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Research Article

A Study of Sleep Problems among Psychiatric Out-patients in Lagos Nigeria: Focus on Hypersomnia and Narcolepsy

Ogbolu RE[1*], Nubi OP[2] and Erinfolami AR[1,2]

[1]Department of Psychiatry, Lagos University Teaching Hospital, Idi-araba, Lagos, Nigeria; [2]Department of Psychiatry, College of Medicine, University of Lagos, Idi-araba, Lagos, Nigeria

ABSTRACT

Introduction: Sleep disturbances amongst those with psychiatric disorders are quite common and may occur as a primary disorder or in association with psychiatric or organic disorders.

Aim: To study the pattern and prevalence of sleep disturbance among psychiatric out-patients and to study socio-demographic characteristics associated with hypersomnia and narcolepsy in this population.

Methods: It was a cross sectional descriptive study of consecutively, serially recruited, consenting patients attending the psychiatry out-patient clinic attending a teaching hospital in Lagos, Nigeria, over a ten week period. Ethical approval and informed consent were obtained. The information required was gathered by using the sleep 50 questionnaire and designed socio-demographic questionnaire.

Results: Schizophrenia was the most common diagnosis among the subjects (35.9%) followed by major depression (24.5%). Thirty-seven percent of the subjects had at least one sleep disorder; with some having more than one sleep disorder concurrently. The subjects with sleep disorders were mostly young adults (60.3%), single (52.9%), unemployed (60.3%), and female (52.9%). Noise at night was more associated with those who had sleep disorders. Sixteen patients (8.7%) had hypersomnia sleep disorder, while 6.0% had narcolepsy disorder. Of those with narcolepsy, major depression was most prevalent (27.3%), while for hypersomnia schizophrenia was most prevalent (50.0%).

Conclusions: The study provides useful data on narcolepsy and hypersomnia among psychiatric patients, with the finding that prevalence rates for both justify the need to improve diagnosis to avoid missed cases.

Keywords: Sleep; Psychiatric disorders; Hypersomnia; Narcolepsy

INTRODUCTION

Importance of sleep

Sleep is a very vital human activity that has important functions; therefore its disruption can lead to some undesirable consequences on overall human well-being.

Sleep promotes the restoration of brain mechanisms involved in information processing, and such functions such as concentration, reality testing, mood regulation, and task performance, to mention a few. This involves the biosynthesis of many macromolecules [1]. Findings to support the significance of sleep include high levels of growth hormone found during slow-wave sleep [2] and the increase in NREM sleep after exercise and starvation [3].

Classification of sleep disorders

The International Classification of Sleep Disorders (ICSD-2) classifies sleep disorders into Dyssomnias (including Insomnias), Parasomnias (including nightmares), and Sleep Disorders associated with Mental, Neurological, or Other Medical Disorders, and Proposed Sleep Disorders [4,5].

[*]**Correspondence to:** Raphael E. Ogbolu, Department of Psychiatry, Lagos University Teaching Hospital, 6, Harvey Road, Yaba, Lagos, Nigeria, **Tel:** +2348057543718, +2348027736363; E-mail: emexxy@yahoo.com

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Sleep and psychiatric disorders

Comparisons Sleep disturbances have been strongly linked to psychiatric disorders. It may arise due to several factors, either as part of the many complaints the patient has on presentation or during follow-up care, or as side-effects of medication used for treatment. Sleep disturbances may occur as a primary disorder or in association with psychiatric or organic disorders. Excessive sedation and sleepiness is often complained of by many psychiatric patients on psychotropic medication which often affects the daily functioning of those patients that are active, especially workers or students [6].

Ford and Kamerow in a study involving the analysis of data from 7954 adults between 1981 and 1985 found that psychiatric disorders are common among patients with sleep disturbances. It has also been reported that among patients with depression, 85% report insomnia and 10%-15% complain of hypersomnia [7,8]. The National Institute of Mental Health (NIMH) study found that 40% of those with insomnia and 46.5% of those with hypersomnia had psychiatric disorders, whereas 16.4% of those with no sleep complaints were affected by psychiatric symptoms [7].

Studies on sleep problems and sleep disorders

Insomnia is one of the most studied of sleep disorders [9-14] but other sleep disorders also deserve attention otherwise they may go undetected. In a study by Adewole et al in 2008, apnoea was reported in 2% of the general adult population studied, with the prevalence of Clinically Suspected Obstructive Sleep Apnoeas (CSOSA) found to be 1% [15].

Adewole, in another study with colleagues, examining sleep disorders and quality among general adult outpatients, found that 28% had excessive daytime sleepiness, 25% had insomnia, 20% reported history of snoring and nightmares [16].

A prevalence of 3.9% has been quoted for PLMD by Ohayon and Roth, who found it higher in women. The prevalence of RLS has been reported as 10.6%, 5.8%, 5.5%, 3.2% [17-20].

Longstreth et al. reported that information on narcolepsy is limited but the prevalence reported in many studies falls between 0.025-0.05%. This has varied with regions of the world studied; Europe 0.047%, 0.021%, USA 0.056%, Asia 0.034%, 0.04% , 0.18% and in the Middle East a prevalence of 0.04%. A retrospective study of patients attending a sleep clinic between 2013 and 2016 by Sureshbabu and colleagues, found that 2.6% had narcolepsy, with a mean age of about 23 years and a male preponderance [21-29].

The prevalence of hypersomnia or excessive daytime sleepiness is reported to be about 20% in the general population [30]. About 20% may be due to physical illnesses, and about 22% associated with mental disorders [31,32] It has been reported that idiopathic hypersomnia has prevalence rates of 4.7%, [33] and may be seen in 5%-10% of patients seen in a sleep clinic [34]. Mume found that excessive day time sleepiness was present in 44.8% of depressed patients [35].

Impact of hypersomnia and narcolepsy

Sleep problems have been associated with decreased working productivity, increased health care utilization, more days of absence from work, as well as an increased risk of serious accidents [36,37].

Untreated hypersomnia presents challenges and can negatively impact daily life. There are numerous causes of excessive daytime sleepiness of which idiopathic hypersomnia and narcolepsy are included. The associated hypersomnolence has been linked to sleep-related car crashes and other accidents [29,38-42]. Both hypersomnia and narcolepsy have been associated with reduced quality of life [43-46].

Narcolepsy is a neurological disorder and one of its features is that it can make someone fall asleep without warning. This has dangerous implications for the person as well as for others, being that sleep-attacks can occur during any activity such as when eating, crossing the street or driving a vehicle [39-41] Many studies report that more than 50% of those with narcolepsy have fallen asleep while driving and more that 30% had accident [40,41].

The number of global deaths from motor accidents is projected to reach 2.3 million by 2020, with sleepiness and fatigue accounting for 10%-15% [47]. Also with the obscuring of schedules in a world that now operates 24 hours a day all week, sleep problems are likely to increase [48]. This means that narcolepsy should not remain untreated as this increases the risk for hazards.

Diagnosis and study methods

The diagnosis of hypersomnia and narcolepsy require detailed interview and may require polysomnographic studies as well as the use of questionnaires [29]. There are various ways to study sleep disorders, include objective methods such as sleep laboratory polysomnography [49] subjective methods such as using questionnaires, [50-52] or telephone interviews [14] However, hypersomnia and narcolepsy are largely underdiagnosed, and that there are a limited number of studies compared to other sleep disorders like insomnia and sleep apnoea [29,43,53].

It is for these reasons that this study focuses on these two sleep disorders that are often unrecognized and under-diagnosed, [43,51] with the hope of stirring more research interest.

OBJECTIVES AND METHODOLOGY

The specific objectives were to study the pattern and prevalence of sleep disturbances among the adult psychiatric patients in the out-patient clinic, and to study socio-demographic characteristics associated with hypersomnia and narcolepsy in this population.

It was a cross sectional descriptive study of consecutively, serially recruited, consenting patients attending the psychiatry out-patient clinic of a teaching hospital in Lagos, Nigeria, over a ten week period. Ethical approval was obtained from the Health Research Ethics Committee of the study center and informed consent was obtained from the participants and confidentiality

assured. It included subjects aged 18 years and above, and those who could read and understand English language, while the exclusion criteria were those below 18 years old, non-consenting subjects.

The information required was gathered by using the sleep 50 questionnaire created by Victor I. Spoor maker and evaluates sleep disturbances and disorders subjectively over the subject's past four weeks [54] It has 9 subscales; Sleep Apnea (items 1-8) cut-off ≥ 15, Insomnia (9-16) cut-off ≥ 19, Narcolepsy (17-21) cut-off ≥ 7, Restless legs/PLMD (22-25) cut-off ≥ 7, Circadian Rhythm Sleep Disorders (26-28) cut-off ≥ 8, Sleepwalking (29-31) cut-off ≥ 7, Nightmares (32-36), Factors influencing sleep (37-43) and the Hypersomnia/Impact of sleep complaints on Daily Functioning (44-50) cut-off ≥ 15. It checks for sleep complaints with subscales 1-36, and detects a sleep disorder with the impact subscale. The Hypersomnia scale coincides with impact scale.

In interpretation, if a subject meets the cut-off score for a subscale as well as the impact subscale cut-off score then the subscale merits the criteria for a disorder, whereas if the subject only meets the cut-off core for a subscale without meeting the impact scale cut-off it indicates that the subscale is only a sleep problem/complaint and not a disorder. Each item is scored on a 4-point scale and there are cut-off points for each subscale. The analysis of data obtained was done using a computer applying the statistical package for social sciences; SPSS 10 [55].

RESULTS

The majority of the 184 total recruited subjects were young adults aged 20-39 years (55.4%), single (54.9%), and unemployed (51.6%). They lived mostly in flats (53.8%), experienced no noise at all at night (53.8%), and 42.9% slept alone on their beds (Tables 1 and 2).

Sociodemographic variables

Sixty eight (37.0%) of the subjects had at least one sleep disorder; with fourteen (7.6%) of them meeting the criteria for more than one sleep disorder. The sleep disorders were most common among the young adults (60.3%), single (52.9%), unemployed (60.3%), and female (52.9%) subjects (Table 1).

Table 1: Sociodemographic variables *vs.* sleep disorders.

	No Sleep Disorder			Sleep Disorder Present			Total		p value
	n	(%)	%	n	(%)	%	n	(%)	
Age									
20-39 years	61	33.2	52.6	41	22.3	60.3	102	55.4	p>0.05
40-59 years	37	20.1	31.9	13	7.1	19.1	50	27.2	
≥ 60 years	18	9.8	15.5	14	7.6	20.6	32	17.4	
Total	116	63	100	68	37	100	184	100	
Sex: Male	56	30.4	48.3	32	17.4	47.1	88	47.8	p>0.05
Female	60	32.6	51.7	36	19.6	52.9	96	52.2	
Total	116	63	100	68	37	100	184	100	
Marital status									
Single	65	35.3	56	36	19.6	52.9	101	54.9	p>0.05
Married	38	20.7	32.8	23	12.5	33.8	61	33.2	
Separated/divorced	11	6	9.5	3	1.6	4.4	14	7.6	
Widowed	2	1.1	1.7	6	3.3	8.8	8	4.3	
Total	116	63	100	68	37	100	184	100	
Occupational Status									
Employed	62	33.7	53.4	27	14.7	39.7	89	48.4	p>0.05

Unemployed	54	29.3	46.6	41	22.3	60.3	95	51.6
Total	116	63	100	68	37	100	184	100

(%)=percentage of total, %=percentage within variable, p=p value.

Sleeping conditions *vs.* sleep disorders

Most of those with sleep disorders lived in flats (50.0%); followed by single-room apartments (35.3%), while 60.3% of them shared beds with one or more persons. Most of them experienced noise at night (57.4%) compared to those who experienced no noise at all (42.6%), and this was statistically significant (Table 2).

Table 2: Sleeping conditions *vs.* sleep disorders.

	No Sleep Disorder			Sleep Disorder Present			Total		
	n	**(%)**	**%**	**n**	**(%)**	**%**	**n**	**(%)**	**p-value**
Accommodation Type									
Single Room	38	20.7	32.8	24	13.0	35.3	62	33.7	
Flat	65	35.3	56.0	34	18.5	50.0	99	53.8	
Duplex	12	6.5	10.3	10	5.4	14.7	22	12.0	p>0.05
Others	1	0.5	0.9	0	0.0	0.0	1	0.5	
Total	116	63.0	100.0	68	37.0	100.0	184	100.0	
Noise at night									
Not at all	70	38.0	60.3	29	15.8	42.6	99	53.8	
Sometimes	38	20.7	32.8	22	12.0	32.4	60	32.6	
Often	7	3.8	6.0	13	7.1	19.1	20	10.9	p<0.05
Every night	1	0.5	0.9	4	2.2	5.9	5	2.7	
Total	116	63.0	100.0	68	37.0	100.0	184	100.0	
Bed partner									
Only Self	52	28.3	44.8	27	14.7	39.7	79	42.9	
One other person	32	17.4	27.6	20	10.9	29.4	52	28.3	
2 or more others	32	17.4	27.6	21	11.4	30.9	53	28.8	p>0.05
Total	116	63.0	100.0	68	37.0	100.0	184	100.0	

(%)=percentage of total, %=percentage within variable, p=p value.

Psychiatric diagnosis

The psychiatric disorders were categorized into 5 major psychiatric diagnoses; schizophrenia (35.9%), major depression (24.5%), bipolar disorder (13.6%), anxiety disorders (8.7%), while other disorders accounted for 17.3%.

Specific sleep problems and sleep disorders

Sleep complaints from the subjects resulted in one hundred and twenty identifiable sleep subscale complaints and eighty-two separate sleep disorders (44.6%) from sixty-eight individual patients (37.0%).

These include Insomnia: As sleep complaint=55 (29.9%)/as sleep disorder =37 (20.1%).

Apnoea: As sleep complaint=6 (3.2%)/as sleep disorder=3 (1.6%).

Periodic limb movement disorder (PLMD): As sleep complaint=7 (3.8%)/as sleep disorder=4 (2.1%).

Circadian rhythm: As sleep complaint=2 (1.1%) /as sleep disorder=0 (0.0%).

Sleepwalk disorder: As sleep complaint=5 (2.7%)/as sleep disorder=5 (2.7%).

Nightmare: As sleep complaint=7 (3.8%)/as sleep disorder=6 (3.2%).

Narcolepsy: As sleep complaint=20 (10.9%)/as sleep disorder=11 (6.0%).

Hypersomnia: As sleep complaint=18 (9.8%)/as sleep disorder=16 (8.7%).

Hypersomnia

Sixteen patients had hypersomnia sleep disorder; accounting for 8.7% of the patients studied. Hypersomnia was more prevalent among the youngest age group of subjects studied; 62.5% of those 20-39 years of age, followed by those 60 years and above (25.0%). Hypersomnia was more than twice as prevalent among the female (68.8%) than male (31.3%) subjects. It was more prevalent among the single (50.0%) subjects as well as among the unemployed (68.8%) (Tables 3 and 4).

Table 3: Sociodemographic variables *vs.* hypersomnia.

	No Hypersomnia			Hypersomnia Present			Total		p value
	n	(%)	%	n	(%)	%	n	(%)	
Age									
20-39 years	92	50.0	54.8	10	5.4	62.5	102	55.4	p>0.05
40-59 years	48	26.1	28.6	2	1.1	12.5	50	27.2	
≥ 60 years	28	15.2	16.7	4	2.2	25.0	32	17.4	
Total	168	91.3	100.0	16	8.7	100.0	184	100.0	
Sex									
Male	83	45.1	49.4	5	2.7	31.3	88	47.8	
Female	85	46.2	50.6	11	6.0	68.8	96	52.2	
Total	168	91.3	100.0	16	8.7	100.0	184	100.0	p>0.05
Marital status									
Single	93	50.5	55.4	8	4.3	50.0	101	54.9	
Married	56	30.4	33.3	5	2.7	31.3	61	33.2	
Separated/divorced	13	7.1	7.7	1	0.5	6.3	14	7.6	
Widowed	6	3.3	3.6	2	1.1	12.5	8	4.3	
Total	168	91.3	100.0	16	8.7	100.0	184	100.0	p>0.05
Occupational Status									
Employed	84	45.7	50.0	5	2.7	31.3	89	48.4	
Unemployed	84	45.7	50.0	11	6.0	68.8	95	51.6	
Total	168	91.3	100.0	16	8.7	100.0	184	100.0	p>0.05

(%)=percentage of total, %=percentage within variable, p= p value.

Table 4: Sleeping conditions *vs.* hypersomnia.

	No Hypersomnia			Hypersomnia Present			Total		p-value
	n	(%)	%	n	(%)	%	n	(%)	
Accommodation Type									
Single Room	57	31.0	33.9	5	2.7	31.3	62	33.7	
Flat	91	49.5	54.2	8	4.3	50.0	99	53.8	
Others	19	10. 3	11.3	3	1.6	18.8	22	12.0	
Duplex	1	0.5	0.6	0	0.0	0.0	1	0.5	
Total	168	91.3	100.0	16	8.7	100.0	184	100.0	p>0.05
Noise at night									
Not at all	87	47.3	51.8	12	6.5	75.0	99	53.8	
Sometimes	57	31.0	33.9	3	1.6	18.8	60	32.6	
Often	19	10.3	11.3	1	0.5	6.3	20	10.9	
Every night	5	2.7	3.0	0	0.0	0.0	5	2.7	
TOTAL	168	91.3	100.0	16	8.7	100.0	184	100.0	p>0.05
Bed partner									
Only Self	73	39.7	43.5	6	3.3	37.5	79	42.9	
One other person	48	26.1	28.6	4	2.2	25.0	52	28.3	
2 or more others	47	25.5	28.0	6	3.3	37.5	53	28.8	
Total	168	91.3	100.0	16	8.7	100.0	184	100.0	p>0.05

(%)=percentage of total, %=percentage within variable, p=p value.

Narcolepsy

Eleven patients had narcolepsy disorder. Narcolepsy was most prevent among those aged 20-39 years (54.5%), followed by those 40-59 years (27.3%) and those 60 years and above (18.2%) (Table 5). Narcolepsy was also more prevalent among male (63.6%), most prevalent among the single subjects (54.5%), and also slightly more among the employed (54.5%) (Table 6).

Table 5: Sociodemographic variables *vs.* narcolepsy.

	No Narcolepsy			Narcolepsy Present			Total		p value
	n	(%)	%	n	(%)	%	n	(%)	
Age									

20-39 years	96	52.2	55.5	6	3.3	54.5	102	55.4	
40-59 years	47	25.5	27.2	3	1.6	27.3	50	27.2	
≥ 60 years	30	16.3	17.3	2	1.1	18.2	32	17.4	
Total	173	94.0	100.0	11	6.0	100.0	184	100.0	p>0.05
Sex									
Male	81	44.0	46.8	7	3.8	63.6	88	47.8	
Female	92	50.0	56.2	4	2.2	36.4	96	52.2	
Total	173	94.0	100.0	11	6.0	100.0	184	100.0	p>0.05
Marital status									
Single	95	51.6	54.9	6	3.3	54.5	101	54.9	
Married	57	31.0	32.9	4	2.2	36.4	61	33.2	
Separated/divorced	13	7.1	7.5	1	0.5	9.1	14	7.6	
Widowed	8	4.3	4.6	0	0.0	0.0	8	4.3	
Total	173	94.0	100.0	11	6.0	100.0	184	100.0	p>0.05
Occupational Status									
Employed	83	45.1	48.0	6	3.3	54.5	89	48.4	
Unemployed	90	48.9	52.0	5	2.7	45.5	95	51.6	
Total	173	94.0	100.0	11	6.0	100.0	184	100.0	p>0.05

(%)= percentage of total, %=percentage within column, p= p value

Table 6: Sleeping conditions *vs* narcolepsy.

	No Narcolepsy			Narcolepsy Present			Total		p value
	n	(%)	%	n	(%)	%	n	(%)	
Accommodation Type									
Single Room	59	32.1	34.1	3	1.6	34.1	62	33.7	
Flat	93	50.5	53.8	6	3.3	54.5	99	53.8	
Duplex	20	10.9	11.6	2	1.1	18.2	22	12.0	p>0.05
Others	1	0.5	0.6	0	0.0	0.0	1	0.5	
Total	173	94.0	100.0	11	6.0	100.0	184	100.0	
Noise at night									
Not at all	92	50.0	53.2	7	3.8	63.6	99	53.8	p>0.05

Sometimes	58	31.5	33.5	2	1.1	18.2	60	32.6	
Often	18	9.8	10.4	2	1.1	18.2	20	10.9	
Every night	5	2.7	2.9	0	0.0	0.0	5	2.7	
Total	173	94.0	100.0	11	6.0	100.0	184	100.0	
Bed partner									
Only Self	74	40.2	42.8	5	2.7	45.5	79	42.9	p>0.05
One other person	49	26.6	28.3	3	1.6	27.3	52	28.3	
2 or more others	50	27.2	28.9	3	1.6	27.3	53	28.8	
Total	173	94.0	100.	11	6.0	100.0	184	100.0	

(%)=percentage of total, %=percentage within column, p=p value

Hypersomnia and narcolepsy among major psychiatric diagnoses

Among single psychiatric diagnostic entities, fifty percent of those with hypersomnia had schizophrenia, followed by those with major depression (31.3%), and other disorders. Of the eleven subjects with narcolepsy, 27.3% had by major depression, 18.2% had schizophrenia and bipolar disorder each and none had anxiety disorder as shown in Tables 7 and 8.

Table 7: Narcolepsy *vs* major psychiatric diagnoses.

	No Hypersomnia		Hypersomnia Present		No Narcolepsy		Narcolepsy Present	
	n	%	n	%	n	%	n	%
Major Depression (24.5%)	40	23.8	5	31.3	42	24.3	3	27.3
Bipolar disorder (13.6%)	24	14.3	1	6.3	23	13.3	2	18.2
Schizophrenia (35.9%)	58	34.5	8	50	64	37	2	18.2
Anxiety disorders (8.7%)	16	9.5	0	0	16	9.2	0	0
Other disorders (17.3%)	30	17.9	2	12.5	28	16.2	4	36.4
Total (100.0%)	168	100	16	100	173	100	11	100

%=percentage within column

Table 8: Sleep problems.

Sleep Problem Category	Sleep complaint meets disorder criteria		Sleep complaint does not meet disorder criteria	
	n	%	n	%
Apnoea	3	(1.6)	6	(3.2)
PLMD	4	(2.1)	7	(3.8)
Circadian Rhythm disorder	0	(0.0)	2	(1.1)
Sleepwalking	5	(2.7)	5	(2.7)
Nightmare	6	(3.2)	7	(3.8)
Hypersomnia	6	(8.7)	18	(9.8)

Narcolepsy	11	(6.0)	20	(10.9)

DISCUSSION AND CONCLUSION

Over one-third of the out-patients studied had at least one form of sleep disorder. This implies that sleep disorders are a common feature of psychiatric disorders. It is similar to findings by other researchers such as Homiball et al. [56] who reported 40.75%. The finding also hints at a possibly strong link between sleep problems and psychiatric disorder, which has been studied by many [29,57].

Compared to the general population, sleep disorders among our patients was higher at 37.0%. Chinawa et al. found that 11.3% of their medical student population experience unusual sleep practices such as sleepwalking, talking or night terrors [51]. A closer figure (35.5%) was found among antenatal patients [58] possibly related to the pregnant state and associated factors such as urinating more frequently at night.

The prevalence rates reported in the study for sleep complaints are higher than for sleep disorders, and are not different from those reported by some other studies [56]. This suggests that while many people may not meet the requirement for a sleep disorder they may have sleep complaints that should be detected, treated and monitored to avoid worsening.

The 1.6% prevalence of sleep apneas is similar to that found by Adewole et al. [15] where apnoea was reported in 2% of the general adult population studied, and the prevalence of Clinically Suspected Obstructive Sleep Apnoeas (CSOSA) was 1%. This similarity is despite the difference in populations studied, which suggests that psychiatric disorders may not have bearing on the presence of apnoea. A prevalence of 2.1% was found for PLMD, similar but lower than the 3.9% by Ohayon and Roth [14].

The 6.0 % prevalence of narcolepsy is higher than the range reported by Longstreth et al. which put it at 0.025%-0.05% [21] Prevalence of narcolepsy in recent years has varied with regions of the world studied and methodology as has been the case with other sleep disorders. Homiball [56] who reported 12.5% prevalence for narcolepsy symptoms compared to 10.9% in our study. This is higher than the 6.0% we found for narcolepsy disorder. These differences may be attributable to the different methodologies.

Of course our reported figures are much higher than prevalence rates for narcolepsy in the general population which has been variously put at 0.04% by Ohayon [59], and Han et al. [26], 0.056% by Silber et al. [24], 0.18% by Tashiro et al. [27], and 2.7% by Spoormaker and Bout [57], and more likely attributable to the different populations and regions of the world studied.

Hypersomnia ranks as the second most prevalent of the sleep disorders in this study and this may be partly influenced by the role of sedating medication which some of the patients were on at some point or the other. As has been mentioned above, hypersomnia, and narcolepsy, can pose serious hazards [38-40,42].

The most prevalent psychiatric diagnosis among our patients with sleep disorders was schizophrenia, whereas some researchers found that their subjects were mostly depressed (44.8%) [35]. The reason for this may have to do with the methods of investigation and possibly the state of health of the respondents at the time of the study. Schizophrenia was the most prevalent psychiatric disorder among those with hypersomnia whereas among those with narcolepsy major depression was most prevalent. This difference may be related to the difference in medication typically used to treat both psychiatric conditions, or possibly related to their pathophysiology. While this was not the scope of this study it is noteworthy to point out the differences for future investigation.

The sociodemographic characteristics of our subjects with sleep disorders were similar to the findings by Adewole et al. as they were more likely female, but in a younger age group of 20-39 years compared to theirs of 40-49 years [29]. Their study found a high rate of excessive daytime sleepiness, compared to 8.7% for hypersomnia in this study. Homiball 56 also found that those with sleep disorder symptoms were mostly young (21-39 years) and mostly not married, similarly to ours. However the rates from other studies are quite variable, and were either higher or lower, as it is reported to be about 20% in a general population study by Ohayon [30] but idiopathic hypersomnia specifically was seen in 5-10% of patients visiting a sleep clinic [29] Noise at night seemed to influence the likelihood of sleep disorders as noise at night was more associated with those with sleep disorders compared to those without. This may predispose to some types of sleep disorders like insomnia than others, and so this finding may be a function of the 20.1% who had insomnia.

The limitation of the study includes not exploring the role of medication side-effects especially with regards to drowsiness and excessive sleep. Also, although the subjects were assessed to be in a stable state subjectively and based on the consultant's assessment, it would have also been more informative to objectively assess their mental stability during the study using specific instruments.

The study provides useful data on narcolepsy and hypersomnia among psychiatric patients, with the finding that prevalence rates for hypersomnia and narcolepsy among the group of patients studied is considerably higher than compared to the general population figures from reported studies. The impact that these disorders can have on health-related quality of life makes it important to screen for and treat accordingly. While, except for insomnia, there are more studies on sleep symptoms rather than sleep disorders, the findings of this study suggests that there is more to be done in this area and that these conditions are not rare among this sub-population. This establishes grounds for further research into the less-studied sleep disorders among patients with mental health disorders. This may best be explored by future comparison studies.

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