



A Study to Assess the Prevalence and Risk Factors of Hypertension among the Truck Drivers of district Shivpuri, Madhya Pradesh, India

MAHENDRA PRASAD*¹, KUNAL SINGH²

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INTRODUCTION: Hypertension is one most common non-communicable cardiovascular disease. It is the major risk factor for heart failure, coronary artery disease, chronic renal failure and cerebral vascular diseases. Hypertension has been found paramountly amongst long distance truck drivers. This could be due to the hectic nature of their job.

AIM: The study was conducted to study the prevalence of hypertension among truck drivers of Shivpuri district of Madhya Pradesh and to study the associated risk of hypertension amongst them.

MATERIALS AND METHOD: District Shivpuri of Madhya Pradesh has around 20 Truck operation unions all registered under which more than 1000 truck drivers are registered. Total 770 drivers were selected by using systematic random sampling. The present study was conducted from November 2022 to March 2023. Information regarding demographic profile and risk factors of hypertension were collected on pre-tested proforma.

RESULTS: Out of total 770 truck drivers, prevalence of hypertension was found 45.6% including 15% self-reported and 30.6% detected in the study. Only about 7% of truckers who were pre-diagnosed had undergone treatment for a certain period of time. Highest prevalence of hypertension was reported in 40 to 49 years age group followed by 30 to 39 years. Hypertension was prevalent amongst the truck drivers who had been working for more than 10 years. Significant association found on assessing risk factors like lack of physical exercise, lack of proper sleep, high BMI, history of addiction.

CONCLUSION: Hypertension was reported more in the age group and people who were in this profession for over 10 years. Age was found significantly associated with hypertension. Improper sleep, schedule, hectic routines, lack of proper nutrition, centric obesity, high BMI and addiction to tobacco and alcohol found significant risk factors for hypertension.

KEYWORDS: Hypertension, Motor Vehicles, Prevalence

INTRODUCTION

Indian Truck drivers contribute substantially to the transportation sector as well as the overall economy.¹ This mostly comes at an expense of these truck drivers compromising their lifestyle and health status.² Hypertension is the most important noncommunicable disease in India and accounts for an estimated burden of 200 billion people. its prevalence is ever increasing and hypertension is slowly becoming a global pandemic. various risk factors like high BMI, lack of proper nutrition, sedentary lifestyle and consumption of alcohol and tobacco etc are associated with increased hypertension amongst individuals. Truckers in India live a very tough life. The very nature of their job demands them being on road for non stop hours that often leads to various health issues remaining either undiagnosed or worsening health conditions as time pass by^{3,4} with vast terrains, long distances and low wages, health and wellness often takes a backseat. On average truck drivers spend 12 of the 24 hours on

road. Considering the lack of resources and unawareness about risk factors, hypertension is a growing health risk among truckers. Job insecurity, odd working hours, competitive industry, low wages, lack of work hour regulation system are some of the reasons for this growing concern. Hypertension requires continuous medication and lifestyle modification, if left uncontrolled, hypertension can result in systemic complications. It can cause endothelial dysfunction, leading to the development of atherosclerosis, which can culminate in cardiovascular events like myocardial infarction, stroke, or peripheral artery disease. Additionally, hypertension can cause damage to the renal vasculature and eventually lead to decreased glomerular filtration rate, renal insufficiency, and even renal failure. It can also lead to cerebrovascular accidents, cognitive dysfunction, and optic neuropathy due to hypertensive retinopathy. Hypertension can have a neurodegenerative impact, leading to central



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Submitted on: 01-Dec-2022; Accepted on: 11-Apr-2023

nervous system damage, autonomic neuropathy, and impaired baro reflex function. Additionally, hypertension can lead to the development of insulin resistance and metabolic syndrome, which can eventually cause diabetes mellitus. Sexual dysfunction is also associated with hypertension, with men potentially developing erectile dysfunction and both men and women experiencing decreased libido. Therefore, controlling hypertension through lifestyle modifications and medications is critical to preventing these complications. The study was conducted to study the prevalence of hypertension among truck drivers of Shivpuri district of Madhya Pradesh and to study the associated risk of hypertension amongst them.

MATERIALS AND METHOD

The present study was cross-sectional in nature and conducted among the truckers of transport union of Shivpuri district, Madhya Pradesh, India. Sample size consisted of 770 drivers which showed 67% prevalence of hypertension. Local rickshaw / bus drivers were excluded from the study considering different job profile and time frame of their jobs.

The data was collected in preformed, pretested and semi-structured questionnaire by interview technique from 1st November 2022 to 15th march 2023. Prior permissions were taken from the transport unions and the interviews were conducted with informed consent. Sessions were recorded for research purposes and observational analysis. Interviews were conducted by physically visiting the unions frequently. Interviews were conducted in morning and afternoon slots as most truck drivers work late night shifts. The questionnaire constituted demographic details of the truckers, history of any chronic disease, family history, average working hours per day, dietary habits, physical activity and smoking/ drug consumption habits (if any).

The participants were also requested for their anthropometric measurements - weight, height and waist size were recorded along with the blood pressure of each individual was recorded on site using sphygmomanometer. Blood Pressure was recorded in a sitting position in the right arm. 2 arbitrary reading were recorded at an interval of 10 minutes in all participants. Mean/ average value of these readings were taken as final readings.

On the basis of the recorded blood pressure all the participants were categorised as per the Joint National

Committee (JNC) 2007 criteria. Data entry was done in Microsoft Office Excel 2007 followed by analysis using SPSS version 22.

Inclusion criteria: Truck drivers enrolled with the Transportation union and are over the age of 20 years. Drivers who possessed an active Commercial Driver's License by Department of Transportation were included. Drivers who were willing to take part were made part of this study.

Exclusion criteria : Drivers who were not willing to take part were excluded from the study.

RESULTS

A total 770 truck drivers participated in the study out of total 900 drivers in the transport union in the area of Shivpuri, Madhya Pradesh (Table 1). Age range of the participants is between 20- 55 years. All the drivers were males. Total prevalence of hypertension was found 45% including 15% self reported and 30% detected during the study and is depicted in table 2.

HYPERTENSION	YES (%)	NO (%)
Self-reported	107 (15%)	224 (32%)
Detected in present study	210 (30%)	231 (33%)
Total	315 (45%)	455(65%)

Table 1. Distribution of truckers as per their self-reported hypertension and hypertension detected in present study (n=770)

Higher prevalence of hypertension was reported in 40-49 years age group followed by 30-39 years of age group. Hypertension was more prevalent among truckers who were chronic smokers and who consumed alcohol and tobacco products. Significant association was found during assessment of risk factors like lack of physical activity, obesity, late working hours, high BMI, history of drug addiction and hypertension (table 3).

DISCUSSION

According to WHO, an approximate 1.18 billion of world's adult population are affected by hypertension.⁵ In India, a systematic review and meta-analysis determined the prevalence of hypertension (high blood pressure) to be around 29-30% in adults.³

The present study in the state of Madhya Pradeshrevealed a drastic 29% of the reported

RISK FACTORS	NORMAL n=455 (%)	HYPERTENSION n=315 (%)
AGE GROUP (YEARS)		
20-29	212(46.5%)	51(16%)
30-39	115(25.2%)	85 (26.9%)
40-49	55(12%)	92 (29%)
50-59	73(16%)	87 (27.6%)
WORK EXPERIENCE (YEARS)		
<10	158(34.7%)	65 (20.6%)
10-19	73(16%)	69(21.9%)
20-29	142(31.2%)	84 (26.6%)
>29	82(18%)	97(30.7%)
FAMILY HISTORY		
Present	58 (12.7%)	221(70.1%)
Absent	397(87.2%)	94(30.7%)

Table 2. Comparison of truckers between various risk factors and prevalence of hypertension (n=770).

that hypertensive patients belonged to an age group of 40-49 years of age followed by other age groups.

The provision of health facilities to mobile population of truck drivers in a state of tough terrains and isolated locations like Madhya Pradesh should be on high priority list for health service providers.⁶ Based on the results of the present study, it is recommended that health programs combine screenings for multiple ailments, especially asymptomatic systemic conditions at a single urban setting^{7,8} where truck drivers could stop by for taking some rest or refuelling and also get themselves checked. The present study emphasises on the need for clinical examinations and screening of truck drivers through hypertension screening programs.

The present study displays higher prevalence of hypertension amongst the truckers is reported to be far higher than in the general population of India which is estimated to be 13.8% in general male population of age group 15-49 years old.⁹ Hypertension is consistently found to be highly prevalent among truckers of same age group. Additionally only 15% of the participants were aware of their condition and had ever undergone checkup for the same. A roughly 5% of the self reported hypertensive patients would receive the advised treatment. Others opt not to continue with the medication due to the side effects of the medications such as feeling dizzy, nausea etc that often requires taking leave from their work.

RISK FACTORS	NORMAL (n= 455) (%)	HYPERTENSION (n=315) (%)
HISTORY OF ADDICTION		
Yes	168(36.9%)	59%
No	287(63%)	41%
PHYSICAL ACTIVITY		
Regular	327(71.9%)	28%
Irregular	127(28%)	72%
LATE NIGHT SHIFTS		
Yes	88%	93%
No	12%	7%
BMI STATUS		
Underweight (<18.50)	11%	8%
Normal (18.50-24.99)	44%	30%
Overweight (25.00-29.99)	32%	44%
Obese(>30.0)	13%	18%
CONSUMPTION OF EXTRA SALT		
Yes	67%	54%
No	33%	46%

Table 3. Risk factors associated with hypertension among truckers (n=770)

Among all the subjects diagnosed with hypertension, physical inactivity was prevalent in 72%, history of addiction was reported in 59% of the patients with 24% consuming only alcohol and rest 35% were involved in smoking along with alcohol consumption. Only 30% had normal body weight while 44% were deemed overweight.

Age and Family history of hypertension were related to hypertension and other Cardiovascular diseases.

CONCLUSION

Hypertension was found in a much pronounced manner amongst the elderly age group as compared to the younger generation. Dietary habits and lifestyle plays a crucial role in hypertension. Truckers who worked late night shifts were found to be hypertensive. Although consumption of extra salt had no direct relation to hypertension amongst the truckers, lack of physical activity was evident amongst all those who were detected hypertensive. Smoking, consumption of alcohol and tobacco has a direct relationship and are evident risk factors for hypertension and other systemic conditions.

Most truckers refrain from medicines in the fear of feeling dizzy and weak that might hamper their work performance, thereby they skip their medicines. Central obesity and high BMI status were found as significant risk factors for hypertension.

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Cite this article as:

Prasad M, Singh K. A Study to Assess the Prevalence and Risk Factors of Hypertension among the Truck Drivers of district Shivpuri, Madhya Pradesh, India. Int Healthc Res J. 2023;7(1):OR10-OR13. <https://doi.org/10.26440/IHRJ/0701.04601>

AUTHOR AFFILIATIONS: (*Corresponding Author)

1. MBBS, Consultant Practitioner, Shivpuri, Madhya Pradesh, India
2. BDS, Consultant Dentist, Bhopal, Madhya Pradesh, India

Source of support: Nil, **Conflict of interest:** None declared

Contact Corresponding author at: Sharmam_1988[at]gmail[dot]com