



EVALUATION OF PATTERN OF SLEEP DISORDERS AMONG CARDIOVASCULAR DISEASE PATIENTS IN A TERTIARY CARE TEACHING HOSPITAL, PALAKKAD

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ABSTRACT

Sleep problems continue to cause considerable burden across the globe. Sleep disorder is defined as the group of syndrome characterized by abnormality in quality, timing and amount of sleep or abnormalities in the psychological and behavioral problems associated with sleep. The aim of this study is to evaluate the pattern of sleep disorders among patients with cardiovascular diseases. The study was a prospective study and conducted in Karuna Medical College Hospital Chittur, Palakkad in the duration of six months (November 2018 to April 2019). A total of 120 cases were included from Out patients attending the General Medicine Department. Self designed data entry form was used to collect data related to the patient's demographics, medical history, medication history, social habits, filled questionnaires then measured the sleep quality by using Sleep Index Scale like The Pittsburgh Sleep Quality Index (PSQI) (Insomnia Scale), Epworth Sleepiness Scale (ESS) were also recorded. The gender wise distribution reveals that 86 (71.66%) were male patients and 34(28.33%) with female patients, it shows that male patients were more affected than the female patient. It also indicates that sleep disorders are frequently seen in the age group 70-79, comprising of 31.6% of the total study population. Alcohol, Smoking, Employment status were the most common risk factors that cause sleep disorders other than medications among study population. The sleep pattern of patients enrolled in the study, which designate that Insomnia (47.5%), is more prevalent among study population.

Key words: Sleep disorder, Risk factors, Antihypertensive, Antihyperlipidemics, Sleep index scale, Insomnia.

INTRODUCTION

Sleep disorder can be defined as any disorder that affects, disrupts, or involves sleep and it's to be a most unrecognized factor of cardiovascular disease [1]. Sleep serves an important role in the maintenance of mental and physical health with approximately one third of an individual's life spent sleeping [2]. Population studies show that sleep deprivation and disorders affect many more people worldwide than previously thought. Insomnia is the most common sleep disorder, with some insomnia problems over the past year reported by 30% of adults, and

chronic insomnia by 10% and also affects 4–38% of North Americans and 60–70% people worldwide. Study reveals that 28% male & 16% female patients (age range more than 50 years) are affected by insomnia thereby the older people are more prone to insomnia because of change in circadian rhythm. The prevalence of excessive sleepiness (ESS > 10) has been shown to be 44.8% in night workers, 35.8% in rotating workers and 32.7% in day shift workers [3].

Sleep quality and quantity are affected by a large

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number of factors as documented by innumerable studies. The deranged sleep pattern and sleep deprivation lead to sleep debt, which further results in alterations of normal sleep architecture [4]. Sleep problems result from extrinsic as well as intrinsic factors. Many studies have established clear links with stress, smoking, alcohol, marital status, occupational high job demands, long work hours, shift work etc [5]. Certain internal factors such as obesity, neurological diseases, chronic illnesses, depression, anxiety disorders, and restless leg syndrome also contribute to sleep problems [6].

When age increased sleep-related difficulties become increasingly common and it is manifest as subjective complaints of difficulty falling asleep, the number and duration of night-time awakenings and the amount of night-time sleep obtained [7] so age is one of the major risk factors for sleep disorder. Sleep disorders are prevalent in both genders but the ratio is higher in females because of depression, mood, poor physical conditions etc. Marital status was also found to be a predictor of sleep disorder, widows had increased risk of sleep disorder loneliness caused by widowhood, divorce or separation may be a responsible factor.

Alcoholism and smoking are the main risk factors that cause sleep disorders. Chronic smoking results in increased level of carbon monoxide in the body which leads to poor sleep quality and these risk factors disrupt sleep continuity and have a negative impact on sleep architecture [8]. Sleep disorder was also associated with employment status. Unemployment is linked to less education and more likely to live in overcrowded areas with air pollution while the employee are more likely to be in the older age group, more likely to be separated or widowed and more likely to have chronic medical condition. In this study we aimed to evaluate the prevalence of sleep disorders and risk factors among patients with cardiovascular diseases.

METHODOLOGY

The study was a prospective observational study and conducted in Karuna Medical College Hospital

Chittur, Palakkad. A total of 120 CVD cases were taken from out patients attending the General Medicine Department in duration of 6 months (November 2018 to April 2019) .This study was approved by institutional ethical committee of Karuna Medical College (IHEC/12/2018). Patient consent form was prepared and written consent was obtained. Self designed data entry form was used to collect data related to the patient's demographics, medical history, medication history, social habits, and sleep pattern measured by using Sleep Index Scales like The Pittsburgh Sleep Quality Index (PSQI) (Insomnia Scale), Epworth Sleepiness Scale (ESS). The PSQI assesses self-reported sleep quality and disturbances over the last one month time period. The PSQI includes 19 items to measure seven domains of sleep quality: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, daytime dysfunction, sleep disturbance and use of sleeping medications. Four items have free-entry responses to assess usual bed and wake times, number of minutes to fall asleep, and hours slept per night. The remaining items use 4-point Likert scale responses, with higher scores indicating worse sleep quality. Five additional items are included in the questionnaire that are completed by a bed partner but are not included in the calculation of the global sleep quality score. A global sleep quality score is obtained by summing the seven domain scores, with higher scores indicating worse sleep quality (range = 0–21). A PSQI score greater than 5 indicates a “poor” sleeper.⁽⁹⁾ The ESS is a questionnaire that subjectively measures the patient's daytime sleepiness. The ESS is an eight-item questionnaire that assesses the severity of daytime sleepiness in various situations. The items includes sitting and reading, watching television, sitting inactive in a public place , as a passenger in a car for 1 h without a break, lying down to rest in the afternoon when circumstances permit, sitting and talking to someone, sitting quietly after lunch without alcohol or in a car, and while stopped for a few minutes in traffic. The numbers selected for the eight situations in the ESS are summed to provide a score for each subject ranging from 0 to 24.⁽¹⁰⁾

Table 1. Age wise Distribution among study population

Age Group(years)	Number of Patients (n=120)	Percentage of Patients (%)
20-29	3	2.5
30-39	3	2.5
40-49	7	5.83
50-59	30	25
60-69	32	26.66
70-79	38	31.66
80-89	6	5
90-99	1	0.833

Table 2. Pattern of Sleep Disorder among Study Population

Types of Sleep Disorder	Number of Patients (n=120)	Percentage of Patients (%)
Restless Leg Syndrome	8	6.66
Excessive Sleepiness	19	15.83
Insomnia	57	47.5
Shift Work	4	3.33
Snoring	23	19.16
Normal	9	7.59

Fig 1. Gender wise Distribution among Study Population.

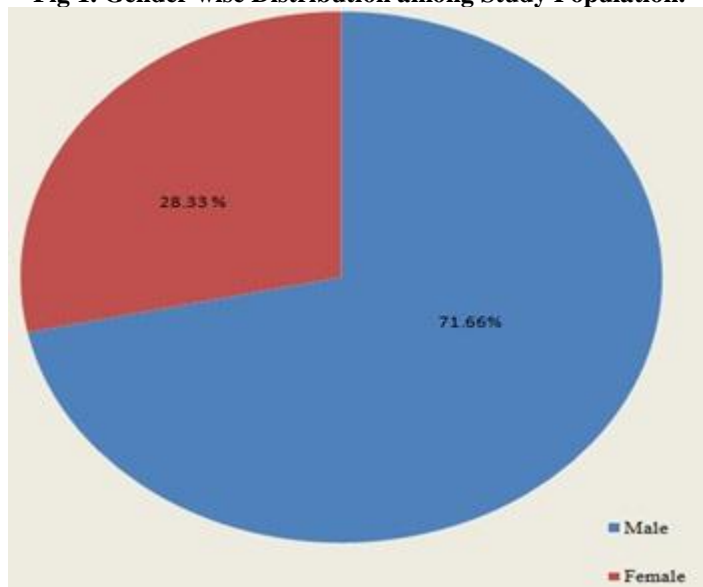
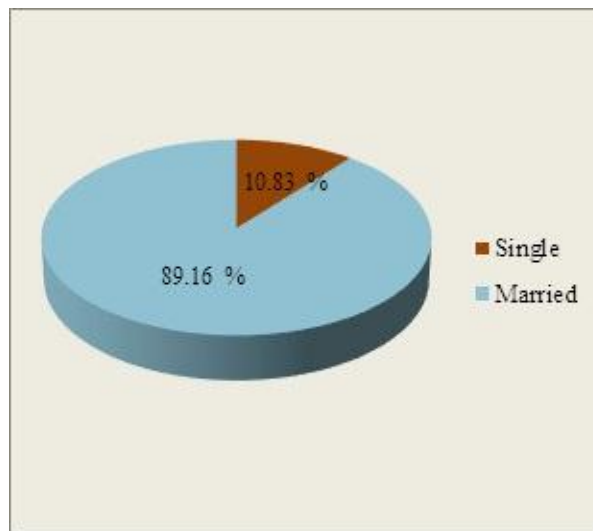


Figure 1 shows males are more prevalent to sleep disorder than females.

Fig 2. Alcohol and Smoking status among study population



Fig 3. Marital Status among study population



RESULT

The present study was conducted to determine the pattern of sleep and evaluation of cardiovascular drug induced sleep disorder among cardiovascular disease patients. In Gender wise distribution among the total study

population of cardiovascular disease with sleep disorder in which Eighty six (71.66%) were male patients and thirty four were female patients (28.33%) (Fig 1).The data related to Age of patients shows 31.66% (n=38) from the age group 70-79years, followed by 26.66% (n=32) of

patients in the age group of 60-69 years and least 0.833 % (n=1) patients were from 90-99 years (Table 1). Out of 120 patients 33(27.5%) were alcoholics followed by 48 (40%) were smokers (Fig 2). In employment wise distribution among 120 patients most of the patients were having Employment with 69.16% (n=83) followed by 30.8 % (n=37) of patients with unemployment (Fig 3). Our study reveals that married (89.1%) had increased risk of sleep disorder compared to single (10.8%) (Fig 4). In pattern of sleep disorder among 120 patients 57 patients had in insomnia (47.5%), Excessive sleepiness 15.83 % and followed by other disorders (Table 2).

DISCUSSION

Sleep disorder continues to cause considerable burden across the globe. The main risk factor for sleep disorder includes Age, sex, socioeconomic status, comorbidities and male patients were more affected than the female patient so it can be mainly accounted that male patients were more prevalent to sleep disorder than females. Similar study conducted by revealed that male patients were more prone to sleep disorder than females. Due to menstrual cycle and menopause among females will cause significant variation in hormonal balance that may alter the sleep pattern in females but the cardiovascular disease were more prevalent in males compared to females [11]. Previous study also shown that older people are more prone to insomnia because of change in circadian rhythm [12]. Alcoholism and smoking are the main risk factors that cause sleep disorders. Previous study also shows that most of the patients who were alcoholics and smokers prone to develop sleep disorder [13].

Sleep disorder was also associated with employment status. Unemployment is linked to less

education and more likely to live in overcrowded areas with air pollution while the employees are more likely to be in the older age group, more likely to be separated or widowed and more likely to have chronic medical condition. Marital status was also found to be a predictor of sleep disorder. Financial crisis, children, Stress, loneliness, widowhood, divorce or separation may be a responsible factor for disturbances in sleep among study population. According to the study we can conclude that insomnia is more prevalent among the study population. So the similar study reveals that there is growing evidence for the hypothesis that Dysomnia is associated with an increased risk for cardiovascular disease this in turn causes hypertension. The Insomnia was the commonest among Dysomnia. Excessive sleepiness is common in shift workers but the excessive sleepiness were also considered as poor sleep quality in individuals.

CONCLUSION

Sleep problems appeared to be a big burden among cardiovascular disease patients. Attention should also be placed on sleep hygiene and sleep education. Our present study revealed that the risk factors like age, gender, employment, marital status, and social habits are more likely to cause sleep disorder. Insomnia is the commonest form of sleep disorders having a high prevalence rate compared to others.

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Nil

CONFLICT OF INTEREST

No interest

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