IMPACT OF END-STAGE RENAL FAILURE ON QUALITY OF SLEEP IN HAEMODIALYSIS RECIPIENTS AT SOHAG UNIVERSITY HOSPITAL.

Ghona Abd El-Nasser[1],Lotfy Abo-dahab[2]
Medical-Surgical Nursing Department[1]& Internal Medicine Department[2]
Faculties of Nursing[1] & Medicine[2]
Sohag University

ABSTRACT

Background. *Many patients with end stage renal disease (ESRD) undergoing dialysis therapy suffer from sleep disturbances.The aim of this study is to determine the impact of end-stage renal failure on quality of sleep in(HD) patients.**Subjects and Methods**.The study sample was 221 ESRD patients receiving hemodialysis in a Sohag university hospital dialysis unit. Data were collected using a Pittsburgh Sleep Quality Index (PSQI) in addition to Personal Information Form (PIF) **Results:**The mean±SD age of patients was 42.3±13.1 years, more than half were males (55.2%).(36.2%)of the patients were illiterates and (34.4%) of them were house-wives.The major causes of (ESRD) were hypertension (44.3%) and diabetes mellitus (18.1%).The majority of the subjects attended haemodialysis more than 3 hours/ session with frequency of HD patients(78.7%) ranged from 3-4 sessions/week. More than half (58.8%)of the study sample had history of dialysis >3 years. The mean PSQI score was (11.85 ±4.45);in total (87.3%) of all patients were poor sleepers(global PSQI>5).Frequency and history of dialysis has no significant effect on global ,component PSQI ,while age was significantly correlated with a global PSQI,sleep quality,sleep duration ,sleep efficiency and sleep disturbance. Also significant correlation was found between duration of session and daytime dysfunction.**Conclusion:**The findings indicate a high prevalence of sleep disturbances in dialytic populations. Awareness by Sohag nephrologists and nurses regarding sleep disorder seems to be insufficient.The results might help nephrologists and nurses to deal with uraemic patients with possible sleep disorders.*

Keywords: *Pittsburgh Sleep Quality Index (PSQI),End-Stage Renal Disease, Haemodialysis,Chronic renal failure (CRF),Chronic kidney disease(CKD).*

INTRODUCTION

Sleep disturbances can seriously influence physical and mental well-being as well as quality of life. These effects are often more pronounced in individuals who are facing the multiple consequences of a serious and life threatening illness such as end-stage renal disease.Sleep disorder are common in end stage-stage renal disease patients(Yang et al 2007).The patient with end-stage renal disease(ESRD)experience various sleep disturbance affecting their sleep quality(Parker 2003).Advanced chronic renal failure has an impact on physical, psychological and social functioning of people suffering it.Various treatment prolong the life of these patients, but they face many physical , emotional, social and economical difficulties(Hays et al 1994 ; Eghali 2008). In addition, haemodialysis causes major changes in patients' lifestyles that affect their quality of life and sleep quality (Tel 2009).The prevalence of ESRD in the world is 242 in a million and it has an increase of about 8% annually. This rate is different among various ethnics so that it is 758 per million in black race and 180 per million among white race(Kallenbach 2005).In the Kingdom of Saudi Arabia the prevalence of chronic renal failure is 80 to 120

per million population (pmp) and 225 pmp in Egypt. This is in comparison with the reported prevalence of 283 pmp in Europe, 975 pmp in the United States, and 1149 pmp in Japan. Lower prevalence rates reported in some regions could be due to underreporting (Shaheen et al 2005).From 1997 to 2001 the application of HD had increased (33%) and the PD increased by 4% (LeMone & Burke 2008).Sleep deprivation can have profound physical effect including fatigability, pain intolerance, and decreased immune functioning as well as emotional consequences such as irritability, depression, and decreased pleasure in work and social activities (Sheey 1996). Kraus et al 1997 reported that, casual link between conventional dialysis and sleep dissatisfaction remains speculative.

Previous studies have been carried out to understand the real impact of sleep disorders in dialytic patients and discover whether these complaints are correlated with clinical and\or demographic data.It was found that the prevalence of sleep disorders are quite common in the HD especially anemic and hypoalbuminemic patients (Sabry et al 2010). Studies by Holley et al (1992) and Walker et al (1995)which conducted on small groups of patients recruited from single dialysis unit and the results obtained were found to be influenced by the specific dialytic techniques used in the individual units and/ or by demographic or clinical peculiarities.Another study was performed on a large group of population, but the questionnaire used in this investigation did not include recognized criteria for diagnosis of common sleep disorder(Sabbatini et al 2002).As well as research by Williams et al (2002) demonstrated an association between sleep disturbance and physical and mental well-being in dialysis patients. End-stage renal disease (ESRD)is a significant problem in Sohag governorate. This kind of research has not been performed before ***in our patients***. So, the present study was conducted to determine the impact of end-stage renal failure on quality of sleep in (HD)recipients using a validated sleep quality tool at Sohag University Hospital.

SUBJECTS AND METHODS

This is a descriptive study was conducted with 221patients who receiving renal replacement therapy with haemodialysis in Sohag university hospital , haemodialysis unit patients were invited to participate in the study. Inclusive criteria included having an active file in the hospital (male & female, literate and illiterates , able to give informed consent and welling to participate in the study, and who had no communication or emotional problems).Permission to conduct the study was received from the hospital administration and from the head of the dialysis unit to conduct this study.After patients were given information about the study their verbal consent to participate was reseived.Enrolled patients completed the questionnaire during the dialysis sessions or waiting for their treatment. The questionnaire was explained to patients and, the required assistance was given in reading and understanding the questions, and all patients filled out the questioner by themselves except in the case of illiterate patients, the questionnaire was filled out by the researcher ,with the help of verbal communications.

Instrument:

Data were collected using Pittsburgh Sleep Quality Index (PSQI),in addition to Personal Information Form(PIF) was used. It was developed by the researcher and included question about the patients' age, gender, educational level, working status ,past medical history, frequency of HD, history of dialysis, duration of HD session.

Quality of sleep was measured using the Pittsburgh Sleep Quality Index (PSQI),it was developed by (Buysse et al 1989).This self-administered questionnaire assesses sleep quality and quantity during the previous month and contains 19 self-rated questions yielding seven components: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleep medications and daytime dysfunction. Each component is scored from 0 to 3, yielding a global PSQI score between 0 and 21, with higher scores indicating lower

quality of sleep. The PSQI is useful in identifying good and poor sleepers.(A global PSQI score> 5) indicates that a person is a 'poor sleeper' having severe difficulties in at least two areas or moderate difficulties in more than three areas(Buysse et al 1989).

This tool has been tested by a panel of experts after translation to Arabic and back-translated from Arabic to English by a professional medical translator, for its content validity, these are nephrology consultants (2), nursing academics (2), and psychology academics (3). Finally, the questionnaire was pre-test on a group of 10% of the sample in selected setting and modified for any ambiguity or vagueness.

The Statistical Package for the Social Sciences (SPSS) version 16.0 was used for data analysis in the study. A result was interpreted to suit the problem under investigation and was summarized in appropriate table. The following tests for significance were used, number and percentage mean, standard deviation (SD),ANOVA and independent samples t-test used to compare the means.Pearson correlation test was used to determine the relationships between global, component PSQI and other demographic variables such as age, duration of haemodialysis session , frequency of HD, history of dialysis. P value: <0.05 was considered to detect statistically significant results.

RESULT

Table (1) illustrates patients personal characteristic and their past medical history.The study patients of the present study had a mean age of 42.3 ±13.1years, the majority fell between 40 - ≥50years.More than half were males (55.2%). Regarding education 36.2% of patient were illiterates and 39.0 % don't work. As regards patients past medical history,the major causes of end-stage renal disease (ESRD) was hypertension (44.3%) and Diabetes mellitus (18.1%)was the second leading cause to ESRD.

Table (2) shows the frequency distribution of the study patients present-medical history. It was found that the majority of the subjects attended haemodialysis more than 3 hours/session (78.3%) and 78.7% had attended from 3-4 session/week. More than half (58.8%)of the study sample had history of dialysis since >3 years. In total 87.3% of all patient were poor sleepers(global PSQI>5) and 12.7%were good sleeper(global PSQI≤5).

Table (3) presents mean score and stander deviation of Global and component PSQI score of the study patients.The Global PSQI mean(11.85 ±4.45) with median and range were(13.0;0-21).The mean score of subjective sleep quality was2.01±0.86 with the median& range were(2.0;0-3).The mean score of sleep latency was2.04±1.08 with the median& range were(2.0;0-3).The mean score of sleep duration was1.91±1.07 with the median&range were(2.0;0-3).The mean score of sleep efficiency was2.14±1.02 with the median& range were(3.0;0-3).The mean score of sleep disturbance was1.62±0.64 with the median& range were(2.0;0-3).The mean score of use of sleep medications was1.03±1.14with the median&range were (1.0;0-3).The mean score of daytime dysfunction was1.14±0.92 with the median & range were(1.0;0-3).

Table (4) shows the correlation between the global, component PSQI scores and other study continuous variables as age, frequency of HD, duration of HD session, and history of dialysis. The correlation was assessed through Pearson correlation test.The study highlighted that no significantly correlation were found between history of dialysis ,frequency of dialysis, and Global and seven component PSQI scores. On other hand it was found the age, was significant correlated with a Global PSQI score ,subjective sleep quality, sleep duration , sleep efficiency and sleep disturbance, while it was found no significant correlation between age and sleep latency, use of sleep medication and daytime dysfunction. Also, it was found that a negative relationship between duration of HD session and daytime dysfunction.

Table (5) shows the comparison of global, component PSQI mean scores as regard gender.

It was found the mean score of females featured a greater in sleep latency,sleep disturbance and use of sleep medication compared with males (respectively 2.22±1.00 vs1.91±1.14, p=0.033;1.96±0.70 vs1.64±0.66, p=0.001; 1.21±1.22 vs 0.89±1.06 p=0.035);while not observe any significant differences regarding subjective sleep quality, sleep duration, sleep efficiency, daytime dysfunction and Global PSQI score in both groups .

Table (6) shows the comparison of global, component PSQI mean scores as regard age group.It was found the mean score of age group ≥50 featured a greater in subjective sleep quality compared with other age groups (respectively 2.24±0.73 vs 1.79±0.96,2.09±0.87,1.86±0.89; p=0.017),but the mean score of use of sleep medication was featured a greater in age group from 30 to less than 40 years compared with other age groups(respectively 30-40=1.40±1.22, 30=0.61±1.05, 40 to 50 =1.04± 1.13, ≥50=1.03± 1.10 ;p = 0.021).Also it was found the mean score of daytime dysfunction in age groups from 40- ≥ 50 years was featured a greater than other age groups (p=0.039), mean score of Global PSQI score was featured a greater in age group from 30-40 years other age groups(p=0.017).

Table (7) shows the comparison of global ,component PSQI mean scores as regard frequency of dialysis groups. It was found that the mean score of daytime dysfunction only in group from 3-4 session/week was higher than frequency of dialysis groups from 1-2 session (respectively 1.15±0.91 vs 0.83±0.82, P=0.030).But there was no significant difference between the mean scores of component ,global PSQI and frequency of dialysis in two groups (p>0.05) .

Table (8) shows the comparison of global, component PSQI mean scores as regard to history of dialysis. It was found the mean score of component, global PSQI was higher in both groups, but independent t-test showed no significant difference (p>0.05).

Table (9) shows the comparison of global ,component PSQI mean score as regard to duration of session. It was found that the mean score of daytime dysfunction only in duration of session groups from 2-3hours /session was higher than other group (respectively 1.39±0.98 vs1.00±0.86, p=0.008)

Table (1): Patients' personal characteristics and their past-medical history

Characteristics	Data (n= 221)
Age group: (years)	
< 30	38 (17.2%)
30 - < 40	43 (19.5%)
40 - < 50	70 (31.7%)
≥ 50	70 (31.7%)
Mean ± SD; Range	42.3 ± 13.1; 7.0 – 81 years
Gender (M/F)	122 (55.2)/ 99 (44.8)
Educational level	
Illiterates	80 (36.2)
No formal education	36 (16.3)
Primary school	64 (29)
Secondary school	27 (12.2)
Tertiary	14 (6.3)
Working status	
Works	42 (19.0)
Don't work	86 (39.0)
Retired	9 (4.1)
Housewife	76 (34.4)
Student	8 (3.6)
Past medical history	
Hypertension	98 (44.3)
Diabetes mellitus	40 (18.1)
Unknown	25 (11.3)
Chronic glomerulonephritis	14 (6.3)
Urinary tract obstruction	12 (5.4)
Polycystic kidney disease	8 (3.6)
Lupus nephritis	8 (3.6)
Chronic pyelonephritis	4 (2.0)
Pregnancy-related causes	6 (3.0)
Others causes	6 (3.0)

M/F=Male/Female

Table (2): Distribution of the study patients' present-medical history data

Present-Medical History	Data No. (%)
Frequency of HD:	
1-2 sessions/ week	47 (21.3)
3-4 sessions/ week	174 (78.7)
History of dialysis:	
<1 years	13 (6.0)
1–3 years	78 (35.2)
> 3 years	130 (58.8)
Mean ± SD	4.4 ± 3.0
***Duration of HD session*:**	
2-3 hours/session	48 (21.7)
> 3 hours/session	173 (78.3)
Mean ± SD	3.8 ± 0.5
Pittsburgh Sleep Quality Index:	
≤ 5 (Good sleep)	28 (12.7)
> 5 (Poor sleep)	193 (87.3)

Table (3): Mean score and standard deviation of Global and PSQI component of the study patients(n=221).

PSQI component scores	Mean score (SD)**	Median	Range
Global PSQI	11.85 (4.45)	13.0	(0-21)
Subjective sleep quality	2.01 (0.86)	2.0	(0-3)
Sleep latency	2.04 (1.08)	2.0	(0-3)
Sleep duration	1.91 (1.07)	2.0	(0-3)
Sleep efficiency	2.14 (1.02)	3.0	(0-3)
Sleep disturbance	1.62 (0.64)	2.0	(0-3)
Use of sleep medications	1.03 (1.14)	1.0	(0-3)
Daytime dysfunction	1.14 (0.92)	1.0	(0-3)

PSQI: Pittsburgh Sleep Quality Index
SD=Stander deviation

Table (4): Correlation between global, component PSQI score and other study continuous variables study patients(n=221)

		Age	Duration of session	History of dalysis	Frequency of dialysis
Subjective sleep quality	**r-value**	0.161	0.009	0.007	0.049
	P-value	0.017*	0.890	0.916	0.469
Sleep latency	**r-value**	0.004	0.000	0.075	-0.006
	P-value	0.955	0.992	0.268	0.924
Sleep duration	**r-value**	0.157	-0.019	0.081	0.073
	P-value	0.019*	0.775	0.232	0.281
Sleep efficiency	**r-value**	0.156	-0.018	0.075	0.075
	P-value	0.020*	0.790	0.264	0.270
Sleep disturbance	**r-value**	0.196	-0.033	-0.033	0.030
	P-value	0.003*	0.630	0.622	0.662
Use of sleep medications	**r-value**	0.054	-0.028	0.028	0.068
	P-value	0.428	0.683	0.676	0.317
Daytime dysfunction	**r-value**	0.103	-0.170	0.032	0.109
	P-value	0.128	0.011*	0.640	0.105
Global PSQI	**r-value**	0.170	-0.035	0.085	0.074
	P-value	0.011*	0.601	0.210	0.276

Pearson correlation
* Statistical significant differences (P< 0.05)
PSQI: Pittsburgh Sleep Quality Index

Table (5): Comparison of global, component PSQI score according to sex

	Male	Female	Total	P-value
	Mean ± SD	**Mean ± SD**	**Mean ± SD**	
Subjective sleep quality	1.98 ± 0.91	2.06 ± 0.81	2.01 ± 0.87	0.468
Sleep latency	1.91 ± 1.14	2.22 ± 1.00	2.05 ± 1.09	0.033*
Sleep duration	2.11 ± 1.03	2.17 ± 1.01	2.14 ± 1.02	0.639
Sleep efficiency	2.11 ± 1.03	2.18 ± 1.01	2.14 ± 1.02	0.588
Sleep disturbance	1.64 ± 0.66	1.96 ± 0.70	1.78 ± 0.69	0.001*
Use of sleep medications	0.89 ± 1.06	1.21 ± 1.22	1.03 ± 1.15	0.035*
Daytime dysfunction	1.01 ± 0.92	1.17 ± 0.86	1.08 ± 0.90	0.178
Global PSQI	11.39 ± 4.46	12.43 ± 4.40	11.86 ± 4.45	0.084

Independent samples t-test
* Statistical significant differences (P< 0.05)
PSQI: Pittsburgh Sleep Quality Index

Table (6): Comparison of global, component PSQI score according to age group

	Age (years)				P-value
	< 30	30 - < 40	40 - < 50	≥ 50	
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	
Subjective sleep quality	1.79 ± 0.96	2.09 ± 0.87	1.86 ± 0.89	2.24 ± 0.73	0.017*
Sleep latency	1.87 ± 1.07	2.35 ± 0.92	2.03 ± 1.10	1.99 ± 1.16	0.206
Sleep duration	1.84 ± 1.17	2.14 ± 1.08	2.14 ± 1.01	2.29 ± 0.89	0.200
Sleep efficiency	1.84 ± 1.17	2.14 ± 1.08	2.16 ± 1.02	2.29 ± 0.89	0.199
Sleep disturbance	1.55 ± 0.76	1.81 ± 0.70	1.76 ± 0.58	1.91 ± 0.74	0.074
Use of sleep medications	0.61 ± 1.05	1.40 ± 1.22	1.04 ± 1.13	1.03 ± 1.10	0.021*
Daytime dysfunction	0.74 ± 0.79	1.16 ± 0.81	1.24 ± 0.91	1.06 ± 0.95	0.039*
Global PSQI	9.95 ± 4.78	12.63 ±4.23	11.73 ±4.62	12.56 ± 3.99	0.017*

ANOVA t-test * Statistical significant differences (P< 0.05)
PSQI: Pittsburgh Sleep Quality Index

Table (7): Comparison of global, component PSQI score according to frequency of dialysis

	Frequency of dialysis		P-value
	1 – 2	3 – 4	
	Mean ± SD	Mean ± SD	
Subjective sleep quality	1.96 ± 0.93	2.03 ± 0.85	0.618
Sleep latency	2.11 ± 0.98	2.03 ± 1.12	0.689
Sleep duration	2.04 ± 1.16	2.16 ± 0.98	0.482
Sleep efficiency	2.04 ± 1.16	2.17 ± 0.99	0.462
Sleep disturbance	1.79 ± 0.78	1.78 ± 0.67	0.961
Use of sleep medications	0.94 ± 1.13	1.06 ± 1.15	0.521
Daytime dysfunction	0.83 ± 0.82	1.15 ± 0.91	0.030*
Global PSQI	11.47 ± 4.69	11.97 ± 4.40	0.498

Independent samples t-test * Statistical significant differences (P< 0.05)
PSQI: Pittsburgh Sleep Quality Index

Table (8): Comparison of global, component PSQI score according to history of dialysis

	History of dialysis			P-value
	< 1 year	1 – 3 years	> 3 years	
	Mean ± SD	Mean ± SD	Mean ± SD	
Subjective sleep quality	2.00 ± 0.91	2.04 ± 0.87	2.00 ± 0.86	0.952
Sleep latency	2.00 ± 1.22	1.82 ± 1.14	2.19 ± 1.03	0.057
Sleep duration	2.08 ± 1.19	2.08 ± 1.04	2.18 ± 1.00	0.776
Sleep efficiency	2.08 ± 1.19	2.09 ± 1.05	2.18 ± 1.00	0.818
Sleep disturbance	1.92 ± 0.86	1.77 ± 0.64	1.78 ± 0.71	0.753
Use of sleep medications	0.92 ± 0.86	0.95 ± 1.16	1.09 ± 1.16	0.643
Daytime dysfunction	0.62 ± 0.65	1.10 ± 0.88	1.12 ± 0.92	0.154
Global PSQI	10.85 ± 5.76	11.54 ± 4.59	12.15 ± 4.23	0.441

Independent samples t-test * Statistical significant differences (P< 0.05)
PSQI: Pittsburgh Sleep Quality Index

Table (9): Comparison of global, component PSQI score according to duration of session

	Duration of session		P-value
	2 – 3 hours	> 3 hours	
	Mean ± SD	Mean ± SD	
Subjective sleep quality	1.91 ± 0.89	2.04 ± 0.86	0.377
Sleep latency	2.13 ± 1.11	2.03 ± 1.09	0.573
Sleep duration	2.13 ± 0.93	2.14 ± 1.05	0.969
Sleep efficiency	2.13 ± 0.93	2.14 ± 1.05	0.942
Sleep disturbance	1.83 ± 0.64	1.77 ± 0.71	0.635
Use of sleep medications	1.09 ± 1.17	1.02 ± 1.14	0.714
Daytime dysfunction	1.39 ± 0.98	1.00 ± 0.86	0.008*
Global PSQI	12.09 ± 4.58	11.80 ± 4.43	0.698

Independent samples t-test
* Statistical significant differences (P< 0.05)
PSQI: Pittsburgh Sleep Quality Index

DISSCUTION

For all people sleep is part of the rhythm of life. Without a"good"sleep, the body loses the ability to revitalize, the mind is less adept one's mood is altered (Smyth 2007).The study findings illustrated that, more than half of the HD patients were males(55.2%) with a mean age and related SD was 42.3±13.1 and (36.2%) were illiterate. This finding is congruent with the Al-Jahdali et al 2010 it was reported that, 53.7% of the patients were males and 46.3% were females.Similar result by Eghbali et al 2008. On the contrary by Mollaoglu 2009 who reported that, as regards situational variables, most of the patients were females; primary school educated; not employed; and married. In the study by Jha & Chugh (2003) who reported that three fourth of the dialysis population in the developing countries are in the age ranges from 20 – 50 years old.

Findings of the present study revealed that, only 19.0% of the study patients had work while big bulk doesn't (39.0%).Also (34.4%)of the patients were housewives who were responsible for family individuals which constituted additional load besides their illness. This result is consistent with Mollaoglu 2009 who reported that only 12.5% were employed, 5 full-time and 1 part-time.A total of 87.5% were unemployed. As regards to primary causes of ESRD, the study revealed that the primary main cause of ESRD was hypertension(44.3%), followed by diabetes mellitus (18.1%). These results is supported by Saleem 2006 who reported that, the cause of ESRD was hypertension followed by diabetes mellitus.Other results by Al-Swailem et al. 1999;Sanner et al 2002; Annual reports 2002; Barsoum 2002; Smeltzer and Bare 2004; Beng 2005; Merlino et al 2006 found that, the etiology of ESRD were diabetes mellitus, urinary tract

obstruction and hypertension, glomerulonephritis, interstitial nephritis, unknown causes.

Referring to the present medical history, the study shows that the majority of the study sample (78.7%) had dialysis from three-four sessions/ week, (58.8%) of the study sample had history of dialysis since more than 3 years, and most of them(78.3%)had duration of HD session more than 3 hours/session.These results are in agreement with Iliescu et al 2003;Saleem 2006 who revealed that, the majority of the study patients (85.1%) had three sessions/week and most of them (61.9%) dialyzed 4hours/session.These patients were subjected to two needle pricks three times weekly and this would lead to pain and discomfort.In Egypt, a study by Sabery et al 2010 found that, the mean duration of dialysis in the studied patients were 54.48 months. Another research by Al-Jahdali et al 2010 showed that, the mean duration of time on dialysis was 40.4 ± 37.8 months.Similar results by Sağlik et al 2006;Mollaoglu 2009.

The results of the study shows increased prevalence of poor sleep (PSQI>5) in the haemodialysis patients was 87.3% ,the mean score of global PSQI was(11.85±4.45) and median score as it was 13.0,mean score of subjective sleep quality was2.01 ±0.86, the mean score of sleep latency was 2.04 ±1.08 ,the mean score of sleep duration was1.91±1.07,the mean score of sleep efficiency was 2.14 ±1.02, the mean score of sleep disturbance was1.62 ±0.64, the mean score of use of sleep medications was 1.03 ±1.14 ,the mean duration of daytime dysfunction was 1.14. ±0.92.These results are in agreement with Holley et al. 1992; Walker et al 1995; Eghbgali et al 2008;Sabery et al 2010 who reported a high prevalence of sleep disorders in dialysis units. Williams et al. noted in a study on sleeping behavior of HD patients found that more than 50% of patients woke up from sleep frequently and about 55% of them woke up too early (Williams et al 2002).Gul et al 2006 added that 80% of haemodialysis or peritoneal dialysis patients suffer from sleep abnormalities.In the same line by D'Ambrosio et al 1999 who said that the majority of patients affected by this disease have symptoms related to poor quality sleep, such as excessive daytime sleepiness and tiredness, lack of concentration and memory impairment.As a result, quality of life in these patients is impaired. Sanner et al 2002 added that, impaired daytime performance and daytime sleepiness are also common symptoms of end-stage renal disease. Similar result by Paker et al 2000 ;Sanner et al 2002;Tsay &Healstead 2002;Violani et al 2006. Abdelwhab et al. revealed that, poor sleep (PSQI>5) was found in 70% of the study patients group vs. 15% of the control group with significant differences between group 1 and 2 regarding mean PSQI ($p<0.001$; 9.53±5.46, 3.7±2.53, respectively) (Abdelwhab et al 2010).

The study noticed a significant correlation between patient age and global,component PSQI for the following sleep disorder:sleep quality, sleep duration, sleep efficiency ,sleep disturbance and global PSQI. This result is consistent with Annual Report of the Egyptian Society of Nephrology 2004; Makhlouf et al 2007 who said that sleep disorders are usually observed in the old age groups while our patients' mean age was relatively young, which supports more the notion that uremia and its complications are more likely the cause of sleep disorders observed in HD patients than aging. On the contrary Iliescu et al 2003; Merlino et al 2006; Colbay et al 2007 did not detect any significant correlation between the sleep disruption and age.

When the correlation of global and component PSQI with other variables were assessed, there was a significant correlation between the duration of session scores and daytime dysfunction,while did not find any significant correlation between global ,component PSQI score and the history and frequency of dialysis.In the study Iliescu et al. 2003;Sabry et al 2010 who reported that sleeping disturbance is quite common in HD patients.ESRD has long been associated with sleep complaints, especially patients undergoing dialysis. Problems falling a sleep or staying a sleep, frequent awakenings, daytime fatigue, and unplanned naps are frequently reported by dialysis patients.In the same line Iliescu et al 2003;Barmar et al 2009 added that sleep complaints are common in

haemdialysis patients. The poor sleep quality of these patients may be due to the adjustment of their sleep-wake behavior to the time requirements of the dialysis regimen, and this adjustment is likely different for patients on home therapies versus in-center HD.Paker 2003; Shayamsunder et al 2005 who found a confirm complex correlates of sleep problems to patient with kidney disease.Mucsi et al 2004 examined the prevalence of sleep disorders in a sample of Hungarian patients on maintenance dialysis, found that 65% of the patients reported symptoms of at least one specific sleep disorder, insomnia was the most common sleep compliant (49%), the prevalence of sleep apnea was 32% and the prevalence of restless legs syndrome was 15%. On the other hand, a patient receiving in-center HD would have to adjust (shorten) one's wake-up time in order to show up for his dialysis treatment the same day (Barmar et al 2009).Parker et al 2005 proposed different etiologies for sleep problems in CKD and chronic HD patients.Functional and psychological factors may play a more prominent role in the former group, while intrinsic sleep disruption may play a more significant role in the latter.Also from the researchers point of view sleep disorders are usually observed in haemodialysis patients', due to notion of uremia, anxiety, and depression, dyspnea due to fluid overload, pain in muscle and bone due to renal bone disease, pericarditis\arrythmia giving palpitation and these complications are more likely the cause of sleep disorders than causes of ESRD.Several authors, Chan et al 2004; Hanly 2004; Parker et al 2007; Beecroft et al 2008 reported that, although sleep disorders are not improved by conventional modes of dialysis, appropriate management of sleep disorders are improve by nocturnal haemodialysis (NHD) which suggested as a treatment option as it normalizes the higher heart rates and impaired vagal and augmented sympathetic hear rate modulation during sleep with better removal of uremic toxins.Also it increases the pharyngeal cross-sectional area. Furthermore, cool dialysate (35 degrees centigrade) during chronic HD was observed to improve nocturnal sleep.On other hand Eghbali et al (2008) showed that dialysis is a complicated problematic treatment, causing patients lots of tension and stress, the severity of tiredness and sleep disorder is higher in haemodialysis patients than peritoneal dialysis .At the same line Hays et al 1994 reported that poor sleep quality in particular has been associated with higher mortality, higher disability and utilization costs in the CKD/ESRD population.

The present study revealed that the mean score of females featured a greater in sleep latency,sleep disturbance and use of sleep medication compared to males. This result is in agreement with Al-Jahdali et al 2010 who reported that, insomnia was significantly associated with female gender, afternoon haemodialysis, Restless Legs Syndrome, high risk for obstructive Sleep Apnea Syndrome and excessive daytime sleepiness.Similer results by Sabbatini et al 2002 found that, the female were more strongly affected than male.On the contrary Merlino et al 2006 said that sleep group did not differ as to sex, weight, BMI, caffeine intake and drug use. Perl et al, excessive daytime sleepiness and sleep disorders, including sleep apnea syndrome, restless legs syndrome, and periodic limb movement disorder, occur with increased frequency in patients with end-stage renal disease (ESRD) (Perl et al 2006).

As regard to the finding of this study, the mean score of daytime dysfunction only in frequency of dialysis group from 3-4 session/week was higher than other group and there was a significant difference between two groups in this regard.This results is in agreement with Sanner et al 2002 who reported that impaired daytime performance and daytime sleepiness are also common symptoms of end-stage renal disease. Mucsi et al 2005;Pai et al 2007; Roth 2007added that, sever insomnia can impair daytime functioning and increase the occurrence of accidents and decrease QOl.

The present study was found no significant difference in the mean scores between the history of dialysis groups and component,global PSQI. This results is in agreement with Tel 2009 reported that, no significant relationship was found between duration of hemodialysis and QOL or sleep quality($p>.05$).On the contrary Veiga et

al 1997 ; Sabbatini et al 2002 who report an association between longer dialysis duration and insomnia. In particular, higher PSQI scores have been found among patients who have received HD for a long period of time.

According to the results of the present study, the mean score of daytime dysfunction in duration of HD session group from 2-3hours /session was higher than other group and there was a significant difference between two groups in this regard. An explanation may be due to the frequency of HD in these patients were dialysis from 3 to 4 session/week and wake-up time in order to this dialysis treatment.Barmar et al (2009) in a study on sleep quality,found that if patient oversleeps as a result of the extra sleep time one day, then he or she may experience a sleepless night the next day leading to fluctuating sleep quality and changes in day time performance (alertness) and possibly mood.Abdelwhab et al 2010 who said that, the exact etiology and pathogenesis of sleep disorders are not exactly known in HD patients.Therefore,nurses should pay more attention to these patients and provide them more support and care (Eghbali et al 2008).

Conclusion: In conclusion, the study highlight that sleep disorders is a severe problem for HD patients and level of attention of our nephrologists and nurses to these problems is still insufficient at this time.Age, gender, frequency and duration of dialysis, were related to reported levels of sleep disturbance. Thus, identifying high-risk patients such as the females, or the elderly, may enable the development of specific strategies to decrease the sleep disturbance associated with these conditions. Interventional studies for management of sleep disorder in haemodialysis patients are wanted. Finally, considering the findings of this study, I hope for better plan in health care services for dialysis patients especially HD patients to reduce their sleep disorders and improve their function and satisfaction in life.In order to improve patient care and promote patient's quality of sleep, nephrologists and nurses especially those working in haemodialysis unit should understand with comprehensive assessment of sleep and work with patients to initiate a range of strategies and interventions to address it. Also, the researcher declare that have no conflict of interest in this study and they have surveyed under the research ethics.

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تأثير الفشل الكلوي النهائي علي جودة النوم لدي المرضي الخاضعين للتنقية الدموية في مستشفيات جامعة سوهاج

غُني عبد الناصر علي – لطفي ابو دهب*

قسم التمريض الباطني والجراحي (تمريض بالغين) كلية التمريض- جامعة سوهاج

* قسم الباطنة العامة – كلية الطب – جامعة سوهاج

المقدمة:

العديد من المرضي بالفشل الكلوي النهائي والخاضعين لجلسات التنقية الدموية يعانون من إضطرابات النوم الشديدة.

الهدف من البحث:

دراسة معدل انتشار إضطرابات النوم لدي مرضى الفشل الكلوي النهائي والخاضعين لجلسات التنقية الدموية وكذلك معرفة العلاقة بين جودة النوم والعوامل الاخري المصاحبة للتنقية الدموية بمستشفي سوهاج الجامعي وحدة الغسيل الدموي والتي قد تقدم معلومات هامة عن اثر التنقية الدموية علي جودة النوم وتحديد احتياجاتهم .وهذا بدورة قد يساعدهم في تقليل اضطرا بات النوم لدي مرضي الفشل الكلوي النهائي والخاضعين لجلسات التنقية الدموية وذالك لمساعدتهم علي العيش حياة أكثر إنتاجا ورضا.

طرق البحث:

نوع البحث: دراسة وصفية.

كان البحث : أجريت الدراسة في مستشفي سوهاج الجامعي وحدة الغسيل الكلوي.

عينة البحث: وتضمنت العينة مجموعة مكونة من كل مرضي الفشل الكلوي النهائي والذين يخضعون لجلسات للتنقية الدموية وعددهم 221والذين ينطبق عليهم شروط البحث.وكانت خصائص العينة(كل من له ملف في المستشفى وخاضعين للتنقية الدموية - ذكور وإناث– متعلم وغير متعلم- قادر علي إعطاء الموافقة للاشتراك في إجراء البحث- الموافقة علي إجراء البحث- ليس لدية أي مشاكل نفسية ولا مشاكل في التواصل).

أدوات البحث:وقد تم جمع البيانات لهذه الدراسة باستخدام(استمارة البيانات الشخصية للمرضي- مؤشر بيتسبيرج لقياس جودة النوم) تم جمع البيانات عن طريق المقابلة الشخصية للمرض أثناء جلسات التنقية الدموية أو إثناء الانتظار باستخدام الأدوات الأنفة الذكر.وتم تحليل البيانات باستخدام الإصدار السادس عشر من برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS).

ومن خلال هذه الدراسة تبين الآتي:-

معدل انتشار إضطرابات النوم بين مرضي الفشل الكلوي النهائي طبقا لمقياس بيتسبيرج لجودة النوم كانت 3و87% كما أن أعماره المرضي.تتراوح مابين 7-81 واغلبهم من الذكور وان 2و36% غير متعلمين.بالنسبة إلي الحالة الوظيفية .فقد بينت النتائج أن 39% لا يعملن و34.4% ربات منزل. بالنسبة إلي الأسباب الأولية لحدوث الفشل الكلوي النهائي .فقد أظهرت النتائج إن السبب الأول لحدوث الفشل الكلوي النهائي هو ارتفاع ضغط الدم والسبب الثاني هو داء السكري

كما أوضحت الدراسة إن الأغلبية العظمي من المرضي يخضعون لجلسات التنقية الدموية من 3- 4 جلسات في الأسبوع الواحد وكل جلسة تستغرق أكثر من 3 ساعات وان 8 و 58%من عينة البحث كان لهم تاريخ مرضي أكثر من 3 سنوات. كما إشارة الدراسة إلي وجود علاقة ايجابية ذات دلالة إحصائية بين السن ومكونات مؤشر بيتسبيرج لقياس جودة النوم (جودة النوم -مدة النوم- كفاءة النوم- الاضطرابات أثناء النوم وجودة النوم الشامل) .ألا أنة لا توجد علاقة ايجابية بين السن وفترة الكمون -استعمال أدوية للنوم- الاختلال الوظيفي في النهار.بالنسبة إلي تكرار جلسات التنقية الدموية وتاريخ المرض .فقد بينت النتائج إنه لا توجد علاقة ذات دلالة إحصائية بين جلسات التنقية الدموية وتاريخ المرض ومكونات مؤشر بيتسبيرج لقياس جودة النوم.وأشارت النتائج أيضا إلي وجود علاقة ذات دلالة إحصائية عالية بين مدة التنقية الدموية و الاختلال الوظيفي في النهار.كما أظهرت الدراسة بان السيدات هن أكثر عرضة لاضطرا بات النوم خاصا في(فترة الكمون-الاضطرا بات أثناء النوم واستخدام الأدوية) بالمقارنة بالرجال كما أن تكرار جلسات للتنقية الدموية كانت أكثرتاثيرا علي الاختلال الوظيفي في النهار للمرضي الذين يخضعون لجلسات للتنقية الدموية من 3-4 مرات أسبوعيا بالمقارنة باللذين يخضعون جلسات للتنقية الدموية من 1-2.أيضا وجد أن مدة جلسات التنقية الدمويةكانت أكثرتاثيرا علي المرضي الذين يخضعون لجلسة للتنقية الدموية من 2-3 ساعات بالمقارنة باللذين يخضعون جلسات للتنقية الدموية أكثر من 3ساعات . بينما لم نجد أي اختلاف ذات مغزى بالنسبة إلي تاريخ بدءجلسات للتنقية الدموية في كل المرضي.

وتؤكد نتائج البحث أن:
اضطرا بات النوم هي مشكلة حادة لمرضي الفشل الكلوي النهائي والخاضعين للتنقية الدموية وان مستوي اهتمام ممرضات وأطباء وحدة التنقية الدموية في جامعة سوهاج في هذا الوقت غير كافي.

التوصيات:-

- تحديد المرضي الأكثر عرضة لاضطرا بات النوم كالإناث والمسنين ووضع إستراتجية محددة للحد من اضطر بات النوم لديهم.
- ضرورة العمل علي زيادة كفاءة أطباء وممرضات التنقية الدموية علي التقييم الشامل للنوم وكيفية التعامل مع هذه المشكلة من خلال التعليم والتدريب والمتابعة المستمرة.
- التأكيد علي ضرورة عمل مزيد من الدراسات البحثية لتعرف علي مشاكل النوم واحتياجات المرضي ومساعدتهم علي اجتياز هذه المحنة