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Original Research

A Study Of Prevalence Of Hypertension And Risk Factors Among State Road Transport Corporation Workers

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ABSTRACT

Background: Cardiovascular disease is the leading cause of death worldwide and a major economic global burden.[1]An estimated 1.13 billion people worldwide have hypertension.[2]Non-communicable diseases are currently the leading cause of preventable death and disability in India, accounting for two out of every three deaths. The number of individuals with hypertension Is projected to increase to 214 million by 2030 from 118 million in 2000.Furthermore, diabetes and hypertension are important risk factors for both the major forms of cardiovascular disease (coronary heart disease and stroke)[3]. Transport workers have to travel long distance, they have to perform stressful night duties, conditions of road are not so good, they have to stay away from their families. They serve in the nation to make transport service more reliable to community. Therefore, the health of transport sector workers is of concern not only for the sake of themselves but for the safety of people in community.

Aim: To study prevalence of hypertension and risk factors among state road transport corporation workers.

Objectives:1. To find out prevalence of hypertension in state transport workers. 2. Study the associated risk factors for hypertension in state transport workers.

Material and Methods: A cross-sectional study was carriedoutfrom January 2021 to January 2023among341 stateroad transport corporation workers in the randomly selected bus depot in the district where the medical college is situated.

Results and Conclusion: Overall prevalence of hypertensionin state road transport corporation workerswas 30.79%. Higher prevalence was found in drivers than in conductors and Office Depotworkers.This study also observed that risk factors such as age, smoking, alcohol, less physical activity, more salt consumption, long duration of service, increased waist hip ratio, less fiber and fruit intake and higher fat consumption were significantly associated with development of hypertension.

Keywords: hypertension, risk factors state, road transport corporation workers.

INTRODUCTION

One of the major treatable public health problems on the rise is hypertension[4].Prevalence of hypertension continues to rise in developing countries such as India.[5] Prevalence of hypertension among Indians aged 15–49 years was 40.6%[6].

Hypertension, the silent killer, is a modern day's epidemic and is an increasingly important medical and global public health issue due to its role in causation of coronary heart disease, stroke and other vascular complications.[7]Diabetes and hypertension prevalence is high in middle and old age across all geographical areas

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and socio demographic groups in India, and hypertension prevalence among young adults is higher than previously thought.[8]

Bus or truck driving is considered one of the most stressful occupations and is associated with increased risk of chronic diseases, in particular, cardiovascular risk factors and diseases[9]. The key intervention in cardiovascular diseases is to identify risk factors early and initiate therapy to control them. An important modifiable risk factor for CVDS is systemic arterial hypertension. Hence, diagnosis of hypertension and appropriate treatment to optimize BP are important public health goals worldwide[10].

Transport workers have to travel long distance, they have to perform stressful night duties, conditions of road are not so good, they have to stay away from their families. Especially drivers have to sit at one place for long time. State transport workers have less payment and also doesn't have pension scheme, so this study will be conducted to determine the prevalence of hypertension among transport workers and its risk factors. They serve in the nation to make transport service more reliable to community. Therefore, the health of transport sector workers is of concern not only for the sake of themselves but for the safety of people in community.

MATERIALS & METHODS

- **Study design:** A community based cross sectional study.
- **Study setting:** In district where medical college is situated there were 8 bus depots, out of that we selected one bus depot from our study setting by lottery method.
- **Ethical considerations:** Ethical committee approval was obtained from the Institutional ethical committee prior to the start of the study.
- **Study duration:** The present study was carried out over a period of 2 years from January 2021 to January 2023.
- **Study population:** From selected bus depot by lottery method all state transport were included in the study by inclusion and exclusion criteria.
- **Inclusion criteria:**All employees of bus depot, those who were willing to participate.
  Employees who were given consent for the study.
- **Exclusion criteria:**Those state transport workers who were not available or absent at the time of study.
- **Sample Size:**
  Sample size calculated by using formula $n= t^2 p q /l^2$

$n = (1.96)2*(0.278)*(0.722)/(0.05)^2$
$=3.8416*0.2007/0.0025$
$=0.771/0.0025$
$=308.4$

Where, n=required sample size,
t=confidence level at 95% (standard value of 1.96),
p=estimated prevalence of hypertension,
l=precision value (value is 0.05).

The prevalence of hypertension among road transport corporation (RTC) employees was observed to be 27.8% in a study by Dhamodharan S[11] et al. Sample size found to be 309.

- **Data collection:** Ethical clearance from institutional ethics committee was obtained. Data collected by using preformed and pretested questionnaire by personal interview method. Written informed consent was obtained prior to the study.
- **Data entry:** Collected data was entered into Microsoft-Excel 2010 worksheets and coded appropriately.
- **Data analysis:** Data was analysed using Microsoft Excel 2010, trial Version-20 of SPSS. Descriptive statistics (percentage, frequency) were used to describe the data appropriately.
- **Reference Citation:** Vancouver system of listing and citing of reference was used. The references were numbered according to their appearance in the text and listed accordingly.

RESULTS

Table 1: Distribution of study subjects according blood pressure status.

Classification	Systolic blood pressure		Diastolic blood pressure	No.	Percentage
Normal	**<120**	**AND**	**<80**	**41**	**12.02**
Prehypertension	**120-139**	**OR**	**80-89**	**162**	**47.50**
Stage I HTN	**140-159**	**OR**	**90-99**	**95**	**27.85**
Stage II HTN	**>160**	**OR**	**>100**	**10**	**2.93**
Total				**341**	**100**

Table 2: -Prevalence of hypertension in state road transport corporation workers.

Blood pressure	No	Prevalence (%)
Hypertensive	105	**30.79**
Normotensive	236	69.21

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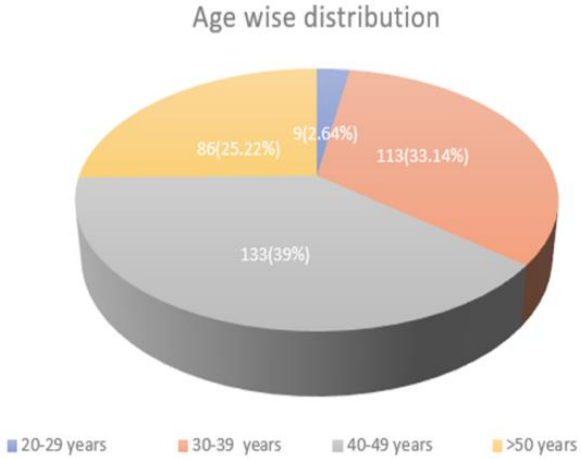
Total	341	100

Figure 1: Age wise distribution of workers



Association tables

Table 3: Risk Factors associated with Hypertension in state road transport corporation workers.

Smoking	Hypertension	No Hypertension	Total
Present	67	90	157
Absent	38	146	184
Total	105	236	341
X^2 =19.28, d. f=1, p value <0.05			
Alcohol	Hypertension	No Hypertension	Total
Present	76	55	131
Absent	29	181	210
	105	236	341
X^2 =73.98, d. f=1, p value <0.05			
Exercise	Hypertension	No Hypertension	Total
Present	15	95	110
Absent	90	141	131
	105	236	341
X^2 =22.43, d. f=1, p value <0.05			
Salt intake (>6gm/day)	Hypertension	No Hypertension	Total
Present	86	52	138
Absent	19	184	203
	105	236	341
X^2 = 108.1, d. f=1, p value <0.05			
Fat intake	Hypertension	No Hypertension	Total
Present	75	105	180
Absent	30	131	161
	105	236	341
X^2 = 21.16, d. f= 1, p value <0.05			
Adequate Fiber intake	Hypertension	No Hypertension	Total
Present	15	109	124
Absent	90	127	217
Total	105	236	341
X^2 = 31.96, d. f=1, p value<0.05			
BMI (>25)	Hypertension	No Hypertension	Total
(>25)	43	82	125
(<25)	62	154	216

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	105	**236**	**341**
X^2 = 1.206, d. f=1, p value>0.05			
Waist hip ratio	**Hypertension**	**No Hypertension**	**Total**
(>0.9)	**5**	**71**	**76**
(<0.9)	**100**	**165**	**265**
	105	**236**	**341**
X^2 = 26.9, d. f=1, p value<0.05			
Service	**Hypertension**	**No Hypertension**	**Total**
>25yrs	**26**	**28**	**54**
<25yrs	**79**	**208**	**287**
	105	**236**	**341**
X^2 = 9.07, d. f=1, p value<0.05			
Adequate fruit consumption	**Hypertension**	**No Hypertension**	**Total**
Present	**30**	**108**	**138**
Absent	**75**	**128**	**203**
	105	**236**	**341**
X^2 = 8.915, d. f= 1, p value<0.05			

DISCUSSION

In figure.1it was found that out of 341 study participants most of the workers in the study population were in the age group of 40-49 i.e. 133(39.00%). Mean age of workers was 43.0 ± 8.2 years. figure 1 shows age wise distribution of workers. Age specific prevalence was found 44.44% in 20-29 years of age group but only 9 workers were there in 20 to 29 years age group so it does not show actual age specific prevalence. Majority 39% of workers were belonged to 40-49 years. 30.07% prevalence was found in 40-49 years of age group and for >50 years of age group, prevalence was found to be 43.02%. Chi square test revealed highly significant association in between age of workers and hypertension. Dhamodharan S[11] et al found in the study that 29.6% were belonging to the age group of 41-50. Lakshman A[10] et al shown that (24.6%) of the participants belong to 41-50 years age group. Borle A[12] et al in his study it was seen that majority of workers (92.25%) belonged to age group of >35 years. Sheethal MP[13] et al found in the study, the mean age of the study subjects was 42.4 ± 10.22 years, Boratne A[14] et al mean age was 45.6 ±7.5 years. Das M43 et al study brings out that mean age of the study subjects was 42.4 ± 10.22 years.

In the table 1& 2, it was observed that out of 341 state road transport corporation workers 105(30.79%) were hypertensives, 162 were prehypertensive and 41 workers were having blood pressure in normal range, so prevalence of hypertension in state road transport corporation workers was found to be 30.79%. Similar findings were seen in study by Dhamodharan S[11] et al on-transport workers in south India, the prevalence of hypertension among the RTC employees was 27.8% (n=125). Prevalence of hypertension was found to be 34.8% in a study by Borle A[12] et al on occupational bus drivers of Nagpur city. Jafaripour I[15] et al found prevalence of hypertension as 30.7% in their study carried out in Iran while Katti SM[16] et al found prevalence of 23.8% in study carried out in Belgaum Karnataka. Taklikar C[17]et al in study carried out among210 bus drivers of Mumbai central bus depot who found 24.3% hypertensive bus drivers. Studies done in Bangkok by Kaewboonchoo O[18] et al and Saleekul S et al shows lower prevalence of hypertension i.e.23% and 17.5% respectively.

Table 3,shows that there is significant association found between smoking (X^2 =19.28, d. f=1, p value <0.05), alcohol (X^2 =73.98, d. f=1, p value <0.05), physical exercise (X^2 =22.43, d. f=1, p value <0.05), salt intake >6gm/day(X^2 = 108.1, d. f=1, p value <0.05), fat intake (X^2 = 21.16, d. f= 1, p value <0.05) and hypertension.

In current study, from observation table. 3, it was seen that there is significant association found between less consumption of fiber (X^2 = 31.96, d. f=1, p value<0.05), less consumption fruits (X^2 = 8.915, d. f= 1, p value<0.05) in the diet and hypertension. In this study it was seen that there is no association found between BMI (X^2 = 1.206, d. f=1, p value>0.05) and hypertension. Waist hip ratio >0.9 (X^2 = 26.9, d. f=1, p value<0.05), service >25 years in transport sector (X^2 = 9.07, d. f=1, p value<0.05) were found significantly associated with hypertension.

CONCLUSION

A community based cross sectional study was undertaken among state road transport corporation workers, to find out prevalence of hypertension and risk factors of it. Overall prevalence of hypertensionin state road transport corporation workers was 30.79%. Higher prevalence found in drivers than in conductors and office depo workers.

This study also observed that risk factors such as age, smoking, alcohol, less physical activity, more salt

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consumption, long duration of service, increased waist hip ratio, less fiber and fruit intake and higher fat consumption were significantly associated with development of hypertension.

REFERENCES

1. Lear SA, Hu W, Rangarajan S, Gasevic D, Leong D, Iqbal R, et al. The effect of physical activity on mortality and cardiovascular disease in 130 000 people from 17 high-income, middle-income, and low-income countries: the PURE study. Lancet. 2017 Dec 16;390(10113):2643–54.
2. Hypertension [Internet]. [cited 2020 Nov 19]. Available from: https://www.who.int/news-room/fact-sheets/detail/hypertension
3. Mohan S, Jarhyan P, Ghosh S, Venkateshmurthy NS, Gupta R, Rana R, et al. UDAY: A comprehensive diabetes and hypertension prevention and management program in India. BMJ Open. 2018 Jul 1;8(6).
4. Vennu V, Abdulrahman TA, Bindawas SM. The prevalence of overweight, obesity, hypertension, and diabetes in India: Analysis of the 2015–2016 national family health survey. Int J Environ Res Public Health. 2019 Oct 2;16(20).Jain J, Saurabh S, Kumar P, Verma MK, Goel AD, Gupta MK, et al. COVID-19 vaccine hesitancy among medical students in India. Epidemiol Infect. 2021.
5. Mittal C, Singh M, Bakhshi T, Ram Babu S, Rajagopal S, Ram CVS. Isolated diastolic hypertension and its risk factors in semi-rural population of South India. Indian Heart J. 2019 May 1;71(3):272–6.
6. Abariga SA, Khachan H, Al Kibria GM. Prevalence and Determinants of Hypertension in India Based on the 2017 ACC/AHA Guideline: Evidence from the India National Family Health Survey. Am J Hypertens [Internet]. 2020 Mar 13 [cited 2020 Nov 24];33(3):252–60. Available from: https://academic.oup.com/ajh/article/33/3/252/5618772.
7. Prabhu PM, Brahmankar TR, Prabhu PM. Prevalence and risk factors of hypertension among the bank employees of Western Maharashtra-a cross sectional study. Int J Community Med Public Heal Brahmankar TR al Int J Community Med Public Heal [Internet]. 2017 [cited 2020 Nov 10];4(4):1267–77. Available from: http://www.ijcmph.com.
8. Geldsetzer P, Manne-Goehler J, Theilmann M, Davies JI, Awasthi A, Vollmer S, et al. Diabetes and hypertension in India a nationally representative study of 1.3 million adults. JAMA Intern Med. 2018 Mar 1;178(3):363–72.
9. Mohsen A, Hakim SA. Workplace stress and its relation to cardiovascular disease risk factors among bus drivers in Egypt. East Mediterr Heal J. 2019;25(12):878–86.
10. Lakshman A, Manikath N, Rahim A, Anilakumari VP. Prevalence and Risk Factors of Hypertension among Male Occupational Bus Drivers in North Kerala, South India: A Cross-Sectional Study. ISRN Prev Med [Internet]. 2014 [cited 2020 Nov 13];2014:1–9. Available from: https://pubmed.ncbi.nlm.nih.gov/24971195/
11. Dhamodharan S, Megala M, Duraimurugan M, Chellavel Ganapathi K. Prevalence of hypertension and its risk factors among transport workers in South India. Int J Community Med [Internet]. 2020 [cited 2020 Nov 4];7(4):1329–35. Available from: http://www.ijcmph.com
12. Borle AL, Jadhao A. PREVALENCE AND ASSOCIATED FACTORS OF HYPERTENSION AMONG OCCUPATIONAL BUS DRIVERS IN NAGPUR CITY, CENTRAL INDIA-A CROSS SECTIONAL STUDY [Internet]. Vol. 6, National Journal of Community Medicine | Volume. 2015 [cited 2020 Nov 9]. Available from: www.njcmindia.org
13. Mp S, Bj M, Br H. Assessment of quality of life (QoL) in known hypertensive workers of Karnataka State Road Transport Corporation (KSRTC), Mandya district. International Journal of Medical Science and Public Health Online. 2015;4(10).
14. Boratne A v, Venkataraman S. Suguna A., et al.: Cardiovascular disease risk in Transport sector employees. Transport sector and cardiovascular disease risk estimation: cross-sectional analysis based on WHO/ISH chart. National Journal of Research in Community Medicine | Jan-Mar [Internet]. 2019 Mar 31 [cited 2020 Nov 13];8(1):50–4. Available from: http://journal.njrcmindia.com/index.php/njrcm/article/view/109
15. JafaripourI, TavassoliAK, HashemiM, AkhbariMR, BenamMR. Positive Exercise Stress Testing Bus Drivers. Journal of Isfahan Medical School 2009;27(96):345-49.
16. KattiSM, JoshiAV, MallapurMD, WantamutteAS. Prevalence of Hypertension among Bus Drivers of Belgaum Division. Paper presented at: 36th National Conference IAPSM;2009;Aurangabad.
17. Taklikar CS. Occupational stress and its associated health disorders among bus drivers. Int J Commun Med Public Health. 2016;3(1):208–11. http://dx.doi.org/10.18203/2394-6040.ijcmph20151564
18. Kaewboonchoo O, Saleekul S, Powattanna A, Kawai T. Blood lead level and blood pressure of bus drivers in Bangkok, Thailand. Industrialhealth2007;45:590–594.