Original Research Article

Assess the Level of Hypertension and Its Determinants among Bus Drivers

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ABSTRACT

Background: Drivers are high risk group for development of hypertension because they are mentally stressed professionals whose nature of work, dietary pattern, sleeping pattern, life style modification and habits makes it a risk in developing hypertension.
Aim: The aim of the study is assess the level of hypertension and its determinants among bus drivers. Objectives: To assess the level of hypertension and its determinants and to associate the level of hypertension with socio demographic variables among bus drivers.
Methodology: A total of 30 bus drivers with hypertension were selected by convenient sampling technique. Data were collected by interview method on one to one basis. Collected the socio demographic variables and assessed the level of hypertension by checking blood pressure followed by determinants related to hypertension was assessed by interview method using multiple choice question. Data were analyzed by using descriptive and inferential statistics.
Result: Out of samples 11 (37%) had Pre-hypertension, 15 (50%) of them had stage I hypertension and 4 (13%) of them had stage II hypertension. there is a significant association between the Age, Education, Residence, Marital status, Hobbies at the level of $p<0.05$ with the level of hypertension. Chi square test reveals that there is a significant association between BMI, Family h/o, Food habits, Excess salt consumption, Junk food intake, Alcohol consumption, Habits of consuming tobacco, Sleeping pattern, Stress, and Habits of doing exercise/yoga at the level of $p<0.05$ with the level of hypertension.

Key words: Bus drivers, blood pressure, hypertension, determinants of hypertension.

INTRODUCTION

Hypertension (HTN or HT), also known as high blood pressure (HBP), is a long term medical condition in which the blood pressure in the arteries is persistently elevated. High blood pressure usually does not cause symptoms. Long term high blood pressure, however, is a major risk factor for coronary artery disease, stroke, heart failure, peripheral vascular disease, vision loss and chronic kidney disease. [1]

The world prevalence of hypertension is 20%. [2] Hypertension is an iceberg disease and it remains silent, being generally asymptomatic most of its course. It is one of the major risk factors for cardiovascular mortality, which accounts for 20-50% of all deaths. [3] Hypertension has become a Global public health burden it results in cardiovascular accidents, heart failure, heart attacks, blindness and renal failure. Hence it has been given the term "Silent killer." [4]

World Health Organization has segregated the hypertension as one of the cardiovascular problems. In favour of curbing the occurrence of the hypertension WHO has declared the theme for the World

Health Day 2013 as "Controlling Blood Pressure". According to the WHO, hypertension has become a significant health concern in the Asian region, affecting more than 35 % of the adult population. [5] The two fast-growing economies, India, and China, have a huge burden of hypertension and are projected to proliferate by 2025. [6]

Drivers are a group of mentally stressed professionals whose nature of work makes it a risky group in developing hypertension and the impact on them affects not only them but the society at large. The nature of profession puts bus drivers at higher risk of developing hypertension. Once they develop hypertension they are prone to develop coronary heart disease and stroke putting them and their road users at risk. The World Health Organization 2004 estimated that road traffic accidents will increase by 65% between 2000 and 2020 but with the figure expected to be as high as 80% in developing countries. Most drivers' behaviour such as smoking, alcohol and drugs are associated with hypertension. These behaviours contribute to road crashes.

They have to be extremely careful in handling heavy vehicles laden with passengers. Traffic congestion, exposure to vehicle exhausts, constant whole body vibration, poor condition of roads, poor town planning and traffic regulation, over speeding due to competition between buses, and carelessness of pedestrians contribute to their misery. Besides, most of the drivers are in the habit of eating main meals from hotels and consuming snacks (often oily and fried) and fast food items between trips. Many resort to alcohol and smoking to overcome stress. It follows logically that they may have an additional risk of developing HTN.

Bus drivers are known to be high risk group for development of hypertension. This may be due to the nature of their profession. They have to cope with the pressure of time, responsibility to passengers' welfare and safety as well as others demands related to passengers' complains. The health impact of hypertension does not only affect the drivers alone but the community at large, as the community relies on drivers for safe movement of persons and goods from place to place. [7]

S. Baskerarao, G.et.al had conducted a study in Vishakhapatnam, on "A Study on hypertension and its determinants among male bus drivers. The study finding is the prevalence of hypertension among bus drivers was high in that 44.4% of participants were not aware of the hypertension status. Family history observed in 46% of the study population. About 59% of the study population were overweight and obese, of them 45.7% had hypertension. [8]

The stress is most common in driving profession. Many of the drivers having hypertension due to life style modification, diet, sleeping pattern and stress which leading to a cardiac problems. Many accidents are occurring due to sudden heart attack while driving. So it can be reduce through the proper assessment and awareness. Hence the investigator felt to conduct the study to assess the hypertension and its determinants among bus drivers with the objectives to assess the level of hypertension, determinants related to hypertension among the bus drivers, associate the level of hypertension with selected socio demographic variables and to associate the level of hypertension with its related determinants among bus drivers.

MATERIALS AND METHODS

The research approach used in the study was quantitative approach by using cross-sectional research design. After obtaining formal permission from authority the study was conducted with 30 bus drivers working in Saveeetha University who met the inclusion criteria were selected by convenient sampling technique. Explained the study in detail and obtained informed consent from the bus drivers. Data were collected by interview method on one to one basis. Collected the socio demographic variables and assessed the level of

hypertension by checking blood pressure using sphygmomanometer in the dominant hand in sitting position after 10 minutes rest followed by determinants related to hypertension was assessed by interview method using multiple choice question. Confidentiality was maintained throughout the procedure. Collected data were analyzed by using descriptive and inferential statistics.

RESULTS

Out 30 samples, 11 (37%) had Pre-hypertension, 15 (50%) of them had stage I hypertension and 4 (13%) of them had stage II hypertension.

The mean score of systolic blood pressure was 141.5 with 10.84 standard deviation and the mean score of diastolic blood pressure was 94.5 with 8.54 standard deviation.
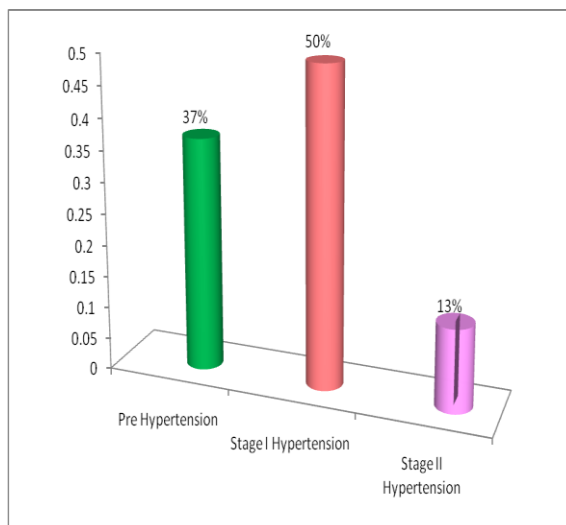

Figure I: Level of Hypertension among Bus Drivers

Table I: Distribution of determinants related to Hypertension among Bus Drivers

Sl. No.	Determinants related to Hypertension		Frequency(n)	Percentage (%)
1.	BMI	Normal	15	50%
		Over weight	13	43%
		Moderate weight	2	7%
2.	Family History of Hypertension	Yes	14	47%
		No	16	53%
3.	Food Habits	Vegetarian	0	0%
		Non-veg	30	100%
4.	Excess salt consumption	Yes	11	37%
		No	19	63%
5.	Junk Food intake	Never	6	20%
		Occasional	14	47%
		Often	10	33%
6.	Alcohol consumption	Yes	22	73%
		No	8	27%
7.	Habits of consuming Tobacco	Yes	14	47%
		No	16	53%
8.	Sleeping pattern	Regular	29	97%
		Irregular	1	3%
9.	Stress	Yes	17	57%
		No	13	43%
10.	Habits of Doing Exercise/ Yoga	Yes	12	40%
		No	18	60%

Table II: Association between the level of hypertension and selected socio demographic variable among bus drivers

Sl. No	Socio Demographic Variables		Level of hypertension			Chi Square
			Pre HTN	Stage I HTN	Stage II HTN	
1.	Age in Years	30-40	8	8	0	X^2-32.5, df-6 $p<0.05$ significant
		41-50	3	2	2	
		51-60	0	3	1	
		>61	0	2	1	
2.	Education	Middle school	6	10	2	X^2-25.74, Df-6 $P<0.05$ Significant
		High school	5	4	2	
		Higher Secondary	0	1	0	
		Degree course	0	0	0	
3.	Residence	Urban	7	6	3	X^2-17.09, Df-4 $P<0.05$ Significant
		Rural	0	8	1	
		Semi-Urban	4	1	0	
4.	Marital Status	Married	7	12	4	X^2-40.92, Df-2 $P<0.05$ Significant
		Unmarried	4	3	0	
5.	Hobbies	Watching Television	3	5	1	X^2-24.7, Df-4 $P<0.05$ Significant
		Reading Newspaper	2	8	2	
		Gardening	6	2	1	

Table III: Association between the level of hypertension and determinants related to hypertension among bus drivers

Sl. No	Determinants related to hypertension		Level of hypertension			Chi square
			Pre HTN	Stage I HTN	Stage II HTN	
1.	BMI	Normal	8	6	1	X²-87.36, Df-8 P<0.05 Significant
		Over weight	2	9	2	
		Moderate weight	1	0	1	
		Severe weight	0	0	0	
2.	Family history of HTN	Yes	5	7	2	X²-24.72,Df-2 P<0.05 Significant
		No	6	8	2	
3.	Food Habits	Vegetarian	0	0	0	X²-12.06, Df-2 P<0.05 Significant
		Non-Vegetarian	11	15	4	
4.	Excess salt consumption	Yes	2	7	2	X²-32.97, Df-2 P<0.05 Significant
		No	9	8	2	
5.	Junk food intake	Never	2	1	3	X²-34.74, Df-4 P<0.05 Significant
		Occasional	4	10	0	
		Often	5	4	1	
6.	Alcohol consumption	Yes	7	13	2	X²-43.21. Df-2 P<0.05 Significant
		No	4	2	2	
7.	Habits of consuming tobacco	Yes	7	6	1	X²-35.58, Df-2 P<0.05 Significant
		No	4	9	3	
8.	Sleeping pattern	Regular	11	15	3	X²-191.3, Df-2 P<0.05 Significant
		Irregular	0	0	1	
9.	Stress	Yes	6	9	2	X²-13.51, Df-2 P<0.05 Significant
		No	5	6	2	
10.	Habits of doing exercise/yoga Meditation	Yes	6	4	2	X²-11.45, Df-2 P<0.05 Significant
		No	5	11	2	

Chi square test reveals that there is a significant association between the Age, Education, Residence, Marital status, Hobbies at the level of p<0.05 with the level of hypertension.

Chi square test reveals that there is a significant association between BMI, Family history, Food habits, Excess salt consumption, Junk food intake, Alcohol consumption, Habits of consuming tobacco, Sleeping pattern, Stress, and Habits of doing exercise/yoga at the level of p<0.05 with the level of hypertension.

DISCUSSION

Bus drivers are the stressful professionals and most of them are unaware of the hypertension due to ignorance and lack of time. The present study findings reported that Out 30 samples, 11 (37%) had Pre-hypertension, 15 (50%) of them had stage I hypertension and 4 (13%) of them had stage II hypertension with the mean score of systolic blood pressure was 141.5 with 10.84 standard deviation and the mean score of diastolic blood pressure was 94.5 with 8.54 standard deviation. This study was supported by Arjun Lakshman, (et.al) 2014 had conducted a cross-sectional study in Kerala on Prevalence and Risk Factors of Hypertension with 179 Male Occupational Bus Drivers. Among 179 bus drivers studied, 16.8% (30/179) had normal BP, 41.9% (75/179) had pre-hypertension, and 41.3% (74/179) had hypertension. [9] With regards to determinants of hypertension, 13 (43%) had over weight, 14 (47%) had family history of hypertension, 30 (100%) had food habits of non-vegetarian diet, 11 (37%) had excess salt consumption, 10 (33%) are often consuming Jung food, 22 (73%) had consuming alcohol, 14 (47%) had consuming tobacco, 17 (57%) had stress and 18 (60%) had not doing exercise/yoga and also significant association with the determinant factors such as junk food intake, alcohol consumption, habits of consuming tobacco, sleeping pattern, stress, and habits of doing exercise/yoga with level of hypertension. Sharvanan Eshwaran Udaya, et.al, (2015) had conducted a study in Chittoor on epidemiological study of cardiovascular risk factors among public transport drivers in rural area of chittoor district of Andhra Pradesh. Results 204 transport drivers were studied out of 95 tobacco chewers 68 were smokers and 27 were tobacco chewers and 110 subjects were alcohol consumers perceived reason for smoking were it suppresses cold (27.94%) and enables to concentrate on work (20.58%) perceived reason for alcohol

consumption were peer pressure (17.2%) and it suppresses cold (20%). Among 204 subjects 36.2% were pre-obese and 34.8% were obese with 23.5% of pre-hypertension and 14.21% hypertensive. Duration of alcohol intake and tobacco use, BMI, WHR and WC were significant associated with hypertension. [10] Data shown in the table III reveals that there is a significant association between BMI, Family history, Food habits, Excess salt consumption, Junk food intake, Alcohol consumption, Habits of consuming tobacco, Sleeping pattern, Stress, and Habits of doing exercise/yoga at the level of $p<0.05$ with the level of hypertension. This study findings supported by Sathesh B.C.et.al had conducted a study of prevalence of hypertension among 500 bus drivers in Bangalore city and found that the prevalence of hypertension among the bus drivers was 16% (80/500) and also significant positive correlation was seen between hypertension and increasing age, tobacco chewing and BMI. However, in this study hypertension was not found to be significantly associated with smoking, alcohol consumption, diet and salt intake. This study was accordance with the findings of the present study. [11]

CONCLUSION

The study findings concluded that the drivers are risky group for having hypertension ranging from the prehypertension level to stage II level of hypertension and cardiovascular problems due to stress, sleeping pattern, life style modification, habits and dietary pattern. This findings suggested that drivers should undergo medical checkup periodically and awareness must be created regarding the risk factors of hypertension and bring the positive changes in the lifestyle thereby can prevent the impact of hypertension among them and on the society.

Recommendation

A similar study can be conducted with large number of samples and with other professionals

Interventional study can be done for the hypertensive samples with home remedies or with complementary and alternative therapy.

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