

# The Clinical Correlates And Self-Management Of Insomnia Among Patients Presenting In A Tertiary Health Institution, South West Nigeria

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**Abstract: Background:** Sleep has important biological functions that are essential for normal restorative, conservative and adaptive functions. The lack or inadequacy of it will alter these normal biological functions in man which may negatively affect various organs and systems. The knowledge of what people with insomnia are using will assist clinician on modality of approach in proper management

**Aim:** To determine the clinical correlates of insomnia and self management among patients presenting with insomnia.

**Method:** A descriptive cross sectional study of three hundred and seventeen adults selected through systematic random sampling technique. An interviewer administered questionnaire was used to collect the data.

**Result:** The following clinical conditions were observed to have positive association with insomnia. This include Hypertension ( $X^2$  30.101;  $P$  value  $<0.001$ ), Heart disease ( $X^2$  38.040;  $P$  value  $<0.001$ ), Fall/Pains ( $X^2$  24.306;  $P$  value  $<0.001$ ), Arthritis/Joint Pains ( $X^2$  28.359;  $P$  value  $<0.001$ ), Depression ( $X^2$  25.277;  $P$  value  $<0.001$ ), Other Psychiatric diseases ( $X^2$  42.639;  $P$  value  $<0.001$ ). Over the counter medication has significant association with presence of insomnia but not with herbal usage ( $X^2$  33.399;  $P$  value  $<0.001$ ). a larger proportion of insomniacs who were using over the counter medication have stopped its usage as the time of the study ( $X^2$  4.629;  $P$  value  $<0.039$ )

**Conclusion:** Multiple clinical morbidities are associated with insomnia. The desire to improve the sleep quality and quantity of an insomniac, they tend to embark on self-management. Clinician with this understanding must therefore take proactive approach to find what type of self management the individual is using. This will help to inform, educate and counsel appropriately against dangerous steps and measures that may have been embarked upon.

## I. INTRODUCTION

One third of human life is spent sleeping, yet there is limited inquiry into this aspect compared to other areas of neuroscience scientifically. The greatest mystery of all times has remain the biological functions of sleep, though essential for the normal restorative, conservative and adaptive functions of human system, yet there are some people in the population who suffer from various sleep disorders of which insomnia is the commonest. The daily total sleep requirement differs and

decreases in duration from infancy, childhood, adolescence through middle and to old age. A total of 16 hours (hrs) is required in new-borns, 11 hrs by the time the child is 3 to 5 years (yrs), 10 hrs in adolescents, 7 to 8 hrs in adults and less than 7 hrs in the elderly. Once there is a sleep disorder for whatever reason and at any age, it ultimately has an adverse effect on the day to day running of the individual. Sleep disturbance causes clinically significant distress or impairment in social, occupational, educational, academic, behavioural, or other important areas of functioning. Insomnia may

accompany several disorders including sleep, medical and psychiatric ones and is often thought as both a medical sign and symptom.

Insomnia has been linked with increasing falls in the elderly and consequent fractures and domestic injuries that could have been avoided. In the younger age group, the consequences of insomnia ranges from impaired attention, concentration, quality of life, to increased rates of absenteeism with low productivity and accidents at work, home and on the road without playing down on its contribution to ill health. It has also been predicted that a shortened life expectancy with the likelihood of developing affective disorders, substance abuse and adverse health disorders has been associated with insomnia.

People with insomnia often resort to varying means of aiding and improving their sleep pattern and duration. Some measures include herbal and over the counter drug usage. When clinicians have an understanding of what a patient has tried prior to the presentation in a health facility, it helps such clinician on how to counsel, educate and manage the insomnia patient. Such management may include educating on the dangers of wrong measures such an insomniac may have embarked upon. If self management is wrong in the first instance, there may be future negative consequences in addition to possible health hazards of the measures embarked upon.

## II. METHODS

This study was a descriptive cross sectional study of three hundred and seventeen adults selected through systematic random sampling technique. They were recruited over a period of 4 months spanning July to October 2017. Sample size was calculated using the formula;  $n = (Z\alpha)^2 p q / d^2$ , where  $p = 25\%$  (the proportion of the target population estimated to have insomnia. A minimum sample size aforementioned was arrived at.

The respondents' sleep history was sought using the Pittsburgh sleep quality index (PSQI). Patient Health Questionnaire-9 (PHQ-9) and clinical examination findings were done to elicit the clinical conditions that the respondents have at presentation. The sleep history through the Pittsburgh sleep quality index (PSQI) elicited the 7 components of sleep vis-à-vis subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction over the last month. In addition to these, the presence of insomnia in their family and what the measures the respondents used for inducing sleep or manage their sleep difficulties were also enquired about. To assess other clinical parameters, their body mass index, systemic examinations, packed cell volume and random blood sugar were done. Data was analyzed using SPSS version 20. Qualitative and quantitative variables were summarized using frequencies, percentages and mean. Measure of association was carried out using chi-square. The level of statistical significance was set up  $P < 0.05$ .

## III. RESULTS

Variables	n	%
<b>Age (years)</b>		
18 - 24	22	6.9
25 - 39	111	35.0
40 - 59	184	58.0
<b>Mean ± SD</b>	42.3 ± 12.2	
<b>Gender</b>		
Male	104	32.8
Female	213	67.2
<b>Marital status</b>		
Married	235	74.1
Not Married	82	25.9
<b>Religion</b>		
Christianity	293	92.4
Islam	19	6.0
NA	5	1.6

Table 1: Patients' demographic characteristics (N = 317)

Variables	Insomnia, n (%)		$\chi^2$	df	P value
	Present	Absent			
<b>Herbal use</b>					
		9			
Yes	2 (18.2)	(81.8)	0.584	1	0.445
No	88 (28.8)	218 (71.2)			
<b>Drug use</b>					
Yes	34 (59.6)	23 (40.4)	33.399	1	< 0.001
No	56 (21.5)	204 (78.5)			
<b>Stopped drug use (N = 53)</b>					
Yes	17 (81.0)	4 (19.0)	4.269	1	0.039
No	17 (53.1)	15 (46.9)			
<b>Duration of drug use (N = 39)</b>					
Mea	1.06 ±	0.69 ±			
n ± SD	0.57	0.11	1.708	37	0.096

Table 2: Medical history and presence of insomnia

Variables	Insomnia, n (%)		$\chi^2$	df	P value
	Present	Absent			
<b>Depression (PHQ)</b>					
Minimal	61 (23.6)	197 (76.4)	35.826	3	< 0.001
Mild	11 (29.7)	26 (70.3)			
Moderate	10 (71.4)	4 (28.6)			
Severe	8 (100.0)	0 (0.0)			
<b>Pulse rate</b>					
< 60 bpm	5 (41.7)	7 (58.3)	3.680	2	0.159
60 - 100 bpm	67 (26.1)	190			

		(73.9)			
> 100 bpm	18 (37.5)	30 (62.5)			
<b>Blood pressure</b>					
< 99 / 60 mmHg	0 (0.0)	1 (100.0)	29.054	2	< 0.001
91 - 139 / 60 - 89 mmHg	53 (21.4)	195 (78.6)			
≥ 140 / 90 mmHg	37 (54.4)	31 (45.6)			
<b>Heart sound</b>					
Abnormal	7 (43.8)	9 (56.3)	1.955	1	0.162
Normal	83 (27.6)	218 (72.4)			
<b>Respiratory rate</b>					
Abnormal	42 (41.2)	60 (58.8)	12.092	1	0.001
Normal	48 (22.3)	167 (77.7)			
<b>Breath sound</b>					
Abnormal	11 (42.3)	15 (57.7)	2.698	1	0.100
Normal	79 (27.1)	212 (72.9)			
<b>BMI category</b>					
Underweight	9 (25.0)	27 (75.0)	8.368	2	0.015
Normal	29 (21.0)	109 (79.0)			
Overweight / Obese	52 (36.4)	91 (63.6)			
PCV (%)	37.5 ± 5.1	3.1 ± 35.1	4.014	315	< 0.001*
FBS (mmol/L)	5.8 ± 1.6	5.1 ± 0.9	3.874	315	< 0.001*

\* Independent samples t test applied

Table 3: Clinical findings and presence of insomnia

Variables	Insomnia, n (%)		$\chi^2$	df	P value
	Present	Absent			
<b>Hypertension</b>					
Yes	44 (51.2)	42 (48.8)	30.101	1	< 0.001
No	46 (19.9)	185 (80.1)			
<b>Heart disease</b>					
Yes	22 (78.6)	6 (21.4)	38.040	1	< 0.001
No	68 (23.5)	221 (76.5)			
<b>Fall / Pains</b>					
Yes	27 (58.7)	19 (41.3)	24.306	1	< 0.001
No	63 (23.2)	208 (76.8)			
<b>Impaired cognition</b>					
Yes	15 (83.3)	3 (16.7)	28.335	1	< 0.001
No	75 (25.1)	224 (74.9)			
<b>Diabetes mellitus</b>					
Yes	3 (37.5)	5 (62.5)	0.335	1	0.563
No	87 (28.2)	222 (71.8)			
<b>Arthritis / Joint pains</b>					
Yes	31 (58.5)	22 (41.5)	28.359	1	< 0.001
No	59 (22.3)	205 (77.7)			
<b>Depression</b>					
Yes	17 (73.9)	6 (26.1)	25.277	1	< 0.001
No	73 (24.8)	221 (75.2)			
<b>Other Psychiatric illness</b>					
Yes	19 (90.5)	2 (9.5)	42.639	1	< 0.001
No	71 (24.0)	225 (76.0)			

Table 4: Co-morbidity associated with insomnia

#### IV. DISCUSSIONS

Clinical conditions that were observed to have statistically significant association with insomnia include Hypertension, Heart disease, Falls/Pains, Impaired cognition, Arthritis/ Joint Pains, Depression and other psychiatric illness. The findings of Jarrin et al agreed with this multiple association of clinical conditions with insomnia when they noted that multitude of health consequences abound with sleep disorders. In this study, it was also observed that the most of the respondents with insomnia have a statistically significant association with abnormal blood pressure reading. Calhoun et al has reported that sleep disorders alter the blood pressure responses and increases hypertension. This is further corroborated by Jarrin et al in the systematic review of insomnia and hypertension.<sup>12</sup> Heart diseases were also observed to have an association with insomnia among the respondents in this study though on clinical examination of respondents with insomnia, both the pulse rate and the heart sounds were not statistically associated with insomnia. This disparity may be because of limited understanding of what heart disease entails among the respondents. Some may associate breathing difficulties to heart related ailments. In this study, abnormal respiratory rate were noted to have statistical significance to presence of insomnia. However, among the US population, an association has been reported between insomnia and incident cardiovascular disease.

Pain from falls, arthritis and joint pains were all associated with the presence of insomnia in this study. Studies have demonstrated the association between pains and insomnia. While pain can be aggravated by insomnia, insomnia have also been demonstrated to increase body pains. It is however worth noting questions still about the causality in the association between pain and insomnia<sup>15</sup>. Another clinical condition that is associated with insomnia in this study is depression. In the respondents studied, the worse the depressive disorders, the higher the percentage of those with insomnia. A meta-analysis of prospective cohort studies by Li et al indicates that insomnia is strongly associated with increased risk of depression.

Increasing weight gain and obesity was observed to be associated with Insomnia in this study. It has however been reported that there are both positive and negative associations between insomnia and weight gain/obesity. Diabetes mellitus was not associated with insomnia though the clinical findings of fasting blood sugar of between 4.2mmol/L and 7.4mmol/L revealed an association with insomnia as against 4.2mmol/L to 6.0mmol/L in non Insomniacs. This result may be accounted for by other clinical conditions that may be present in patients with this range of blood sugar level.

Self management with both herbal and medications were observed in this study. However, it is only over counter medication that was found to have positive association with insomnia. It was also observed that a larger proportion of those who used drugs to aid sleep have stopped the use at the time of the study. This may be as a result of the non effectiveness of the drugs used. It has been reported that most people with insomnia used at least one form of over the counter medication to aid sleep.

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