

Evaluation of selected epidemiological Factors Associated with Hypertension among Truck Drivers - A cross sectional study

Satish More^{*}, Sumit Wasnik^{**}, Priyanka Malyala^{***}

^{*}Associate Professor, Dept. of Community Medicine, Kanachur Institute of Medical Sciences, Natekal, Mangaluru.

^{**}Assistant Professor, ^{***}IVth year MBBS Student, Department of Community Medicine, Dr. D. Y. Patil Medical College, Nerul, Navi Mumbai.

Email: satishcmore@gmail.com

Abstract

Background: Truck drivers are at higher risk for developing cardiovascular diseases such as hypertension because of the nature of their job and the environment in which they work. **Objectives:** Explore the selected epidemiological factors associated with hypertension and to assess the knowledge about role of diet and exercise in controlling blood pressure. **Methodology:** This was a cross sectional study conducted in Agricultural Produce Market Committee (APMC) market, which is a big truck terminal in Navi Mumbai of Maharashtra state. **Results and discussion:** The mean age of truck drivers was 33.6 year with mean duration of driving experience was 6.3 years. BMI was found significantly associated with hypertension ($p < 0.000$, $df = 12$, chi value = 56.60). Prevalence of hypertension in truck drivers was 45% which include stage 1 and stage 2 hypertension. **Conclusion:** Many factors can be responsible for hypertension in them such as obesity and addiction which are more common in truck drivers. Various other factors like lack of sleep, lack of proper diet and exercise can be contributing for hypertension in truck drivers.

Key words: Truck drivers, hypertension, Body mass index, Addiction, exercised.

*Address for Correspondence:

Dr. Sumit Wasnik, Assistant Professor, Department of Community Medicine, Dr. D. Y. Patil medical college, Nerul, Navi Mumbai.

Email: sumitwasnik9@gmail.com

Received Date: 18/11/2017 Revised Date: 16/12/2017 Accepted Date: 05/01/2018

DOI: <https://doi.org/10.26611/1011514>

Access this article online

Quick Response Code:



Website:

www.medpulse.in

Accessed Date:
09 January 2018

INTRODUCTION

Hypertension is a chronic condition of concern due to its role in causation of coronary heart disease, stroke and other vascular complications. It is the commonest cardiovascular disorder, posing a major public health challenge to population in socioeconomic and epidemiological transition. It is one of the major risk factors for cardiovascular mortality, which accounts for 20-50% all deaths.¹ According to World Health Report 2002, cardiovascular diseases (CVDs) will be the largest cause of death and disability by 2020 in India. In 2020 AD, 2.6 million Indians are predicted to die due to

coronary heart disease which constitutes 54.1 % of all CVD deaths.² Many studies have demonstrated that there is a strong correlation between risk factors of cardiovascular diseases and occupational factors.³⁻⁶ Truck drivers are at higher risk for developing cardiovascular diseases such as hypertension because of the nature of their job and the environment in which they work. Obesity and hypertension are important risk factors for cardiovascular diseases and is common among professional drivers.⁷ Their occupation predisposes them to a multitude of risk factors such as prolonged sitting and motor vehicle driving, tight running schedules, reduced rest breaks, traffic congestion, the sedentary nature of job, and resultant physical, psychological and behavioral problems.⁽⁸⁾ Long haul truck drivers may also be exposed to severe physical and mental health problems due to their peculiar work routine. In general, they eat in highway restaurants that offer high-calorie foods with low nutritional value and consume alcoholic beverages; they drive for many hours in a row, sleep little and use medication to stay alert. We have conducted this study to explore the selected risk factors associated with hypertension in truck drivers.

METHODOLOGY

Study design: This was a cross sectional study conducted in APMC market, which is a big truck terminal in Navi Mumbai of Maharashtra state.

Sample size: Sample size was calculated with the formula $4pq/12$

Considering the prevalence of hypertension is 40% with 20% allowable error, sample size would be

$4 \times 40 \times 60 \div 8 \times 8$ (prevalence is $p=40\%$ and l i.e allowable error is 20%)

Sample size is 150. But during the study period we get 200 truck drivers in the medical camps who were agreed to participate in the study.

Inclusion criteria: Only those working as full time drivers in trucks and those who gave consent were are included in the study.

Exclusion criteria: Part time or occasional drivers and cleaners were excluded.

Study duration: 1 month (Oct – Nov 2017)

Methodology

Camps were arranged with the help of concerned NGO. A detailed physical examination was conducted by a team of medical doctors. Blood pressure was measured on right arm in sitting position using digital sphygmomanometer. Two

readings were taken at 3 minutes interval and the mean of the two was recorded. Standard guidelines of New ACC to classify blood pressure were followed.⁹

Anthropometric measurements: Calibrated balance beam scale was used to measure weight in the upright position to the nearest 0.1 kg. Height was measured with bare foot to the nearest 0.1cm using calibrated Stadiometer.

Body mass index (BMI) was calculated by dividing observed weight by height squared (kg/m^2). BMI was classified using the method stipulated by the World Health Organization for South Asians.^{10,11}

Validated Questionnaires were asked to the participants on all required epidemiological factors.

The following criteria and definitions were used.¹²

Regular sleep daily- 8 hours in night is consider as a adequate sleep.

Subjects were considered active smokers if they use tobacco daily in any quantity or at quit smoking in the previous 12 months.

Subjects were considered non-smokers if they had not used tobacco for the past 12 months.

Alcohol use: Present consumer was defined as person who continued to consume alcohol every day or some days.¹³

RESULTS

Table 1: Age, Marriage, duration of driving, sleep hours, BMI and addiction in truck drivers

Parameter	Total	Percent	Chi square value	P Value
Age group (in year)				
Less than 25	33	16.5%	4.257	0.894
26 to 35	102	51%		
36 to 45	31	15.5%		
more than 45	34	17%		
Married/ Unmarried				
Yes	192	96%	8.520	0.036
No	8	4%		
Duration of driving in years				
Less than 5 years	45	22.5%	11.486	0.074
5 to 10 years	118	59%		
More than 10 years	37	18.5%		
Regular sleep daily				
Yes	35	17.5%	4.051	0.256
No	165	82.5%		
Body Mass Index				
18.5 to 24.99 (normal)	95	48%	49.228	0.000*
25 to 29.99 (Overweight)	56	28%		
30 to 34.99(Obese I)	26	13%		
35 to 39.99 (Obese II)	17	8.5%		
More than 40(Obese III)	6	3%		
Addiction				
Yes	188	94%	5.383	0.146
Alcohol	8	4%		
Smoking	6	3%		
Both	169	84.5%		
Other	5	2.5%		
No	12	6%		

Table 2: Blood pressure in truck drivers

Blood pressure level	Total number	Percentage
Normal: Less than 120/80 mm Hg	63	31.5%
120-129/less than 80	47	23.5%
130-139/80-89	56	28%
140 and more /90 and more	34	17%

Table 3: Knowledge of low salt diet and exercise in maintaining regular blood pressure

Knowledge	Total number	Percentage
Dose low salt diet has good effect on BP?		
Yes	20	10%
No	122	61%
Don't know	58	29%
Does regular exercise will have good effect on BP?		
Yes	78	39%
No	35	17.5%
Don't know	87	43.5%

It was observed that out of 200 truck drivers, 33 (16.5%) were less than 25 years of age and 102 (51%) were 26 to 35 years of age. Only 31 (15.5%) were 36 to 45 years of age and 34 (17%) were more than 45 years of age. The mean age was 33.6 years of age. 192 (96%) were married and 8 (4%) were unmarried. All were male drivers. 63 truck drivers (31.5%) had normal level of blood pressure i.e less than 120/80 mm Hg Blood pressure was elevated i.e Systolic between 120-129 and diastolic less than 80 in 47(23.5%). 56 (28%) truck drivers had stage 1 hypertension (Systolic between 130-139 or diastolic between 80-89) and 34(17%) Stage 2 hypertension (Systolic at least 140 or diastolic at least 90 mm Hg). Body mass index of truck drivers- 95 (48%) truck drivers had BMI between 18.5 to 24.99 and 56 (28%) had BMI between 25 to 29.99. 26 (13%) truck drivers had BMI between 30 to 34.99 and 17 (8.5%) had BMI between 35 to 39.99.6(3%) truck drivers had BMI more than 40. Addiction in truck drivers-Addiction to one or more substances was present in 188 truck drivers and 12 had denied any history of addiction. It was found that 169 truck drivers who had history of addiction were taking alcohol and smokers of which 110 were taking alcohol and smoking almost daily. 59 of these took alcohol and smoking infrequently. 5 had history of taking some other types of addiction irregularly. 6 truck drivers had addiction for smoking only and 8 had addiction for alcohol drinking only. 35 (17.5%) of truck drivers said to have good sound sleep daily that is minimum 8 hours but 165 (82.5%) had sleep hours less than 8 hours per day. Knowledge about role of diet and exercise in prevention of hypertension- 10% of truck drivers said that low salt diet can reduce the blood pressure in hypertension. 61% said there is no effect of low salt diet in reducing hypertension and 29% had no idea about relation of low salt and hypertension. When asked about effect of

exercise on hypertension, 39% said that there is positive effect on reducing or to control blood pressure whereas 17.5% said that there is no such effect. 43.5% didn't know anything about the asked question.

DISCUSSION

Truck drivers are always at the risk of developing of non communicable diseases such as hypertension because of their work profile and working condition. In our study we have found the mean age of truck drivers was 33.6 year with mean duration of driving experience was 6.3 years. Both of these factors was found to be non significant when compared with hypertension (for age chi square is 4.257 with p 0.894 and for driving experience it is chi square is 11.486 and p 0.074). 192 (96%) were married and 8 (4%) were unmarried and no association was found with hypertension (chi square 8.520 and p is 0.036). Study conducted by Udayar SE, *et al* ⁽¹⁴⁾ shows the Mean age of study subjects was 41.35±10.04 yrs with a range of 20-60 yrs. 39.34% subjects were above 45 years of age. 214 (87.71%) subjects were ever married.

Prevalence of hypertension in truck drivers was 45% which include stage 1 and stage 2 hypertension as classified by American college of cardiology ⁽¹⁰⁾. Elevated blood pressure was found in 23.5% of truck drivers which was previously called as prehypertension. None of them were aware of their status.

Our study results can be compared with the study conducted by Pawan kumar *et al* ⁽²²⁾ shows the prevalence of hypertension in truck drivers was 45.76% had hypertension

Body mass index of truck drivers- 95 (48%) truck drivers had normal BMI between 18.5 to 24.99 and 56 (28%) drivers are overweight. 24.5% truck drivers were obese out of which 13 % were classified as obese I, 8.5% were obese II and 3% were obese III. BMI was found significantly

associated with hypertension ($p < 0.000$, $df = 12$, chi value-49.228). Study conducted by Udayar SE *et al*⁽¹⁴⁾ also show the same finding. ($p < 0.005$)

Addiction was found to be very common among truck drivers. Out of 200 drivers, 188 (94%) had history of smoking or alcohol and 5 had history of some other type of addiction such as drugs. We did not found significant association of addiction and hypertension in truck drivers. (chi square value 5.383 and p value 0.146)

Knowledge about exercise and low salt food in reducing the blood pressure was very low in truck drivers. 90% and 60% of the truck drivers have no idea about role of low salt diet and effect of exercise on high or to maintain blood pressure respectively.

CONCLUSION

This study shows that hypertension is more common in truck drivers as compared to general population. Many factors can be responsible for hypertension in them such as obesity and addiction which are more common in truck drivers. Various other factors like lack of sleep, lack of proper diet and exercise can be contributing for hypertension in truck drivers. To conclude that these factors are responsible for hypertension in truck drivers we need more study on a bigger scale. From this study we can say that ignorance about health, lack of importance of diet and exercise is more prevalent in truck drivers which can be the area where we can focus to improve their health by proving health education.

Limitation

Sample size of truck drivers in our study is less to generalise our results on total population of truck drivers.

Acknowledgments

The authors are extremely thankful to concerned NGO which helped in getting data for study and in conducting camps for truck drivers. We are thankful to all participants who took part in the study.

REFERENCES

1. K. Park text book of preventive and social medicine 23rd edition, page number 372
2. National Cardiovascular Disease Database- IC HEALTH, V.S.Ajay, Ruby Gupta, JeemonPanniyammakkal, Vivek Chaturvedi, Dorairaj Prabhakaran, K Srinath Reddy. With support from Ministry of Health and Family Welfare, Government of India and World Health Organization-Available on http://www.searo.who.int/india/topics/cardiovascular_dis site and accessed on 15 sept 2017.

[eases/NCD Resources National CVD database-Final Report.pdf](#)

3. Winkleby, Marilyn A., et al. "Excess risk of sickness and disease in bus drivers: A review and synthesis of epidemiological studies." *International Journal of Epidemiology* 17.2 (1988): 255-262.
4. Albright, Cheryl L., et al. "Job strain and prevalence of hypertension in a biracial population of urban bus drivers." *American Journal of Public Health* 82.7 (1992): 984-989.
5. Ragland, David R., et al. "Prevalence of hypertension in bus drivers." *AAOHN journal* 37.2 (1989): 71-79.
6. Bigert, C., et al. "Time trends in the incidence of myocardial infarction among professional drivers in Stockholm 1977-1996." *Occupational and environmental medicine* 61.12 (2004): 987-991.
7. Hirata P R, Malosa Sampaio M L, StudartLeitaoFilho S F, Braghiroli A, Balbi B et al. General Characteristics and Risk Factors of Cardiovascular Disease among Interstate Bus Drivers: Clinical Study. *The Scientific World Journal* 2012;(10):1-7.
8. Borle A, Agawane S, Gunjal S, Tayde P. Study of occupational factors associated with low back pain in truck drivers of Nagpur City, India. *Int J Med Health Sci* 2012;1:53-60.
9. New ACC/AHA High Blood Pressure Guidelines Lower Definition of Hypertension- <http://www.acc.org/latest-in-cardiology/articles/2017/11/08/11/47/mon-5pm-bp-guideline-aha-2017>
10. World Health Organization. Obesity- Preventing and managing the global epidemic. WHO technical report series 894. Geneva: WHO; 1999. Available from http://www.who.int/nutrition/publications/obesity/WHO_TRS_894/en/. (Accessed on 15 sep-2017).
11. World Health Organization. The Asia - Pacific prospective. Redefining Obesity and its Treatment. Sydney: Health Communications; Feb 2000. Available from <http://www.wpro.who.int/nutrition/documents/docs/Redefiningobesity.pdf>. Accessed on (15 sept-2012).
12. US Department of Health and Human Services. Centers for Disease Control and Prevention. Atlanta: Current Cigarette Smoking Among Adults — United States, 2005–2012. *Morbidity and Mortality Weekly Report*. 2014 Jan; 63(2):29-34.
13. World Health Organization. International Guide for Monitoring Alcohol Consumption and Related Harm. Geneva: WHO, 2000. Available from <http://apps.who.int/iris/handle/10665/66529>. (Accessed on 15 sept 2015).
14. Udayar SE, Rajesh Kumar K, Praveen Kumar BA, Vairamuthu S, Thatuku S. Study of Cardiovascular Risk Factors Among Transport Drivers In Rural Area Of Andhra Pradesh. *Ntl J of Community Med* 2015; 6(4):566-570.
15. Morbidity profile of long distance truck drivers in Hyderabad city, India Pawan Kumar Sharma and Enakshi Ganguly, *J Dr NTR Univ Health Sci.* ; 3(4): 234–237. doi:10.4103/2277-8632.146603.

Source of Support: None Declared
Conflict of Interest: None Declared