International Journal of Community Medicine and Public Health
Kannan L et al. Int J Community Med Public Health. 2018 Apr;5(4):1584-1586
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20181238

Original Research Article

A cross sectional study to find out the duration of sleep and associated disorder among practicing advocates in Madurai district Tamil Nadu

L. Kannan[1]*, Praveena P.[2]

[1]Associate Professor, Department of Community Medicine, Sri Ramachandra Medical College and RI, Porur Chennai, Tamil Nadu, India
[2]Assistant Professor, Department of Community Medicine, Velammmal Medical College, Hospital and Research Institute, Madurai, Tamil Nadu, India

Received: 01 February 2018
Revised: 09 March 2018
Accepted: 10 March 2018

***Correspondence:**
Dr. Praveena P.,
E-mail: Pravicares@gmail.com

ABSTRACT

Background: Sleep is a essential physiological process for attaining optimal health and wellbeing. Reduced duration of night sleep destructs the body's ability to regulate stress hormones, raises the blood pressure and cardio vascular risk. The pressure of working in legal field creates stress, sleep deprivation and eventually hypertension. In view of above issues one of the main objectives of the study is to evaluate the relationship between duration of sleep and hypertension among practising advocates.
Methods: A cross-sectional study was conducted in a sample of 300 practising advocates at Madurai district court for a period of 1 year by simple random sampling method.
Results: Around 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 (p=0.00, odds ratio-31.02).
Conclusions: The study explains that practising advocates with duration of night sleep less than 6 hours (83.62%) have a significant association with hypertension. Advocates experience work related depression, anxiety and stress. Therefore advocates are advised to well plan the work schedules, plan for short vacations and adopt basic life style modifications to prevent hypertension.

Keywords: Sleep deprivation, Hypertension, Stress

INTRODUCTION

Sleep is an essential physiological process for attaining optimal health and wellbeing. Sleep deprivation results in adverse health effects – cognitive impairment, difficulty in performing tasks, retaining facts, non-communicable diseases and increased risk of mortality.[1] Reduced duration of night sleep destructs the body's ability to regulate stress hormones, raises the blood pressure and cardio vascular risk.[2] Lack of sleep is common in today's world particularly among busy professionals. Advocates are among the most stressed professionals. The pressure of working in legal field creates stress, sleep deprivation and eventually hypertension. The associations between the duration of sleep and hypertension in particular have provoked debate. In view of above issues one of the main objectives of the study is to evaluate the relationship between duration of sleep and hypertension among practising advocates.

METHODS

Study design: Cross sectional Study

Place of study: Bar association and law chamber, District court, Madurai.

Period of study: From September 2015 to August 2016.

Study population: Advocates in the age group of 30 years and above practicing in Madurai city.

Inclusion criteria

Inclusion criteria were advocates in age group of 30 and above; regularly practicing advocates (attending court at least thrice a week); advocates practicing for a period of more than 5 years.

Sample size

According to available studies, relating to prevalence of hypertention among advocates, the prevalence was 36%, considering it as 'p' with limit of accuracy as 16% of prevalence and with 10% attrition the sample size is calculated.[3]

$N = Za^2 \times P \times Q / L^2 = 1.96 \times 1.96 \times 36 \times 64 / 5.76 \times 5.76 = 266.72$.

With 10% attrition i.e. 26.6, minimum sample size calculated

(266+26.6) =293.32 rounded off to 300

Hence sample size for this study will be 300

Sampling method

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 collection tool

Structured interview schedule (modified after pilot) and sphygmomanometer (mechanical type with a dial).

Data was collected using the final proforma. Data on background characteristics and risk factors were obtained from all participants. Three blood pressure readings as per JNC VII were measured in all study subjects at an interval of 3 hours in sitting position and the average was calculated. The participants were advised to refrain use of tobacco in any form or ingestion of caffeine during the 30 minutes preceeding measurement. Newly detected hypertensives 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.

Statistical analysis

The Data was entered and analysed using SPSS version 16.0. Descriptive statistical analysis done by calculating percentages and Chi-square test and odds ratio for association of risk factor and 95% CI were computed.

Among the factors evaluated, association between sleep and hypertension is discussed in this research article.

RESULTS

In this cross-sectional study, out of 300 advocates, 115(38.3%), 85(28.3%), 98(32.7%) and 2(0.7%) were in the age group of 30 to 40 years, 41 to 50 years, 51 to 60 years and more than 60 years respectively. Among the study subjects 282 (94%) were male and 18 (6%) were female.The association between the hypertension and duration of sleep is depicted in the table.

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

Duration of night sleep	Hypertensives	Normotensives	Odds ratio	P value	95% CI
<6 hours	97	19			
≥6 hours	26	158	31.02	0.000	15.61-62.34
Total	123	177			

It is observed from the above 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

This discussion is based on above findings obtained as a result of evaluation of association between sleep and hypertension. The findings of the present study is similar to the following studies, Gottlieb et al, observed that those sleeping less than 6 hours are at greater risk of hypertension.[4] Wang et al reported that short sleep duration group (<6 hours) the hypertention prevalence rate was significantly higher than normal sleep group.[5] Sheldon G Shepsetal observed increased prevalence of hypertension particularly at the extreme of less than 6 hours sleep per night.[6] People who sleep 5 hours or less at night may be at higher risk of developing hypertension or worsening the already existing high blood pressure. Several epidemiological studies reported the similar findings and short term experimental sleep less than 7 hours of sleep for as little as one night has been reported to raised blood pressure both in health and hypertensive subjects.[7-11] Because hypertension carries a high risk for cardiovascular disease, an effect of short sleep duration on hypertension might increase cardiovascular risk and mortality. This may be due to the fact that lack of sleep causes imbalance in regulation of stress hormones there by leading to hypertension.

CONCLUSION

In conclusion the study explains that practising advocates with duration of night sleep less than 6 hours (83.62%) have a significant association with hypertension. Advocates are exposed to long hours of work, tight deadline of cases that causes work related depression, anxiety and stress. The average hours of night sleep declines due to this accelerated busy life. Therefore advocates are advised to well plan the work schedules, plan for short vacations and adopt basic life style practices (avoid heavy meals at night, early dinner, avoid alcohol, limit consumption of coffee and tea), hereby this overcomes strain, promotes duration of sleep and prevents hypertension.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee SRMC &RI (SRU), Chennai (IEC Ref: CSP-MED/15/AUG/24/37)

REFERENCES

1. American Academy of Sleep Medicine. http://www.aasm.org>resources>factsheets Accessed on 3 February 2018.
2. Sheldon G. Sheps, M.D. Mayo clinic. Is it true that sleep deprivation can cause high blood pressure? http://www.mayoclinic.org/diseases-conditions/high-blood-pressure/expert-answers/blood-pressure. Accessed on 3 February 2018.
3. Sarda K. The New Indian Express Donning lawyers robes, with no law to protect from stress. 20th October 2014.
4. Gottlieb DJ, Redline S, Nieto FJ, Baldwin CM, Newman AB, Resnick HE, et al. Association of usual sleep duration with hypertension: the sleep heart health study. Sleep. 2006;29(8):1009-14.
5. Wang Y, Mei H, Jiang YR, Sun WQ,Song YJ,Liu SJ, Jiang F. Relation between duration of sleep and hypertension in adults: a meta-analysis. J Clin Sleep Med. 2015;11(9):1047-56.
6. Sheldon G. Shepsetal. Mayo clinic.org. Accessed on 3 February 2018.
7. FarautB, Touchette E Gamble-Short sleep duration and increased risk of hypertension: a primary care medicine investigation. J Hypertens. 2012;30(7):1354-63.
8. Lusardi P, Mugellini A, Preti P, Zoppi A, Derosa G, Fogari R. Effects of a restricted sleep regimen on ambulatory blood pressure monitoring in normotensive subjects. Am J Hypertens. 1996;9:503-5.
9. Kato M, Phillips BG, Sigurdsson G, Narkiewicz K, Pesek CA, Somers VK. Effects of sleep deprivation on neural circulatory control. Hypertension. 2000;35:1173-5.
10. Meier-Ewert HK, Ridker PM, Rifai N. Effect of sleep loss on C-reactive protein, an inflammatory marker of cardiovascular risk. J Am CollCardiol. 2004;43:678-83.
11. Lusardi P, Zoppi A, Preti P, Pesce RM, Piazza E, Fogari R. Effects of insufficient sleep on blood pressure in hypertensive patients: a 24-hour study. Am J Hypertens. 1999;12:63-8.

Cite this article as: Kannan L, Praveena P. A cross sectional study to find out the duration of sleep and associated disorder among practicing advocates in Madurai district Tamil Nadu. Int J Community Med Public Health 2018;5:1584-6.