Hospitals in Cairo, the hospital name was kept considering ethical aspects of hospital request. The study period started from January 2017 and completed by February 2018.

Sample Type and Criteria

A purposeful sample was used to recruit 59 patients, with chronic heart failure, in the study according to the following **inclusion criteria**; patients who are medically diagnosed with chronic heart failure for not less than 6 months, patients free from any other medical condition that might affect sleeping pattern, can read and write, with different age groups of both genders, and different educational levels. **Exclusion criteria;** patients who have acute heart failure, diabetes, renal/liver diseases, patient with serious psychiatric diseases or any other life threatening diseases were excluded from the study.

Sample Size:

The total selected sample according to the inclusion criteria was 70 patients, i.e. seven patients 10% who participated in the pilot study were excluded from the main study sample, and the number of the patients who had participated in the main study was 63 patients, four of them were dropped out throughout the study process due to severe deterioration in their medical condition. The total number of the patients who continued the study was 59 patients.

Data Collection Tools:

Three tools were utilized to collect data:

First tool: **Patient's demographic data assessment tool.**

Developed by the researcher it was used to assess age, gender, marital status, educational level, and employment status, type of job, and health insurance status, and duration of having chronic heart failure.

Second tool: **Sleeping pattern and factors affecting it assessment tool**.

Adopted from ***Buysse et al., (1989)***, it contains 18 assessment items, divided into 2 parts:

Part (1): to assess quality of sleeping pattern among patients with chronic heart failure through 7 assessment components as follows; Subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication and daytime dysfunction.

Scoring system of this part was done as follows; Scores of each component ranges between (0-3) 0= very good, 1=fairly good, 2=fairly bad, 3= very bad. The lowest grade indicates very good quality of sleeping pattern, and the highest grade indicates very bad quality of sleeping pattern.

Part (2): To assess non-avoidable and avoidable factors that might affect sleeping pattern, the non-avoidable factors are: breathing related complaints as dyspnea, orthopnea, chest pain, and tachycardia, patient's physical complaints as general

weakness, activity intolerance, and lower limbs edema. The avoidable factors are; environmental factors such as; effect of light, noise, movement around the patient, temperature of surrounding environment, medication types and their schedule such as, tranquilizers, diuretics, and other drugs, drinking caffeine products before sleeping time and eating at late time.

Third tool: Quality of Life Assessment Tool.

Adopted from ***Ferrans and Powers (1985)***, it was used to assess quality of life among patients with chronic heart failure. This tool consists of 30 assessment items, which are grouped into 4 domains; **First domain** is related to health function status (13 assessment items). **Second domain** is linked to patient's social and economic status (6 assessment items). **Third domain** is related to patient's psychological, spiritual status (6 assessment items). **Fourth domain** is concerned with family status (5 assessment items).

The patient's responses were scored by using three levels of Likert scale as follows; the total patient's responses ranged between (30-90). If the patient's responses ranged between (61-90), this indicates that patient had good quality of life. If the patient's responses allocated at 60, this indicates that the patient had good quality of life to certain extent. If the patient's responses ranged between (30-59) this indicates that the patient had poor quality of life.

Tools Validity and Reliability:

Data collection tools were reviewed for content and shape validity by a jury of 3 specialists in the field of Medical Surgical Nursing and Cardiology medicine to ascertain relevance and completeness. Reliability of data collection tools was tested by using Cronbach's Alpha coefficient test, which showed that the tools entailed of relatively homogenous items as showed by the moderate to high reliability of each tool. The internal consistency of sleeping pattern assessment tool was 0.90; and quality of life assessment tool was 0.97.

Ethical Considerations

Before starting data collection process, an informed consent was obtained from each of the patients who agreed to participate in the study who signed it, after explaining the purpose of the study as well as tools of data collection. Confidentiality was guaranteed during the study period, and patients were assured that all data collected will be used only for the study purpose, and without any harmful matter that could affect anyone. Each patient was informed that contribution in the study is voluntary and that they have the right to withdraw from the study at any stage without giving any reason.

Pilot Study:

The pilot study was carried out on 10% from the total number of the sample (7 patients) to assess clarity, feasibility and the applicability of the tools, and to find out the possible difficulties that might face the researchers and hinder data collection. As well, the time needed to fill in the data collection tools was estimated. Those patients who participated in the pilot study were excluded from the main study sample since some modifications were done.

Field Work:

The present study was conducted after obtaining approval from the Dean of the Faculty of Nursing in the British University in Egypt, and Research Ethical Committee in the Faculty, as well from the hospital director.

Process of Data Collection:

In this phase the researchers assigned 2 demonstrators as research assistants from the Faculty of Nursing to interview the patients face-to-face- as they were distributed in the two medical wards, and they were supervised by the researchers. The data collection process was arranged with the nursing director as follows; Nursing Director agreed with the researchers to inform them when any new patient, diagnosed with chronic heart failure is admitted to the hospital and matching inclusion and exclusion criteria, accordingly the researchers asked the assigned demonstrators to visit the hospital whenever, new patients were admitted, when the demonstrators met the patients they explained to them the aim of the study and data collection tools, and interviews were done with the patients as arranged. This arrangement remained like that, till completing the number of the study sample during a period of 14 months, and the three tools were filled in within 60 minutes, as each tool took 20 minutes.

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Statistical analysis

Statistical analysis was done through a computer using a software, the Statistical Package for Social Sciences (SPSS), version 20 that was used for this purpose. Descriptive statistics were applied (Mean, Standard Deviation, Frequency and Percentage) Test of significance (Chi-Square) was used to test significance between variables. A statistically significant difference was considered at $P \leq 0.05$, and a highly statistically significant difference was considered at $P \leq 0.01$.

3. RESULTS

Table (1): Demographic Characteristics of the Patients included in the Studied Sample (n=63= 100%).

Item	No.	%
Gender		
Male	36	57.2
Female	27	42.8
Age (in years)		
30 – <40	11	17.5
40– <50	36	57.2
51 +	16	25.3
$\bar{x} \pm SD$ 5.8 ± 46		
Marital status		
Single	6	9.5
Married	51	81
Widowed	6	9.5
Educational level		
Read and write	16	25.3
Intermediate	24	38.2
Above intermediate	23	36.5
Employment status		
Free work	16	25.3
Governmental job	34	54.0
No working	13	20.7
Type of job		
Full time	34	54.0
Part time	15	23.8
No job	14	22.2
Health insurance coverage status		
Private health insurance	21	33.3
Public health insurance	35	55.6
Self-expenses	7	11.1
Present medical history		
6 months to 1 year	7	11.1
1 year to 2 years	22	34.9
More than 2 years	34	54.0

NB: 3 patients were dropped out from the study … so the total number who continue till end of the study was 59

Table (1) presents that, an equal percentage representing 57.2% were males and in the age group 40-< 50 years, with the majority (81%) were married. More than half of the studied sample (54%, 54%, & 55.6%) had governmental job, full time work and public health insurance coverage respectively. Considering present medical history, 54% of the studied sample had a medical history of more than two years.

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Table (2): Sleeping Pattern Levels among Patients under the Study (n=59)

Sleeping pattern assessment items	Very good		Fairly good		Fairly bad		Very bad	
	No.	%	No.	%	No.	%	No.	%
Subjective sleep quality	2	3.4	23	39	20	33.9	14	23.7
Sleep latency	1	1.7	15	25.4	25	42.4	18	30.5
Sleep duration	4	6.8	18	30.5	29	49.2	8	13.6
Habitual sleep efficiency	39	66.1	12	20.3	6	10.2	2	3.4
Sleep disturbances	0	0	11	18.6	29	49.2	19	32.2
Use of sleeping medication	0	0	27	45.8	16	27.1	16	27.1
Daytime dysfunction	0	0	34	57.6	22	37.3	3	5.1
Total sleep pattern = 59*7= 413	**46**	**11**	**140**	**34**	**147**	**35.6**	**80**	**19.4**

The finding of the current study in table (2) shows that, very good and fairly good sleeping pattern among the studied sample represent only 11% and 34% respectively, while, fairly bad and very bad sleeping pattern represent 35.6% and 19.4% respectively. Noticing that, the lowest patient's score indicates good sleeping pattern.

Table (3): Avoidable and Non-avoidable Factors affect Sleeping Pattern as Reported by the Patients under the Study (n=59)

Factors	No.	%
Non- avoidable factors:		
• **Different breathing related complaints as**: dyspnea, orthopnea, chest pain, and tachycardia.	59	100
• **Different general physical related complaints** as: general weakness, activity intolerance, edema of lower limbs, and others	39	66
Avoidable factors:		
• **Environmental related factors as:** light, and noise.	32	54
• **Medication types and their schedules:** diuretics	52	88.1
• **Life style habits could affect sleeping as:** drinking caffeine products before sleeping, and eating at late time	40	67

Table (3) reveals that, the most non-avoidable dominating factors among the studied sample were breathing related complaints, as dyspnea, orthopnea, chest pain, and tachycardia. However, the most common avoidable factors representing 88.1%, 67%, and 54% were medication types and their schedules, as diuretics and lifestyle habits that could affect sleeping and environmental factors respectively.

Table (4): Distribution of Quality of Life Domains among Patients under the Study (n=59)

Quality of life assessment domain	Good quality of life		Good to certain extent		Poor quality of life	
	No	%	No	%	No	%
Health and functional domain **Total No. of responses in this category = 13 * 59 = 767**	36	4.7	330	43	401	52.3
Social and economic domain **Total No. of responses in this category = 6 * 59 = 354**	54	15.2	133	37.6	167	47.2
Psychological spiritual domain **Total No. of responses in this category = 6 * 59 = 354**	106	29.9	149	42.2	99	27.9
Family domain **Total No. of responses in this category = 5 * 59 =295**	134	45.4	114	38.6	47	16
Total responses 30*59= 1770	**330**	**18.6**	**726**	**41**	**714**	**40.4**

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In relation to quality of life among patients with chronic heart failure, table (4) reveals that, 18.6%, 41%, and 40.4% of the studied sample had good quality of life, good quality to certain extent, and poor quality of life respectively.

Table (5): Relation between Quality of Life and Overall Quality of Sleeping Pattern in the Patients under the Study (n=59)

Total quality of life	Total Quality of sleeping pattern								X^2	P value
	Very good		Fairly good		Fairly bad		Very bad			
	No. 46	% 11	No. 140	% 34	No. 147	% 35.6	No. 16	% 27.1		
Poor quality	7		14		0		0		78.717	0.000** Highly significant
Good to certain extent	0		6		18		0			
Good quality	0		0		3		11			

In table (5) the finding of the present study stats that, there was a highly statistically significant relation between total quality of sleeping pattern and total quality of life among patients in the study sample at P=0.000.

Table (6): Relation between Demographic Characteristics of the Patients under the Study and Quality of their Sleeping Pattern (n=59)

Items	Very good		Fairly good		Fairly bad		Very bad		X^2	P-Value
	No. 46	% 11	No. 140	% 34	No. 147	% 35.6	No. 80	% 19.4		
Gender Male	2	5.5	14	38.8	14	38.8	6	16.6	4.252	0.236
Female	5	18.5	6	22.2	7	25.9	5	18.5		
Age (in years) 30 – < 40	4	36.3	2	18.1	0	0.00	1	9	47.034	0.512
40 – <50	3	8.3	12	33.3	15	41.6	6	16.6		
51 +	0	0.00	6	37.5	6	37.5	4	25		
Marital Status Single	0	0.00	2	33.3	0	0.00	0	0.00	7.911	0.245
Married	7	13.7	16	31.3	17	33.3	11	21.5		
Widowed	0	0.00	2	33.3	4	66.6	0	0.00		
Educational level Can read and write	1	6.2	0	0.00	5	31.2	6	37.5	15.438	0.017*
Intermediate	2	8.3	9	37.5	10	41.6	3	12.5		
Above intermediate	4	17.3	11	47.8	6	26	2	8.6		
Employment status Free work	2	12.5	2	12.5	4	25	4	25	14.332	0.026*
Governmental job	4	11.7	17	50	11	32.3	2	5.8		
No working	1	7.6	1	7.6	6	46	5	38.4		
Type of job Full time	3	8.8	14	41	11	32.3	2	5.8	10.018	0.124
Part time	3	20	4	26.6	4	26.6	4	26.6		
No job	1	7.1	2	14.2	6	42.8	5	35.7		
Health insurance status Private	1	4.7	2	9.5	9	42.8	9	42.8	20.00	0.003*
Public	5	14.2	16	45.7	12	34.2	2	5.7		
Self-expense	1	14.2	2	28.5	0	0.00	0	0.00		

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In table (6) the findings of this study reports that, there were statistically significant relations between quality of sleeping pattern and educational level, employment status, and health insurance status among patients in this study at $P \leq 0.017$, 0.026, and 0.003 respectively.

4. DISCUSSION

It is known that disturbances of sleeping pattern have adverse effects on the physical, psychological and social performance of patients with chronic heart failure. These disturbances could negatively affect patients' quality of life as well. Such disturbances are also known by their effect on self-care and increase risk for patients to be admitted in the hospital frequently.

The present study proved that, more than half of the studied sample had fairly bad and very bad sleeping pattern. This is could be explained by that; patients with chronic heart failure are experiencing difficulty of breathing related complaints as dyspnea, or orthopnea, or chest pain or tachycardia and they are not aware how they can overcome these complaints. This result is in agreement with ***Sharma et al. (2010)***; ***and Awotidebe et al. (2017)***, who mentioned that, patients with chronic heart failure have poor sleeping pattern and depressive symptoms that lead to lack of sleeping, as well, they are experiencing several signs and symptoms as breathing disorders.

With regard to factors that might lead to disturbances of sleeping pattern, the result of this study stated that, the entire studied sample complain of non-avoidable factors such as; breathing related complaints as; dyspnea, orthopnea, chest pain and tachycardia. This could be attributed to that some factors might have significant effect on sleeping pattern as breathing disorders that might lead to feeling of discomfort which leads to negative consequences on the patients' ability to fall asleep. Other different general related complaints as; general weakness, activity intolerances, edema of lower limbs and others were reported by almost two thirds of patients with chronic heart failure disease under study.

This finding is supported by ***Azevedo et al., 2015)***, ***and Mohsen et al. (2015)***, who reported that, dyspnea is a common complaint among patients with chronic heart failure as well those patients have sleep physiology alterations, intense fatigue, and chest pain, and all these factors might lead to disturbances of sleeping pattern among patients with chronic heart failure.

Meanwhile, the majority of the studied patients complain of avoidable factor such as types of medication as; diuretics, and different life style habits as drinking caffeine products before sleeping. This may be due to that, patients may experience frequent micturition due to taking diuretics at late time, which make them wake up at night and have frequent visits to the toilet, which did not allow them to have adequate sleep, leading to disturbance of their sleeping pattern. This result ***is supported by Heffron, (2013) and Moradi et al. (2014)***, who mentioned that, most patients using diuretics had poor quality of sleeping pattern, as medications such as diuretics cause urination and nocturnal enuresis. As well, caffeine products might have a disturbing effect on persons' sleeping pattern, and the stimulant effect, present in coffee, could lead to difficulty to fall asleep.

With regard to quality of life among patients with chronic heart failure, results of the current study proved that, slightly more than two fifth of the studied sample had poor quality of life. This could be attributed to that; patients with chronic heart failure experience a lot of physical complaints that might affect their daily living activities and general physical body functions. This result is in agreement with ***Niemen et al. (2015)***, who stated that, chronic heart failure has very serious effect on patients' quality of life and it affects quality of life more profoundly than other chronic diseases.

This study finding stated that, there was highly statistically significant relation between quality of sleeping pattern and total quality of life of those patients who have chronic heart failure. This finding could be explained as; patients who suffer from disturbance of sleeping pattern cannot live normally as healthy people, as they have many health problems that might affect their daily life. In the same line with this finding ***Azevedo et al., (2015)***, who reported that, disturbance of sleeping pattern interferes in personal, and life activities and social relationships, reduces cognitive performance, and increases the risk for accidents and all these have negative effect on patients quality of life.

Considering the relation between demographic characteristics and quality of sleeping pattern of patients under study, this study resulted that, there were no statistically significant relations between quality of sleeping pattern among patients with chronic heart failure and gender and age. This finding could be interpreted as the effect of chronic heart failure on

patients' quality of sleeping pattern either male or female, and at any age group has no difference since all patients with chronic heart failure have general physical signs and symptoms that affect patients' performance. In disagreement with this finding ***Moradi et al. (2014), Chang et al. (2016)***, ***and Awotidebe et al. (2017)***, who mentioned that, there is significant relation between quality of sleeping pattern and gender among patients with chronic heart failure, and men have higher sleeping pattern disturbances than women.

The results of current study reported that, there were statistically significant relations between quality of sleeping pattern and educational level, employment status, and health insurance coverage of the studied sample. These findings might be due to that; when the patients are not fully aware by what disturbances of sleeping pattern impair, they may not know that they have problems regarding their sleeping pattern. While other patients who feel secure regarding their employment status, and health insurance coverage, this will make them a little bit relax reflecting positively upon quality of their sleeping pattern. These findings are supported by ***Javadi et al. (2015)***, who proved that, quality of sleeping pattern scores are higher among people with less education, also, scores are higher in the employed patients than the non-employed. As well, sleep duration and sleep quality were impaired among people who worked full time job.

Limitations of the Study

The data collection tools are self-reported assessment tools and might be prone to some bias. So, further studies should be done and include an objective tool to assess quality of sleeping pattern.

5. CONCLUSION

This study concluded that, a minority of the studied sample had very good sleeping pattern, while, more than half of them their sleeping pattern ranged between fairly bad and very bad sleeping pattern. With regard to the avoidable factors that could be controlled among the studied sample, representing high percent these were types of medication and their schedules, and environmental factors,. Meanwhile, non-avoidable factors that were most dominant among patients in the studied sample were breathing related complaints. Finally, the current study proved that, there was a highly statistically significant relation between patients' quality of life and their overall quality of sleeping pattern.

6. RECOMMENDATIONS

This study recommended that, nurses' role should be highlighted in relation to handling avoidable and non-avoidable factors through provision of health awareness sessions to patients and their families being involved in such awareness. In addition, further study should be done to assess effect of nursing awareness sessions on patients and their families. Finally, this study should be implemented on a wider scale to involve assessment of the nurses' role in such problem.

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