

Quality of Sleep Among Patients with Chronic Renal Failure

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Abstract

Renal failure is the partial or complete impairment of kidney function. Inability to eliminate metabolic waste products and water, along with functional disruptions in all bodily systems, result in the condition known as renal failure. Renal failure can be categorized as either acute or chronic. Chronic renal failure refers to the gradual and irreversible deterioration of the nephrons in both kidneys. It is characterized by either kidney damage or a glomerular filtration rate below 60 ml/min. The last stage of kidney failure is called as End Stage Renal Disease, which occurs when the glomerular filtration rate is <15 ml/min. **Need for the study:** Most of patients experience sleep disturbance who had chronic kidney disease. This makes them irritable and anxious, tired, drowsy during day. Nurses should adequately assess and document sleep pattern disturbance in hospitalized patients. There is need of nursing care to improve quality of sleep. **Statement of the Problem:** "A Descriptive study to assess the Quality of Sleep Among Patients with Chronic Renal Failure at selected hospitals Coimbatore." **Objectives:** The objective of the study was to determine the sleep quality among the chronic renal failure patients, associate sleep quality with selected demographic variable and clinical variables. **Design and Sampling:** Descriptive research design research design was used for this study. To choose the samples, a non-probability purposive sampling technique was used. **Instruments:** Data collection was collected by using the demographic and clinical profile questionnaire; the patients were clearly explained about the Pittsburgh Sleep Quality Index questionnaires Data was collected and analyzed using descriptive and inferential statistics. **Discussion:** overall sleep quality of patients with chronic renal failure during the data collection period, 13 of patients had the score of 11 to 21 indicated sleep disorder, 27 of patients had the score of 5 to 10 shows poor sleep quality, 10 (24%) of patients had the PQSI Score of <5, which indicated presence of good quality of sleep. **Conclusion:** The study result showed that most of the chronic renal failure patients having poor quality of sleep.

Keywords: CRF, chronic renal failure, PSQI, Pittsburgh Sleep Quality Index, metabolic waste products, sleep, demographic variable.

INTRODUCTION

Sleep disturbances are frequently experienced and cause significant discomfort for individuals with chronic renal failure (CRF). However, there is a lack of sufficient research on the natural progression of sleep disturbances in these patients. While some studies have examined the sleep quality of individuals with CRF, the impact of CRF progression on sleep disturbance remains uncertain. The CRF patients undergoing for dialysis treatment [1–3].

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When patients enter the health care facilities rest and sleep habits can easily be disturbed by hospital routines of the change dependence on the severity of the illness as well as the environment in which

the patient is placed. Lack of rest and sleep makes the patients to become fatigued, irritable, and cause a decreased ability to cope with stressors [4–7].

During illness person may feel anxiety, stress and discomfort and is usually will affect the sleep pattern. sleep medications should not be used frequently as it can affect the quality or depth of a sleep and also may produce side effects.

NEED FOR THE STUDY

During illness person may feel anxiety, stress and discomfort and is usually will affect the sleep pattern. sleep medications should not be used frequently as it can affect the quality or depth of a sleep and also may produce side effects.

Health workers currently pay little attention to sleep disturbances in patients with chronic renal disease, especially in nursing; therefore, this significant occurrence is being overlooked. The practitioners lack the necessary understanding to diagnose and treat the complications linked to this issue. Nurses can reduce the conditions that lead to sleep deprivation by knowing the physiology of the sleep cycle, rest, and techniques to encourage relaxation and sleep.

Most of patients experience sleep disturbance who had chronic kidney disease. This makes them irritable and anxious, tired, and drowsy during day. Nurses should adequately assess and document sleep pattern disturbance in hospitalized patients. There is need of nursing care to improve quality of sleep [8–10].

STATEMENT OF THE PROBLEM

A Descriptive study to assess the Quality of Sleep Among Patients with Chronic Renal Failure at Selected Hospital Coimbatore.

OBJECTIVE

The objective of the study was to:

- determine the sleep quality among the chronic renal failure patients.
- associate sleep quality with selected demographic variable and clinical variables.

Assumption

- Sleep quality is unique to the individual
- Physio—psychodynamic equilibrium may contribute to sleep quality.
- Situational influences in the external environment can increase or decrease sleep quality.

REVIEW OF LITERATURE

Researcher had conducted a study like poor health related quality of life, sleep disturbances also frequently reported among ESRD patients. estimates from recent literature report between 65% and 75% of ESRD patients suffer from poor sleep as subjectively Pittsburgh Sleep Quality Index (PSQI), a commonly used measure of sleep quality in ESRD literature.

This significant event is being overlooked since chronic renal disease patients' sleep disturbances are still a topic that receives little attention from medical experts, particularly in nursing. The practitioners lack the information necessary for this problem's complications to be diagnosed and treated. Nurses can reduce the conditions that lead to sleep deprivation by knowing the physiology of the sleep cycle, rest, and techniques to encourage relaxation and sleep.

MATERIALS AND METHODS

A descriptive research design was adopted for the study. To choose the samples, a non-probability purposive sampling technique was applied. The study was conducted at renal unit of selected hospitals with 50 samples, between 20 and 80 years of both sexes patient with CRF.

DEVELOPMENT OF TOOL FOR DATA COLLECTION

Data collection was conducted by using the Demographic and Clinical profile questionnaire the patients were clearly explained about the PSQI questionnaires and were asked to answer by self-reporting.

DATA COLLECTION

Data was collected from the samples who met the inclusion criteria. The investigator obtained the informed consent from the study participants demographic and clinical profile were obtained and the PSQI was administered to the samples to identify the quality of sleep.

Data Analysis and Interpretation

The collected data was and analyzed using descriptive and inferential statistics.

Table 1 shows that overall sleep quality of patients with CRF during the past 1 month, 13 of patients had the score of 11 to 21 indicated sleep disorder, 27 of patients had the score of 5 to 10 had poor sleep quality, 10 (24%) of patients had the PQSI Score of <5, which indicated presence of good quality of sleep (Figure 1).

Table 1. Distribution of respondents according to Global PSQI score.

Global PSQI	No	%
Sleep disorder (11 to 21)	13	26
Poor quality of sleep (5 to 10)	27	54
Good quality of sleep (<5)	10	20

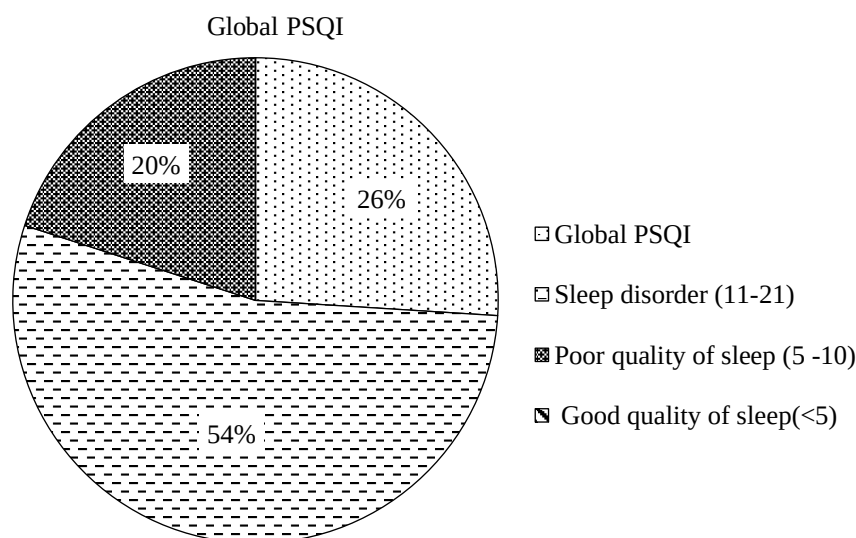


Figure 1. Distribution of respondents based on global PSQI score.

Table 2 Presents Association of Demographical Variables among Patients with Chronic Renal Failure, the value of Age 4 (4.09), Education 6 (4.14) which is significant. And the value of Gender 2 (8.01), Income 4 (9.49) which is non-significant at 0.05 level and reveals that there is no significant association.

Table 3 represents the Association of clinical variables among patients with Chronic Renal Failure. the value of Serum Creatinine 6 (9.31), Serum Urea 6 (12.5), Serum Alkaline Phosphatase 6 (4.58), Serum Albumin 6 (5.15), Serum Phosphorous 6 (5.54), Duration of Illness 4 (10.31), which are Significant. The value of Serum Calcium 6 (20.13), which is Non-Significant at 0.05 level and reveals that there is no significant association.

Table 2. Association of demographic variable with Global PSQ.

Demographical variables	No.	Global PSQI			P-value
		Good <5	Poor 5 to 10	Sleep disorder 11 to 21	
1. Age (in years)					4.09 S
20 to 30	21	4	11	6	
30 to 40	19	3	13	3	
40 to 50	5	1	2	2	
50 to 60	5	2	1	2	
2. Gender					8.01 NS
Female	34	5	23	6	
Male	16	5	4	7	
3. Education					4.14 S
Under education	9	2	4	3	
Primary	19	4	12	3	
Secondary	3	0	1	2	
Degree	19	4	9	6	
4. Income					9.49 NS
Rs.5,000 to 10,000	5	2	2	1	
Rs.10,000 to 20,000	19	6	6	7	
Rs.20,000	26	2	19	5	

Table 3. Association of clinical variable with Global PSQI Score.

Clinical variables	No.	Global PSQI			Chi-square P-value
		Good [<5]	Poor [5 to 10]	Sleep disorder [11 to 12]	
1. Serum creatinine					9.31 S
a. 0.6 to 1.2 mg\dl	9	3	5	1	
b. 1.3 to 4.2 mg\dl	23	6	8	9	
c. 4.3 to 9.2 mg\dl	10	1	6	3	
d. 9.3 to 14.2 mg\dl	8	0	7	1	
2. Serum urea					12.5 S
a. 0 to 65 mg\dl	14	6	4	4	
b. 66 to 130 mg\dl	19	2	12	5	
c. 131 to 195 mg\dl	10	1	4	5	
d. 196 to 260 mg\dl	7	1	6	0	
3. Serum calcium					20.13 NS
a. 6.1 to 8.0 mg\dl	18	6	5	7	
b. 8.1 to 10.0 mg\dl	23	1	14	8	
c. 10.1 to 12.0 mg\dl	5	0	5	0	
d. 12.1 to 14.0 mg\dl	4	3	1	0	
4. Alkaline phosphatase					4.58 S
a. 61 to 80 IU\L	15	2	8	5	
b. 81 to 100 IU\L	9	1	4	4	
c. 101 to 120 IU\L	18	5	11	2	
d. 121 to 140 IU\L	8	2	4	2	
5. Serum Albumin					5.15 S
a. 2.0 to 4.1g\dl	26	7	12	7	
b. 4.2 to 5.0 g\dl	12	3	6	3	
c. 5.1 to 6.0 g\dl	4	0	3	1	
d. 6.1 to 8.5 g\dl	8	0	6	2	

6. Serum phosphorus					5.54 S
a. 2.1 to 4.0	16	3	9	4	
b. 4.1 to 6.0	15	5	5	5	
c. 6.1 to 8.0	13	2	9	2	
d. 8.1 to 10.0	6	0	4	2	
7. Duration of illness					10.31 S
a. Up to 1 years	10	3	5	2	
b. 1 to 2 years	12	0	5	7	
c. Above 2 years	28	7	17	4	

Nursing Implications

- It helps identify the sleep pattern disturbance.
- It helps promote the good quality of sleep among CRF patients.
- It helps identify the factor affecting the quality of sleep.

Limitations

- The study used a small sample size, that the results cannot be generalized.
- In this study, only one time observation was done.

Recommendations

- An evaluative approach the determines the effect of sleep hygiene strategies can be done in a large sample.
- The study used subjective assessment of sleep. The objective assessment of sleep by using sleep study can be done.
- An explorative study to assess the lived in experiences of patients during follow-up visit on month after discharge.

CONCLUSION

Despite the best treatment techniques and drugs, renal failure patients require sleep to recuperate. Nurses and doctors can enhance the renal failure patient's ability to sleep, make their stay in renal ward is more pleasant, and assist them to regain their physical strength more rapidly, without increasing financial costs.

Demographic variables

1. Age (in years)

- 20–30 yrs
- 30–40 yrs
- 40–50 yrs
- 50–60 yrs

2. Gender

- Female
- Male

3. Education

- Under education
- Primary
- Secondary
- Degree

4. Income

- Rs.5,000–10,000
- Rs.10,000–20,000
- >Rs.20,000

Clinical Variables**1. Serum Creatinine**

- a. 0.6 to 1.2 mg/dl
- b. 1.3 to 4.2 mg/dl
- c. 4.3 to 9.2 mg/dl
- d. 9.3 to 14.2 mg/dl

2. Serum Urea

- a. 0 to 65 mg/dl
- b. 66 to 130 mg/dl
- c. 131 to 195 mg/dl
- d. 196 to 260 mg/dl

3. Serum Calcium

- a. 6.1 to 8.0 mg/dl
- b. 8.1 to 10.0 mg/dl
- c. 10.1 to 12.0 mg/dl
- d. 12.1 to 14.0 mg/dl

4. Alkaline Phosphatase

- a. 61 to 80 IU/Lit
- b. 81 to 100 IU/Lit
- c. 101 to 120 IU/Lit
- d. 121 to 140 IU/Lit

5. Serum Albumin

- a. 2.0 to 4.1 g/dl
- b. 4.2 to 5.0 g/dl
- c. 5.1 to 6.0 g/dl
- d. 6.1 to 8.5 g/dl

6. Serum Phosphorous

- a. 2.1 – 4.0 mg/dl
- b. 4.1 – 6.0 mg/dl
- c. 6.1 – 8.0 mg/dl
- d. 8.1 – 10.0 mg/dl

7. Duration of Illness

- a. Up to 1 year
- b. 1 to 2 years
- c. Above 2 years

8. Duration of Illness

- a. Up to 1 year
- b. 1 to 2 years
- c. Above 2 years

REFERENCES

1. Kiuchi MG, Mion D Jr. Chronic kidney disease and risk factors responsible for sudden cardiac death: a whiff of hope? *Kidney Res Clin Pract.* 2016; 35 (1): 3–9. doi: 10.1016/j.krcp.2015.11.003. PMID 27069851, PMCID PMC4811986.
2. Ignatavicius DD. Clinical decision-making study guide for medical-surgical nursing-revised reprint: patient-centered collaborative care (old edition). Philadelphia, PA, USA: Saunders. 7th ed; 2013.
3. Chester JG, Rudolph JL. Vital signs in older patients: age-related changes. *J Am Med Dir Assoc.* 2011; 12 (5): 337–343. doi: 10.1016/j.jamda.2010.04.009. PMID 21450180, PMCID PMC3102151.
4. Wilkinson JM, Treas LS, Barnett KL, Smith MH. Fundamentals of nursing. 4th ed. Philadelphia, PA, USA: F A Davis Company; 2016.

5. Duo L, Lan H, Reynolds DJ, Gunderson TM, Kashyap R, Gajic O et al. Association between obstructive sleep apnea and acute kidney injury in critically ill patients: a propensity-matched study. *Nephron*. 2017; 135 (2): 137–146.
6. Elias RM, Bradley TD, Kasai T, Motwani SS, Chan CT. Rostral overnight fluid shift in end-stage renal disease: relationship with obstructive sleep apnea. *Nephrol Dial Transplant*. 2012; 27 (4): 5569–5573.
7. Fonseca NT, Urbano JJ, Nacif SR, Silva AS, Peixoto RA, Urbano GJ, et al. A systematic review of sleep disorders in patients with chronic kidney disease undergoing hemodialysis. *J Phys Ther Sci*. 2016; 28 (7): 2164–2170. doi: 10.1589/jpts.28.2164, PMID 27512289.
8. Zoccali C, Mallamaci F, Tripepi G. Novel cardiovascular risk factors in end-stage renal disease. *J Am Soc Nephrol*. 2004; 15 (Suppl 1): S77–S80. doi: 10.1097/01.asn.0000093240.84097.fe, PMID 14684678.
9. Pongneon O, Chaunchaiyakul R, Vareesangthip K, Lumlertgul D, Nakum S, Jalayondeja W. Home-based walking program increases leg muscle strength in hemodialysis patients. *J Phys Ther Sci*. 2011; 23 (2): 345–348. doi: 10.1589/jpts.23.345.
10. Silva LC, Marinho PÉ. Knowledge among nephrologists about the importance of exercise in the intradialytic period. *J Phys Ther Sci*. 2015; 27 (9): 2991–2994. doi: 10.1589/jpts.27.2991, PMID 26504342.