



Insomnia among Attendants of Patients in a Tertiary Care Hospital at Visakhapatnam

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INTRODUCTION

Insomnia has been defined as difficulty in getting to sleep, staying asleep or having non-restorative sleep despite having adequate opportunity for sleep, together with associated impairment of daytime functioning, with symptoms being present for at least 4 weeks.¹ Sleep is one of the essential and basic physiological processes seen in higher animals. The quality and quantity of sleep determines the efficiency of an individual both physical and mental.² The quality of sleep is affected by sleep disorders like nightmares, night terrors, somnambulism, sleep awakenings etc. as it disrupts the normal sleep cycle. An inadequate duration of sleep adversely affects the quality of life because it gives rise to various physical and

ABSTRACT

Background: Insomnia is most frequent, under-reported and are often neglected because of lack of awareness of the impact of such condition in our daily life style. This study was therefore conducted to determine the prevalence of insomnia and its associated lifestyle factors among attendants of patients of a tertiary care hospital at Visakhapatnam.

Methodology: An institution based descriptive cross-sectional study was conducted from April to July 2018 at a teaching hospital, by face to face interview according to Athens Insomnia Scale by purposive sampling on a sample of 330 participants.

Results: The prevalence of insomnia was 13.3% with a female preponderance (14.4%). By calculating bivariate and logistic regression, we found that age > 40 years had 2.6 times and currently married had 4.6 times more chances of developing insomnia.

Conclusion: This study found a significant relationship of insomnia with alcohol, tobacco consumption, married status, overcrowding, non-vegetarian diet, and urban residence. Difficulty in sleep induction and frequent midnight awakening were the major complaints reported. Further community based studies are recommended to investigate the magnitude and the determinants of insomnia.

Key words: Insomnia, Age, Attendants, Lifestyle factors, Athens Insomnia Scale

mental health problems.

There is a wide range of prevalence ranging from 10-30% reported globally from different studies³⁻⁵ due to different definitions, methodology, parameters and age groups used to investigate this problem. Review of studies⁶⁻¹⁰ conducted in India indicated that insomnia is becoming a problem of public health concern.

An ailment in the family can deprive the rest of family members from adequate sleep. There is paucity of studies in this regard in Indian context. This study was therefore undertaken to see the prevalence of insomnia and its correlates among persons accompanying patients attending the OPD at a teaching hospital in Visakhapatnam.

MATERIAL AND METHOD

This is an institutional based cross sectional, descriptive type of study which was carried out from April 2018 to July 2018, at a tertiary care teaching hospital in Visakhapatnam on attendants of patients (both OPD and IPD). All apparently healthy above 18 years of age were included in the study whereas pregnant ladies and who are not given consent were excluded.

Sample size: The sample size was determined by applying the formula $4pq/l^2$. Considering 18.6% (\approx 19%) prevalence⁶, with a type I error of 5% ($\alpha=0.05$) and 95 % level of confidence, the calculated sample size was 246.24. Non-response rate was taken 10%. Hence, the target was set to reach 270, but we were successful in collecting data on 330 subjects.

Study tool: A predesigned, semi structured interview proforma in local language was used to obtain data. The proforma has three sections.

Section A was used to collect the data related to the socio-demographic variables like age, sex, residence, education, occupation, socioeconomic status (as per modified B.G. Prasad Scales, May 2016) marital status etc. Marital status was broadly divided into two categories (as per previous studies): currently married and currently single (including widows, divorced or separated couple).

Section B was related to life style factors like diet, tea/coffee intake, yoga-meditation, exercise, use of electronic gadgets like television, mobile, etc.

Section C was to assess insomnia by a validated Athens Insomnia Scales (AIS) based on ICD-10 criteria. It is measured by assessing 8 factors out of which the first 5 are related to nocturnal sleep and the last 3 related to day time dysfunction. A cut off score ≥ 6 on the AIS is used to establish the diagnosis of insomnia.

Sampling technique: Data was collected by non-randomized purposive sampling among persons accompanying patients attending to the OPD at a teaching hospital in Visakhapatnam.

Method of data collection: Apparently healthy subjects accompanying patients to this hospital were requested to participate. The purpose as well as the nature of the study was explained to the study participants and they were ensured about their anonymity and confidentiality. Informed consent was taken followed by data collection by face to face interview method. At last any queries that they had were answered.

Statistical Analysis: Data entered in Microsoft office excel 2010 and analysis was done by SPSS version 22. Percentage, Chi-square test and logistic regression were used in final analysis.

Table 1: Association of sociodemographic variables with Insomnia

Variables	Insomnia Present (n=44)(%)	Insomnia Absent (n=286)(%)	Total N=330(%)	P-value	Exp (B)	95 % (CI)
Age						
< 40	19 (9.1)	189 (90.9)	208 (63.03)	<0.01	1	1.35 - 4.89
\geq 40	25 (20.5)	97 (79.5)	122 (36.97)		2.56	
Gender						
Female	24 (14.4)	143 (85.6)	167 (50.6)	0.58	1	0.64 - 2.27
Male	20 (12.3)	143 (87.7)	163 (49.4)		1.2	
Education						
Educated	36 (12.5)	253 (87.5)	289 (87. 6)	0.21	1	0.25 - 1.37
Uneducated	8 (19.5)	33 (80.5)	41 (12.4)		0.59	
Occupation						
Employed	25 (14.1)	152 (85.9)	177 (53.6)	0.65	1	0.61 - 2.20
Unemployed	19 (12.4)	134 (87.6)	153 (46.4)		1.16	
Residence						
Rural	6 (6.3)	89 (93.7)	95 (28.8)	<0.01	1	0.17 - 1.95
Urban	38 (16.2)	197 (83.8)	235 (71.2)		1.47	
SES						
Upper Class (\geq 6277)	12 (9.2)	119 (90.08)	131 (39.7)	0.12	-	-
Upper Middle Class (3139-6276)	11 (11.6)	84 (88.4)	95 (28.8)			
Middle Class (1883-3138)	14 (19.2)	59 (80.8)	73 (22.1)			
Lower Middle Class (943- 1882)	5 (20.0)	20 (80.0)	25 (7.6)			
Lower class (<942)	2 (33.3)	4 (66.7)	6 (1.8)			
Marital status						
Currently single	4 (4.3)	90 (95.7)	94 (28.5)	<0.01	1	1.59 - 13.22
Currently married	40 (16.9)	196 (83.1)	236 (71.5)		4.59	
Type of family						
Joint	11 (13.8)	69 (86.2)	80 (24.2)	0.9	1	0.50 - 2.18
Nuclear	33 (13.2)	217 (86.8)	250 (75.8)		1.05	

* Significance

RESULT

In this study, the overall prevalence of Insomnia was 13.3% with a female preponderance (14.4%). Out of the total 330 participants, around 36.9%

were older than 40 years of age, 50.6% were females, 12.4% were illiterate, 46.4% were unemployed, and about 71.5% were married. Majority of the study participants belong to urban area (71.2%) and 88.8% were Hindu by religion.

Table 2: Association of Life style factors with Insomnia

Variables	Insomnia Present (n=44)(%)	Insomnia Absent (n=286)(%)	Total N=330(%)	P-value	Exp (B)	95 % (CI)
Diet						
Veg	7 (15.91)	32 (11.19)	39 (11.8)	0.37	1	0.62 - 3.65
Non veg	37 (84.09)	254 (88.81)	291 (88.2)		1.5	
Tea / Cofee						
No	12 (27.27)	73 (25.52)	85 (25.8)	0.81	1	0.62 - 3.65
Yes	32 (72.73)	213 (74.48)	245 (74.2)		1.09	
Tobacco						
No	24 (9.0)	243 (91.0)	267 (80.9)	<0.01	1	0.21 - 2.73
Yes	20 (31.7)	43 (68.3)	63 (19.1)		0.76	
Alcohol						
No	25 (56.82)	214 (74.83)	239 (72.4)	<0.01	1	0.27 - 1.77
Yes	19 (43.18)	72 (25.17)	91 (27.6)		0.6	
Exercise						
Almost daily	13 (29.55)	80 (27.97)	93 (28.2)	0.83	1	0.46 - 1.86
Rarely	31 (70.45)	206 (72.02)	237 (71.8)		0.93	
Yoga / Meditation						
Yes	2 (4.55)	23 (8.04)	25 (7.6)	0.45	1	0.40 - 7.75
No	42 (95.45)	263 (91.96)	305 (92.4)		1.76	
Read TV						
No	16 (36.36)	135 (47.2)	151 (45.8)	0.18	1	0.31 - 1.79
Yes	28 (63.64)	151 (52.8)	179 (54.2)		0.73	
Talking phone						
No	27 (61.36)	172 (60.14)	199 (60.3)	0.76	1	0.57 - 2.15
Yes	17 (38.64)	114 (39.86)	131 (39.7)		1.11	

* Significance

Table 3: Distribution of sleep related symptoms based on Athens Insomnia Scales

Athens Insomnia Scales	Frequency (N=330) (%)
Difficulty in sleep induction	128 (38.8)
Frequent midnight awakening	118 (35.8)
Earlier awakening than desired	108 (32.7)
Less sleep duration than desired	82 (24.9)
Poor quality of sleep	80 (24.2)
Poor sense of well-being	65 (19.7)
Poor physical & mental functioning	47 (14.2)
Daytime sleepiness	116 (35.2)

* Multiple responses

Table (1) shows the association insomnia with different socio-demographic variables. Logistic regression was applied to calculate the unadjusted odds of developing insomnia. We found that those who were above 40 years of age were 2.56 times more prone to insomnia whereas currently married respondents had 4.59 times more chances of insomnia. This study found a statistically significant association of insomnia for age more than 40 years, currently married persons and those residing in

urban area. We found that consumption of tea/coffee, tobacco products, alcohol and watching television during bedtime can lead to insomnia which was also statistically significant Table (2).

Table (3) shows the distribution of sleep related symptoms based on Athens Insomnia Scales. We found that the difficulty in sleep induction (38.8%), frequent midnight awakening (35.8%) and sleepiness during daytime (35.2%) were more common symptoms observed in this study.

DISCUSSION

This study has found prevalence of insomnia as 13.3% in apparently healthy South Indian population above 18 years of age which is less than the reported prevalence of 18% by Panda et al who had used the Epworth Sleepiness Scale and Pittsburg Sleep Quality Index for assessing insomnia.⁶ We chose Athens Insomnia Scale because it is simple and easy to understand. The prevalence decreases when insomnia is assessed by DSM-5 criteria as has been pointed out in a study⁸. A similar prevalence of 13.8% and 15.4% was reported in

studies^{11,12} on Indian corporate employees and urban population respectively. A higher prevalence of 33% and 45% was reported in studies by Bhaskar and Basu et al respectively, among patients using same scale as used in this study^{13,14}.

Insomnia was found significantly higher in age group above 40 years which is consistent with other similar studies^{7-9,12,15} although, this was not shown in all the studies^{15,16}. Similarly whereas the female preponderance of insomnia is corroborated by other studies as well.^{6,9,10}

Interestingly, married persons tended to be at a significantly higher risk of suffering from Insomnia contrary to the inference of a review study.⁶ This could be due to higher number of married persons (71.5%) in the sample. Because of rapid urbanisation, insomnia is significantly higher among those who live in urban area which is similar to a study conducted in North India.¹⁸ Occupational and socioeconomic status did not show any significant association as mentioned in a review article.⁸

Alcohol produces stimulating effect at low doses and with rising blood level, usually in the first hour of use. In contrast, sedating effect occurs at higher doses and as the blood alcohol level falls.^{19,20} Significant association of alcohol with insomnia in our study needs further investigation with respect to dose and duration as other studies did not detect such relationship.^{21,22} We also found significant association of insomnia with tobacco use similar to a community based study.¹²

The effect of yoga-meditation, exercise, diet, beverages like tea/coffee and use of electronic gadgets was not significant. Tea/Coffee intake is a well-known cause of insomnia.²³ However, our study could not find association with tea/coffee perhaps because we didn't assess the intake according to dose and frequency.

The use of media can decrease sleep due to increased emotional and physiological disturbances. Watching television during bedtime was significantly associated with insomnia, similar to the finding of a recent study.²⁴

Difficulty in sleep initiation (38%), frequent midnight awakenings (35%) and day time sleepiness (35%) were the major complaints by the respondents which was higher than that reported in Panda et al.⁶ Association of insomnia with rural and urban habitation has been scarcely studied. Our study found that the prevalence of insomnia was higher among urban dwellers.

The magnitude and determinants of insomnia is affected not only by methodology, classification and definition but also by the perception of re-

spondents regarding their problems related to sleep.

CONCLUSION

There is a high prevalence of insomnia among the attendants of patients in our set up. Females are more prone to insomnia than males. In spite of that, most of them did not seek any medical help for their condition. Hence, it is an under reported problem. This study found a significant relationship of insomnia with age, marital status and urban residence. Lifestyle factors such as alcohol, tobacco consumption and watching television were also associated with insomnia. Difficulty in sleep induction, frequent midnight awakenings and daytime sleepiness were the major complaints. Further community-based studies are recommended to investigate the magnitude and determinants of this health problem including the role of yoga, meditation, physical exercise and other lifestyle factors in greater detail, on a larger sample following standard and uniform method to rule out inconsistencies and bias in results.

LIMITATIONS OF THE STUDY

As this study was conducted on healthy persons, who were patients' attendants at a tertiary care health facility, the results cannot be generalized to the whole population. Another limitation of this study is that we did not classify insomnia into primary and secondary. Life style factors were not measured in detail.

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