Quality of Sleep Among Patients Visiting an Outpatient Psychiatric Clinic: A Cross-Sectional Study From Bahrain

Mazen Khalil Ali, MD, AB (Psych)*

ABSTRACT

To study the sleep quality among psychiatric patients visiting an outpatient clinic in a Psychiatric Hospital in Bahrain. A cross-sectional study. Out-patient Department, Psychiatric Hospital, Ministry of Health, Bahrain. A total of ninety six patients were included in the study from January 2024 to December 2024. The inclusion criteria were 20-55 years old following up in an outpatient adult clinic having a diagnosis of major depression, schizophrenia and bipolar affective disorder equally selected. The Pittsburgh Sleep quality Index (PSQI) was administered to assess sleep quality. Males had a slightly higher mean score on PSQI index (7.76) compared to females (7.03). There was no significant statistical difference among the three groups of patients selected, however, schizophrenia patients had worse sleep quality (7.56) and bipolar affective disorder better quality of sleep (7.13). BMI plays an important role in determining sleep quality with obese (6.92) and overweight (7.47) patients having worst sleep quality. Sleep disturbance and poor quality of sleep is common among psychiatric patients. Body mass index also plays an important role in sleep quality. It reflects the importance of focusing on sleep quality among all psychiatric patients and improving life style and treatment approach for better sleep outcomes.

Keywords: PSQI, BMI, Sleep quality, Schizophrenia, Bipolar affective disorder, Depression.

INTRODUCTION

Sleep is affected among many patients following up in outpatient psychiatric clinics, this includes both sleep efficiency as well total sleep time[1]. Many studies have shown that psychiatric patients having different diagnoses have sleep problems[2].Some of the sleep problems have a bidirectional relationship with psychiatric illnesses. Patients having other medical comorbidities may even have worse sleep quality and reduced total sleep time[3].

The prevalence of sleep disorders is much higher among psychiatric patients in comparison to general population. It is highest among patients with depression as well as generalized anxiety disorder. Most patients report a longer sleep latency as well as shorter total sleep time[4].

There is only one public psychiatric hospital in Bahrain which covers most of the subspecialties in the field. The services include inpatient wards as well as outpatient clinics. There are four general adult firms, the author is the head of one of these firms. The cases seen in a general adult psychiatric clinic include major depression, bipolar affective disorder, schizophrenia, and other anxiety disorders. Many of the patients have substance misuse as a comorbidity.

Many of the studies conducted to analyze the sleep pattern and quality among different population samples have used the Pittsburgh sleep quality Index (PSQI). This self-reported questionnaire was developed in 1988[5]. It consists of nineteen items and it measures several aspects of sleep which include sleep duration, habitual sleep efficiency, use of sleeping medication, step disturbances, subjective sleep quality, sleep latency and daytime dysfunction. Studies have shown its validity and reliability in assessing sleep disorders[6].The PSQI has been translated to fifty six languages. It has been translated and validated in to Arabic language[7]. We have adopted this scale to study sleep quality among our patients in this study.

METHOD

The ethical approval to conduct this study was obtained from the ethical committee in the Governmental Hospitals, Bahrain. The study included ninety six Bahraini patients following up in the outpatient department in the Psychiatric hospital, Bahrain. The patients selected had schizophrenia, bipolar affective disorder and depression diagnosed according to the ICD-10 criteria by a consultant psychiatrist[8] . The number of patients (32) selected from each diagnosis were equal. Data collected from each patient include age, sex, weight and height. The intentional stratification allows for meaningful comparisons among different psychiatric diagnostic categories, this could minimize potential biases from selecting uneven group representations. Anthropometric measurements were taken to calculate the Body Mass Index(BMI). Each patient written consent is obtained and given Pittsburgh Sleep Quality Index (PSQI) to fill. The Pittsburgh Sleep quality Index (PSQI) consists of 19 self-rated questions as well as 5 questions rated by the bed partner or roommate. The nineteen items are then combined into seven component scores. Each component has a range score from 0-3. The seven component scores are then combined to yield a global score for each patient included in the study.

Data were entered into a Microsoft Excel spreadsheet and were analyzed using descriptive data mainly frequency, Welch one-way ANOVA and Independent Samples T-test. A p-value < 0.05 is considered significant for ANOVA and T-test analysis. Data collection and analysis lasted from January 2024 to December 2024.

* Consultant Psychiatrist, Psychiatric Hospital
Governmental Hospitals, College of Medicine and Medical Sciences
Arabian Gulf University, Kingdom of Bahrain.
E-mail: Mazen_K_ali@hotmail.com

RESULTS

Nintey six Bahraini patients were included in the study. Equal number of patients suffering from schizophrenia, bipolar affective disorder and depression were selected. Thirty seven (38.5%) were males and fifty nine (61.5%) were females. The mean body weight was 76.3 kg (SD=18.58), and the mean height averaged 162.7 cms (SD=9.53). The mean Body Mass Index (BMI) was 28.9 (SD=7.3), which falls within the overweight category according to standard clinical classifications.

The overall Pittsburgh Sleep Quality Index (PSQI) mean score was 7.31 (SD=2.72).This suggests moderate sleep disturbance among all mental illness categories selected. The mean PSQI score was highest among Schizophrenia patients 7.56 (SD=2.11), and least among Bipolar Affective Disorder patients 7.13 (SD=3.46). Depressed patients had a mean score of 7.25 (SD=2.49). There is no statistical difference for each component of the PSQI scale among the three groups of patients using Welch one-way ANOVA analysis. Bipolar Affective Disorder patients had a higher score on Subjective sleep quality as well as Daytime dysfunction subscores of PSQI scale. Schizophrenic patients had a higher score on Sleep latency, Habitual sleep efficiency and using of Sleep medication in comparison to other groups. Finally, depressed patients had higher scores on Step disturbance as well as Sleep duration subscales of PSQI (Table 1 and 2).

Table 1. (One-Way ANOVA (Welch) by Diagnosis , MDD, SCHIZ, BAD) by individual components of PSQI

(MDD-Major Depressive disorder, BAD-Bipolar Affective Disorder, SCHIZ-Schizophrenia) P<0.05 is statistically significant				
	F	df1	df2	p
C1	1.63	2	58.49	0.204
C2	0.32	2	60.82	0.727
C3	1.73	2	61.09	0.185
C4	0.65	2	60.23	0.526
C5	0.7	2	61.58	0.5
C6	0.61	2	61.97	0.549
C7	0.07	2	61.93	0.936
PSQI	0.25	2	59.96	0.782

Table 2. (Comparison of Individual components of PSQI scale for MDD, SCHIZ, BAD)

	Diagnosis	N	Mean	SD	SE
C1	MDD	32	1.13	0.49	0.09
	SCH	32	1.25	0.62	0.11
	BAD	32	1.47	0.98	0.17
C2	MDD	32	1.31	0.82	0.15
	SCH	32	1.38	1.04	0.18
	BAD	32	1.19	0.83	0.15
C3	MDD	32	1.31	0.9	0.16
	SCH	32	1.06	0.98	0.17
	BAD	32	0.87	0.99	0.18
C4	MDD	32	0.53	0.88	0.16
	SCH	32	0.81	1.15	0.2
	BAD	32	0.71	1.1	0.2
C5	MDD	32	1.34	0.48	0.09
	SCH	32	1.25	0.51	0.09
	BAD	32	1.19	0.59	0.1
C6	MDD	32	0.34	0.79	0.14
	SCH	32	0.56	0.8	0.14
	BAD	32	0.47	0.76	0.13
C7	MDD	32	1.28	0.73	0.13
	SCH	32	1.25	0.67	0.12
	BAD	32	1.31	0.69	0.12
PSQI	MDD	32	7.25	2.49	0.44
	SCH	32	7.56	2.11	0.37
	BAD	32	7.13	3.46	0.61

There is no statistical significant difference among males and females using T-test for each component of the PSQI scale. However, the overall PSQI score among males was higher 7.76 (SD=3.06) compared to females 7.03 (SD=2.48) which reflects a poorer sleep quality among males in comparison to females. Males had a higher score on Sleep latency, Sleep duration, Habitual sleep efficiency, Step disturbances and Using of sleep medication subscores of PSQI scale (Table 3 and 4).

Table 3. Samples T-Test by Sex (by each component of PSQI)

Independent Samples T-Test					
		Statistic		df	p
C1	Student's t	-1.55	[a]	94	0.124
C2	Student's t	0.96		93	0.34
C3	Student's t	1.29		93	0.201
C4	Student's t	1.56	[a]	93	0.122
C5	Student's t	1.34		94	0.183
C6	Student's t	0.28		94	0.781
C7	Student's t	-0.42		94	0.672
PSQI	Student's t	1.27		94	0.207

Note. H_a μ Male $\neq$ μ Female

[a] Levene's test is significant ($p < .05$), suggesting a violation of the assumption of equal variances

Table 4. (Group Descriptives comparing male vs females for each PSQI component)

	Group	N	Mean	Median	SD	SE
C1	Male	37	1.14	1	0.63	0.1
	Female	59	1.37	1	0.79	0.1
C2	Male	37	1.41	1	0.93	0.15
	Female	58	1.22	1	0.88	0.12
C3	Male	37	1.24	1	0.98	0.16
	Female	58	0.98	1	0.95	0.12
C4	Male	37	0.89	0	1.2	0.2
	Female	58	0.55	0	0.92	0.12
C5	Male	37	1.35	1	0.54	0.09
	Female	59	1.2	1	0.52	0.07
C6	Male	37	0.49	0	0.9	0.15
	Female	59	0.44	0	0.7	0.09
C7	Male	37	1.24	1	0.72	0.12
	Female	59	1.31	1	0.68	0.09
PSQI	Male	37	7.76	7	3.06	0.5
	Female	59	7.03	7	2.48	0.32

The PSQI scores of patients with higher BMI were higher. The highest score was among patients who were overweight 7.47 (SD= 2.45) as well as obese 6.92 (SD=2.88). Obese patients had the worst Subjective sleep quality. Overweight patients had higher score in Sleep latency, Habitual sleep efficiency and Step disturbances subscales of the questionnaire. Normal weight patients had worst outcomes in Sleep duration, Use of sleeping medication and Daytime dysfunction compared to other BMI categories. There is no statistical significant difference for each individual component of the scale among the three BMI categories (Table 5 and 6).

Table 5. (One-Way ANOVA (Welch) by BMI Category for each component of PSQI compared)

	F	df1	df2	p
C1	NaN	3	NaN	NaN
C2	0.21	3	13.97	0.889
C3	0.33	3	13.52	0.804
C4	0.48	3	13.66	0.702
C5	1.6	3	14.16	0.235
C6	0.27	3	13.56	0.843
C7	0.6	3	13.84	0.627
PSQI	0.36	3	14.26	0.78

Table 6. (Group Descriptives by BMI Category for each component of PSQI compared)

	BMI Cat	N	Mean	SD	SE
C1	Underweight	4	1	0	0
	Normal weight	26	1.27	0.83	0.16
	Overweight	30	1.23	0.68	0.12
	Obese	36	1.36	0.76	0.13
C2	Underweight	4	1.25	0.96	0.48
	Normal weight	26	1.35	0.94	0.18
	Overweight	30	1.37	0.93	0.17
	Obese	35	1.2	0.87	0.15
C3	Underweight	4	1.25	1.5	0.75
	Normal weight	26	1.23	0.95	0.19
	Overweight	30	1.07	0.83	0.15
	Obese	35	0.97	1.04	0.18
C4	Underweight	4	1	1.41	0.71
	Normal weight	26	0.5	0.86	0.17
	Overweight	30	0.8	1.16	0.21
	Obese	35	0.69	1.05	0.18
C5	Underweight	4	1.75	0.5	0.25
	Normal weight	26	1.27	0.53	0.1
	Overweight	30	1.3	0.53	0.1
	Obese	36	1.17	0.51	0.08
C6	Underweight	4	0.5	1	0.5
	Normal weight	26	0.58	0.86	0.17
	Overweight	30	0.43	0.86	0.16
	Obese	36	0.39	0.64	0.11
C7	Underweight	4	1	0.82	0.41
	Normal weight	26	1.42	0.64	0.13
	Overweight	30	1.27	0.69	0.13
	Obese	36	1.22	0.72	0.12
PSQI	Underweight	4	5.1	2.3	0.41
	Normal weight	26	5.5	2.35	0.42
	Overweight	30	7.47	2.45	0.45
	Obese	36	6.92	2.88	0.48

DISCUSSION

Sleep disturbance is a very common complaint among psychiatric patients. There are many assessment tools used to assess sleep quality among both clinical and nonclinical populations in studies. Among the best known tools to assess sleep quality is the Pittsburgh Sleep quality Index (PSQI). It is used both for research purposes as well as in clinical settings to study various aspects of sleep disturbances among in general population or psychiatric patients specifically[9]. This gives a better perspective about the patient's sleeping habits and help on deciding the best treatment options as well as life style habits that will help improve the sleep quality of the patient. It is self- administered questionnaire. Each component score has arrange from 0 to 3, with higher score indicating more sleep disturbance. It has seven components, and the total score of the scale ranges between 0 to 21. Higher scores indicate worse sleep quality. A score of up to 5 indicates a healthy sleep[10] .

Many studies have shown that schizophrenic patients have poor sleep quality in comparison to healthy controls: they tend to spend longer time in bed as well as longer hours of sleep. Lack of slow wave sleep as well as changes in rapid eye movement (REM) pattern are also noted in polysomnography studies of schizophrenic patients. Use of antipychotic medications could also affect their sleep pattern[11,12,13]. In our study we had similar findings. The highest PSQI score was among schizophrenic patients 7.56(SD=2.11).

Studies found a bidirectional association between sleep disturbances and depressive symptoms. A higher global PSQI score is associated with higher risk of depressive symptoms and vice versa. Depressed patients had subjective sleep quality disturbance in addition to sleep latency and sleep duration disturbance. They have difficulty initiating sleep, maintaining sleep as well as early morning waking[14]. In our study, the second highest PSQI score was among depressed patients 7.25 (SD=2.49).

Bipolar Affective disorder is also characterized by disturbance in sleep. Studies have shown shorter sleep time and increased daytime sleepiness among hypomanic patients. Decreased sleep may be a warning sign for a manic episode. Use of mood stabilizers, antidepressants as well as hypnotics affect sleep pattern even among bipolar affective disorder patients who are in remission[15,16]. This is the case for the patients who are included in our study. The group that showed the least disturbance in sleep quality were the bipolar affective disorder group 7.13 (SD=3.46).

Poor sleep quality reflected in higher PSQI scale score was found among patients with higher Body Mass Index(BMI), hemoglobin A1c, lipid profile as well as other metabolic parameters[17]. Poor sleep quality is also associated with higher incidence of obstructive sleep apnea as well as restless leg syndrome. In our study we found a higher PSQI score with patients who were obese and overweight.

All these findings among patients in our study sample may indicate they might be suffering meaningful sleep-related challenges that could impact their overall health and well-being.

Limitations of our study may include a small sample size of 96. This small number as well as equal but limited group sizes for each diagnostic category may constrain the generalizability of our results. Future research should aim to replicate these results among larger sizes, more diverse samples to enhance external validity.

CONCLUSION

Poor sleep quality among psychiatric patients with depression, schizophrenia and bipolar affective disorder is common. Although patients following up in an outpatient clinic might be in clinical remission, the sleep quality is still impaired. These issues has to be addressed thoroughly by the clinician to assure a better quality of life for our patients including improving their life style, eating habits as well as modifying their treatment modalities. Future studies should consider other factors among this group of patients such as medication effects, comorbid medical conditions, life style factors as well as psychological variables.

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acquisition, analysis and interpretation of data; (2) drafting the article and revising it critically for important intellectual content; and (3) final approval of the manuscript version to be published. Yes.

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