

A Cross-sectional Study to Find Out the Duration of Sleep and Associated Disorder among Practicing Advocates in Madurai District Tamilnadu

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Abstract

Background: Hypertension is a condition in which blood vessels have persistently raised blood pressure (ie) when systolic blood pressure is equal to or above 140 mmHg and/or a diastolic blood pressure equal to or above 90 mmHg. Hypertension is a major global public health issue. The theme of world health day 2013 was the need to control raised blood pressure (hypertension) as a "silent killer, global public health crisis". The slogan for the campaign was "Healthy Heart Beat, Healthy Blood Pressure". Due to this disorder many advocate professionals are having sleep disorders hence this study was undertaken.

Result: 116(38.67%) participants had less than 6 hours of night sleep and 184(61.33%) participants had equal to or more than 6 hours of night sleep. Among participants with night sleep less than 6 hours, a majority of 97(83.62%) were found to be hypertensive's whereas only 26(14.13%) participants with night sleep equal to or more than 6 hours were hypertensive's. The above difference of observation was found to be statistically significant ($p=0.00$). The odds ratio is 31.02, which indicates that individuals with less than 6 hour of sleep had 31 times greater odds of developing hypertension as compared to individuals who have night sleep more than 6 hours duration.

Summary and conclusion: Practicing advocates have a significant amount of sleep disorder hence they have to an active role in life style modification to rectify their sleep disorder.

Keywords: Sleep disorder; Hypertension; Heart disease

Introduction

Major global public health issue is hypertension [1,2]. The ultimate goal is to reduce heart attacks and strokes of person having hypertension. World Health Organisation states hypertension as "SILENT KILLER" because the disease does not cause any harm by itself but predisposes to other cardiovascular and cerebrovascular diseases. Hypertension is reported to be the IV contributor to premature death in developed countries and VII in developing countries [3]. Hypertensive heart disease accounted for 15.3 million DALYs lost (3.8%) and 8.7 million deaths (13.5%) in 2010 [4]. The Global prevalence of hypertension in adults aged 18 and over was around 22% in 2014 [4]. World Health Organization data indicate that by 2025 the global burden of hypertension will increase by 60% to be 1.56 billion individuals worldwide and higher in the developed nations [4]. Around 68% of legal professionals suffer from stress and sleep disorders. Main factors concerned are, being overloaded with work, unsupported, lack of appreciation, long hours, unattainable targets. Ample evidence supports the beneficial effects of healthful lifestyle modifications in the prevention and management of hypertension [4]. Hence to evaluate the association between the following risk factors like sleep disorders and hypertension among advocates practicing in Madurai city.

Literature review

Reverend Stephen Hales is first credited to measure direct intra-arterial pressure by introducing a cannula into carotid artery of an adult female horse in 1733. In 1896 Scipione Riva Rocci, Italian internist, invented an easy-to-use cuff based version of the mercury sphygmomanometer used in measurement of brachial blood pressure. Few years later in 1904, Nikolai Korotkov, a Russian army surgeon, invented auscultatory method for blood pressure measurement.

Gottlieb et al. observed that usual sleep duration above or below the median of 7 to less than 8 hours per night is associated with an increased prevalence of hypertension, particularly at the extreme of less than 6 hours per night. According to Sheldon G Shepsetal in a study at United States observed that sleeping less than six hours a night could be linked to increased blood pressure.

People who sleep five hours or less a night may be at higher risk of developing high blood pressure or worsening already high blood pressure. There's also an increased risk of high blood pressure who sleep between five and six hours a night. Similarly Faraut et al. stated that individuals sleeping 5 hrs or less had an increased odds ratio (OR) for the prevalence of hypertension=1.8 and 95% CI (1.06-3.05).

Several studies reported that the short term experimental sleep restriction (less than 6 to 7 hours) for as little as 1 night has been reported to increase blood pressure in both healthy and hypertensive subjects. Because hypertension carries a high risk for cardiovascular

disease, an effect of short sleep duration on hypertension might increase the risk of cardiovascular disease and mortality.

Methods and Material

Study design: Cross-sectional Study.

Place of study: The study was conducted among advocates at bar association and law chamber, District court, Madurai.

Period of study: The study was carried out from September 2015 to August 2016.

Study population: The study population comprised of advocates in the age group of 30 years and above practicing in Madurai city.

Data collection tool

Structured interview schedule was used in pilot study among advocates practicing in Madurai city. The sampling method used in the study was simple random sampling. From Madurai Bar Association (M.B.A) Advocates voters' affidavit list, 600 advocates were selected by simple random sampling technique using computerized random numbers. Out of that a sample of 300 advocates who satisfy the inclusion criteria are selected by enquiry through phone dialing. Permission from Madurai Bar Association Secretary was obtained prior to the data collection.

Data was collected using the modified interview schedule. Data on medication adherence to anti-hypertensive's and life style modifications practiced by known hypertensive advocates were also collected. All the study subjects were screened by taking three blood pressure readings at an interval of 3 hours in sitting position, then the average was calculated. Newly detected hypertensive were examined

again after 2 days in the same manner to confirm that hypertension was constant. Apart from the known hypertensives, based on the blood pressure measurements, the remaining study subjects were classified according to JNC VII criteria. The newly diagnosed hypertensives were advised to consult the physician for further management. The known hypertensive cases were emphasized to continue their regular treatment. At the end of the data collection all the advocates who participated were given health education on life style modifications [5-11].

Limitation of the study

Investigation of urine and blood analysis and ophthalmoscopic examinations could not be carried out due to various constraints.

Analysis

Data entry was made using SPSS software 16.0 version. Descriptive analysis was done by calculating percentages, chi square test, odds ratio with 95% CI computed for selected socio demographic variables.

Results

The following are the results of a cross-sectional study on hypertension, done among 300 advocates practicing in Madurai district. Out of 300 advocates participated in the study, 123(41%) were found to be hypertensives, and the remaining 177(59%) were normotensives. Among the hypertensives, 123 participants 56(18.66%) were known hypertensives and 67(22.33%) were newly detected hypertensives. The 95% of CI for prevalence of hypertension is ranging between 35.4-46.8.

Duration of night sleep	Hypertensives	Normotensives	Total	Odds ratio	P value	95% CI
<6 hours	97(83.62)	19(16.38)	116(38.67)	31.02	0	15.61-62.34
=>6 hours	26(14.13)	158(85.87)	184(61.33)			
Total	123(41)	177(59)	300(100)			

Table 1: Distribution of hypertensive subjects and duration of night sleep.

Hypertension and duration of night sleep

It is seen from the Table 1 that, 116(38.67%) participants had less than 6 hours of night sleep and 184(61.33%) participants had equal to or more than 6 hours of night sleep. Among participants with night sleep less than 6 hours, a majority of 97(83.62%) were found to be hypertensives whereas only 26(14.13%) participants with night sleep equal to or more than 6 hours were hypertensives. The above difference of observation was found to be statistically significant (p=0.00). The odds ratio is 31.02, which indicates that individuals with less than 6 hour of sleep had 31 times greater odds of developing hypertension as compared to individuals who have night sleep more than 6 hours duration.

Discussion

In the present study, the prevalence of hypertension among advocates was found to be 41%. Similarly, a study conducted among 300 lawyers by Maulana Azad medical college researchers showed 36%

of prevalence of hypertension [4]. A study done by Madhumitha et al. in urban area at Karnataka revealed similar finding (37.6%). While comparing the present study prevalence with studies carried out by Raghupathy et al. and Gani et al. observed a prevalence of 31.8% and 30.5% respectively with sleep disorders, it was found that the prevalence was higher in the present study.

Conclusion

Sleep disorder was found to have a significant association with hypertension. Stress plays a major role in day to day life of advocates, which causes deleterious effects on health. Hence life style modifications should be adopted to overcome strain and stressful life. Short vacations can be planned and entertained with friends and family, arrangement of health camps in court premises with guidance of bar council association, regular monitoring of health status by self-care management. Hectic work schedules can be pre-planned and executed.

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