

# Prevalence of Insomnia in Adults and its Correlation with Medical Comorbidities in Chengalpattu District - A Cross Sectional Study

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**Abstract:** ***Introduction:** Insomnia is the common sleep disorder with difficulty in initiating and maintaining sleep. Insomnia affects all ages significantly. The incidence of insomnia is showing an upward trend in the present days, keeping it as the background the current study aims to find out the prevalence of chronic insomnia and its association to the socioeconomic factors and persisting medical comorbid conditions. **Materials and Methods:** A cross sectional study was conducted among 198 participants attending RHTC OPD of Chettinad Hospital & Research institute. Athens insomnia scale is used as a study tool to find the prevalence of insomnia. Chi-square test was used to find out the association of various factors. **Results:** The prevalence of insomnia was found to be 38.4%. Age, Education, Headache/migraine, Diabetes, Cardiovascular disease and musculoskeletal disease were significantly associated with insomnia ( $p < 0.05$ ). **Conclusion:** Insomnia was found to be a common problem in patients attending OPD for various illness. The individuals who are found to be insomniacs should receive proper health education and counselling at the primary health care level itself.*

**Keywords:** Insomnia, Prevalence, Tamil Nadu

## 1. Introduction

Insomnia is defined as “dissatisfaction with sleep either qualitatively or quantitatively. This is usually associated with one or more of the following: (1) difficulty initiating sleep, (2) difficulty maintaining sleep, characterized by frequent awakenings or problems returning to sleep after awakenings, and (3) early-morning awakening with inability to return to sleep”<sup>1</sup>. Insomnia is classified as Acute (short term) and Chronic (long term), Acute Insomnia is the inability to get good sleep for less than a month. Chronic insomnia continues for over a month<sup>2</sup>. Insomnia will negatively impact on work performance, quality of life, our energy level, emotions, and overall health. Emotional stress, heart problems, obesity, diabetes, metabolic syndrome, certain medications, and alcohol are important risk factors for insomnia<sup>3</sup>. Primary and secondary insomnia are the two forms. Primary insomnia is the inability to fall asleep due to any underlying medical, psychological, or environmental conditions (such as drug abuse or medications). Secondary insomnia occurs when a primary medical condition, a mental illness, or another sleep issue causes symptoms of insomnia. It might also result from using, abusing, or being exposed to certain chemicals<sup>4</sup>. Numerous studies conducted around the world have revealed that 10%–30% of people suffer from insomnia, with some estimates reaching 50%–60%.<sup>5</sup> In India, 9% of people experience insomnia, while up to 30% of people have sleeping difficulties at some point in their lives. The Neurological Society of India estimates that difficulty falling and staying asleep affects at least 28% of the population<sup>6</sup>.

Insomnia affects the elderly population significantly and the elderly population in India is growing rapidly. The majority

of studies about chronic insomnia were conducted abroad and there is less literature available regarding the prevalence of insomnia in Indian adults. With this background, this cross-sectional study was conducted with the objective to find out the prevalence of chronic insomnia and also finding the association between socioeconomic factors and medical comorbidities with Chronic Insomnia.

## 2. Materials and Methods

The study was conducted as a cross sectional study in the Rural Health & training centre which is the field practising area of Chettinad Hospital and Research Institute, Chengalpattu district. There are 12 villages under the field practice area. The study participants were selected from people above 18 and residing in the rural areas of field practising area of a tertiary private hospital. Psychiatric patients, alcoholics and participants who are not willing to participate were excluded from the study. The study was carried out for 3 months from January 2022 to March 2022. Based on the study by Bhaskar S et al<sup>5</sup> sample size was calculated as 198. Using the Systemic random sampling technique participants were selected who were attending RHTC OPD. A questionnaire with an Athens insomnia scale, socio-demographic characters & questions related to co-morbidities were used as a Study tool. The collected data was entered in MS Excel 2019 and analysed using IBM SPSS V22.0. Socio demographic patterns were expressed in frequency and chi square test were applied and a p-value  $< 0.05$  was considered as a significant.

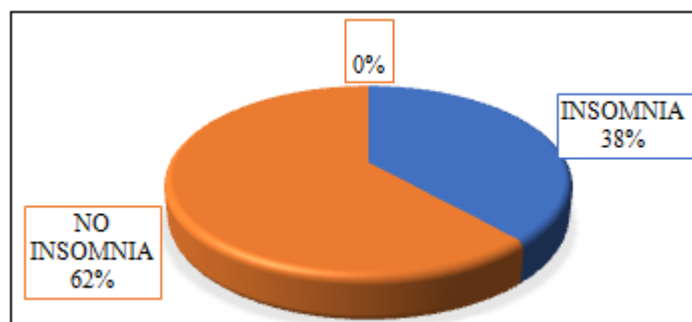
### 3. Results

**Table 1: Socio Demographic Distribution:**

Characteristics	Number	Frequency (%)
<b>Age</b>		
<35 years	78	39.4
>35 years	120	60.6
<b>Gender</b>		
Male	104	52.5
Female	94	47.5
<b>Marital status</b>		
Unmarried	58	29.3
Married	140	70.7
<b>Type of family</b>		
Nuclear	130	65.7
Joint	68	34.3
<b>Education</b>		
Postgraduate	52	25.4
Undergraduate/Diploma	96	48.4
School	50	26.2
<b>Occupation</b>		
Unemployed	66	33.3
Employed	132	66.7
<b>Socioeconomic class</b>		
Class I	82	41.4
Class II	58	29.3
Class III	34	17.2
Class IV	24	12.1

The socio-demographic distribution [TABLE 1] among the 198 participants was collected and showed 120(60.6%) were more than age 35 years, and 78(39.4%) were below the age of 35 years. Male participants were more 104(52.5%) than female participants 94(47.5%) participated in the study. Of the 58(29.3%) who were unmarried, and 140(70.7%) are married. In education 52(25.4%) participants completed postgraduate, 96(48.5%) participants obtained either an Undergraduate or diploma degree and 50(26.3%) people had gone to school. 132(66.7%) people were employed and 66(33.3%) were unemployed. Regarding the socio-economic class based on modified BG prasad's classification<sup>11</sup> 82(41.4%) majority of the participants belongs to

socioeconomic class I, 58(29.3%) belonged to class II, 34(17.2%) belongs to class III, 24(12.1%) participants belonged to class IV of socioeconomic class.



**Figure 1**

Figure 1 explains 38.4% (76) people had Insomnia and 61.6% (122) participants do not have insomnia among 198 participants.

Table 2 shows the association between Socio-Demographic characteristics and Insomnia and statistically significant was obtained for Age and Education between Insomnia ( $p < 0.001$ ).

**Table 2:** Association between Sociodemographic Characters and Insomnia

Variables	Insomnia Present	Insomnia Absent	p-value
<b>Age</b>			<b>0.001*</b>
>35	59	61	
<35	17	61	
<b>Gender</b>			0.884
Male	39	65	
Female	37	57	
<b>Marital status</b>			0.24
Married	61	79	
Unmarried	15	43	
<b>Type of family</b>			0.878
Nuclear	49	81	
Joint	27	41	
<b>Education</b>			<b>0.004*</b>
Postgraduate	15	35	
Undergraduate/Diploma	31	65	
School	30	22	
<b>Occupation</b>			0.644
Unemployed	27	39	
Employed	49	83	
<b>Socioeconomic class</b>			0.368
Class I	34	48	
Class II	18	40	
Class III	12	22	
Class IV	12	12	

\*p=0.05

Table 2 shows the association between Socio Demographic characters and Insomnia and we found statistically significant with Age (p=0.001) and Education (p=0.004).

**Table 3:** Association between Medical Comorbidities and Insomnia

Disease	Insomnia Present	Insomnia Absent	Total	P-Value
<b>Headache/Migraine</b>				<b>0.001*</b>
Yes	38	24	62	
No	38	98	136	
<b>Gastritis</b>				0.30
Yes	27	25	52	
No	49	97	146	
<b>Diabetes</b>				<b>0.001*</b>
Yes	38	14	52	
No	38	108	146	
<b>Hypertension</b>				0.174
Yes	17	17	34	
No	59	105	154	
<b>Cardiovascular Disease</b>				<b>0.001*</b>
Yes	22	6	28	
No	54	116	170	
<b>Thyroid Disorder</b>				0.058
Yes	10	6	16	
No	66	116	182	
<b>Musculoskeletal disease</b>				<b>0.001*</b>
Yes	18	4	22	
No	58	118	176	

\*p=0.05

Table 3: shows the association between Medical Comorbidities and Insomnia and in our study we found it statistically significant with headache/migraine (p=0.001), Diabetes (p=0.001), cardiovascular disease (p=0.001) and musculoskeletal disease (p=0.001).

#### 4. Discussion

The present study finding which was done among the general population in the rural areas at Chengalpattu District, Tamil Nadu showed that the prevalence of insomnia was 38.4%. Most of the insomniacs are males than females. The Majority of the married participants are more

insomniacs than single participants. In our study, we found an association with age, education, headache/migraine, Diabetes, cardiovascular disease and musculoskeletal disease.

A study by Bhaskar S et al showed 33% in the prevalence of insomnia which is close to our results and they also found significance with age and diabetes which is also similar to our results<sup>5</sup>.

A study by Mausumi Basu et al found prevalence of insomnia was 45.13% which was higher than our study and this difference may be due to they had conducted a study on acutely ill patients of a tertiary hospital in Kolkatta. They found a significant association between chronic insomnia with hypertension, diabetes, high cholesterol, heart disease, kidney disease, thyroid disease, asthma and chronic pain and gastritis and we found a significant association for Headache/migraine, Diabetes, cardiovascular Disease and Musculoskeletal Disease<sup>7</sup>.

Another study by Qadri S et al which was conducted on Patients Admitted in the Medical ward of a Tertiary Care Hospital of Kashmir Valley reported that the prevalence of insomnia was 45.6% which shows higher distribution than our present study and the difference may be due to they had conducted a study among sick patients who were admitted in the ward for more than 7 days<sup>8</sup>.

On the contrary, a study done by Kumari R et al rural area of Jammu & Kashmir which was conducted among rural adults showed a prevalence of insomnia of 12.8% which is better than our study. This difference in prevalence may be due to different assessment scales. Similar to our study they also found significance for diabetes<sup>9</sup>.

Our study findings were supported by the study conducted by Shakeel .H .A et al among medical students in Pakistan demonstrated a prevalence of insomnia of 40.74% which is closer to our study results<sup>10</sup>.

Zheng W et al did a study in Guangzhou, China and reported prevalence of insomnia was 22.1% which is better than our study and they found a positive association between old age and severe depressive symptoms. This difference may be due to different assessment scales and better socio economic status in the previous study<sup>12</sup>.

## 5. Conclusion

A prevalent sleep condition that affects a large portion of the general population today is insomnia. People who suffer from insomnia are unaware of their condition. Therefore, when patients visit doctors for any ailments, the focus should be on getting information on sleep patterns, and they shouldn't be disregarded. Elderly people, patients with diabetes, cardiovascular disease, and musculoskeletal disease should be screened for insomnia. Those who are discovered to be insomniacs should receive appropriate health education and counselling at the primary health care level itself.

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