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ORIGINAL ARTICLE

A STUDY ON HYPERTENSION AND IT'S DETERMINANTS AMONG MALE BUS DRIVERS IN STATE ROAD TRANSPORT CORPORATION, VISAKHAPATNAM, ANDHRA PRADESH

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ABSTRACT: INTRODUCTION: 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. The nature of profession puts bus drivers at higher risk of developing hypertension. Due to lack of information regarding the prevalence of hypertension and its determinants among the RTC bus drivers in Visakhapatnam, the present study is carried out. **OBJECTIVE:** To measure occurrence of certain risk factors for hypertension among bus drivers and to study the proportion of bus drivers having hypertension **METHODOLOGY:** A cross sectional descriptive study was conducted among bus drivers working in APSRTC Visakhapatnam city during months of Dec. 2014 – Jan. 2015. One of the six bus depots was randomly selected, a prior permission from the depot manager was taken and convenient sample of 100 bus drivers considered for study. Data was collected using a pre tested semi structured questionnaire to the study subjects after obtaining informed consent. All the individuals who are willing to participate were included and those not willing to participate and who were<21years and >60years of age were excluded from the study. Data was analyzed by using Microsoft excel, statistical tests were applied where ever necessary and p value of <0.05 was considered as statistical significant. Study materials include mercury sphygmomanometer, stethoscope, measuring tape, weighing machine. **RESULTS:** The mean age of study population was 42.9years, majority (90%) of them belongs to class II and III according to modified B. G. Prasad's classification, prevalence of hypertension among study population was (36%), of whom 44.4% of participants were not aware of their hypertensive status. Family history of hypertension observed in 46% of the study population. About 59% of the study population were overweight & obese, of them 45.7% had hypertension. **CONCLUSIONS:** Prevalence of hypertension among APSRTC bus drivers of Visakhapatnam was found to be high i.e. 36%. In order to reduce the prevalence in future health education regarding diet, physical activity and life style modifications are required.

KEYWORDS: Bus drivers, Hypertension, Visakhapatnam.

INTRODUCTION: The world prevalence of hypertension 20% (Albert & Vecihi 2011).[(1)] 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.[(2)] Hence it has been given the term "silent killer".[(2)] The nature of profession puts bus drivers at higher risk of developing hypertension. Stressors for developing hypertension in

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bus drivers include rotatory shift pattern, inflexible running times and traffic. Adhering to the schedule, providing service to passengers and driving safely are among the most important psychosocial demands of the bus drivers job, The health impact of hypertension does not only affect the drivers alone but the community at large, as the community rely on drivers for safe movement of person and goods from place to place. Once they develop hypertension they are prone to develop coronary heart disease and stroke putting them and their road users at risk. Hence there is need to assess the magnitude of problem among bus drivers. Due to limited information regarding the prevalence of hypertension and its determinants among the RTC bus drivers in Visakhapatnam, the present study is being carried out.

OBJECTIVES: To measure occurrence of certain risk factors for hypertension among bus drivers and to study the proportion of bus drivers having hypertension.

MATERIAL AND METHODS: This cross sectional descriptive study was conducted among bus drivers working in APSRTC Visakhapatnam city during months of Dec2014-Jan2015.(Of the sixbus depots in the city, one was randomly selected, and a convenient sample of 100 drivers was considered for study) A prior permission from the depot manager and informed consent was obtained from participants and data about the study variables was collected using a pre-tested interviewed schedule, study tools also included mercury sphygmomanometer, measuring tape, and weighing machine. WHO guidelines for recording blood pressure and classification of hypertension were followed. All the study participants were interviewed personally by using pretested interview schedule. Study variables included socio demographic characters such age, educational status, socio – economic status, type of family, marital status, occupational history, behavioral risk factors such as tobacco use, alcohol use, and frequency of food taken outside the home and Anthropometric measurements such as (ht, wt, bmi, and blood pressure).

Anthropometric Measurements: Electronic weighing machine was used to measure weight in upright position. Weight was measured with bare foot and light wearing clothes. 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 WHO for south Asians.[3]

The behavioural risk factors tobacco interview schedule included data on self-reported duration, frequency and quantity of tobacco consumption individuals were classified as ex. Smoker, current smoker and non-smoker. Self-reported alcohol intake data was collected and subjects were classified as present consumer, past consumer, and non-consumer.

Definitions:

Current Smoker: A person who had smoked at least 100 cigarettes over their life time, and continued to smoke ever day or some days. Ex-smoker was defined as a person who had smoked more than 100 cigarettes over their life time and then who stopped smoking.[4]

Alcohol Use: Present consumer was defined as person who continued to consume alcohol ever day or some days. Past consumer was defined as person who consuming alcohol in the past and stopped taking alcohol.[4]

Perceived Stress: This is a measure of the degree in a person assesses their life as stressful.

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Hypertension: Hypertension was defined as systolic blood pressure (SBP) of >140 mm Hg or diastolic blood pressure (DBP) >90 mm Hg as per WHO guide lines. Pre-hypertension was defined as SBP 120-129 mm Hg or DBP 80-89 mmHg.[5]

Blood pressure was recorded using mercury sphygmomanometer by auscultating method. The participants was first asked to sit quietly and comfortably on a chair with back supported for about five minutes in a quiet room. Three readings of systolic blood pressure and diastolic blood pressure were taken and record at an interval of at least 10 minutes and lowest value is taken into consideration.

Data was analyzed by using Microsoft office excel work book 2007. Chi-square test was used to test the association between hypertension and various socio-demographic and behavioral risk factors etc. A p value of <0.05 was taken for statistical significance.

RESULTS: The mean age of study population was 42.9years. Thirty six (36) out of the 100 subjects had hypertension.40% subjects were between the age group of (31-40). Only 8% participants were graduates. Majority (90%) of participants belongs to class II and III socio-economic class according to modified (2014) B. G. Prasad's classification. Around 65% of subjects were having 4 to 5 family members. About 61% participants were belongs to nuclear family. Family history of hypertension had 46%. BMI >25 in 63%, Smoking 23%, alcohol use 35% and Stress 24% was observed among the participants. At least one meal is taken outside the home by 51% of the participants. Food with high salt content such as pickles and dried salt fish were consumed at least in one meal by 20% of the subjects.

This study has also showed that there was statistically significant association between hypertension and risk factors like smoking, alcohol intake, family history of hypertension, BMI, and long duration of job.

Particulars	Total participants (n= 100)
Age in years	
21 to 30yrs	02(02%)
31 to 40yrs	40(40%)
41 to 50yrs	35(35%)
51 to 60yrs	23(23%)
Education	
Primary up to 5th class	22(22%)
Mid school up to 9th class	24(24%)
High school	40(40%)
Inter 10+2	05(05%)
Graduation	08(08%)
Post-graduation	01(01%)
Religion	
Hindu	98(98%)
Muslim	02(02%)
Christian	Nil

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Socio-economic class	
Class 1	06(06%)
Class 2	44(44%)
Class 3	46(46%)
Class 4	03(03%)
Class 5	01(01%)
Type of family	
Nuclear	61(61%)
Extended	34(34%)
Joint	05(05%)

Table 1: Socio-demographic profile of study participants

DISCUSSION: In the present study the prevalence of hypertension among drivers was found to be 36%. A study conducted by Chowdary S. S et al[3] showed that the prevalence of hypertension among the auto drivers was 34.14 which is comparable to the result of our study. Another study conducted by Tushar Acharya et al[6] showed hypertension prevalence in the urban slum population is 35% which is comparable to our study. Another study conducted by Arun V. Joshi et al[2] showed that prevalence of hypertension in bus drivers 23.8% which is lower compared to our study.

Our study showed that the prevalence of hypertension increases in age. In those over 50 years of age more than half had hypertension these findings compare well with results observed by Arun V Joshi et al.[2] There is significant association between hypertension and duration of employment as bus drivers (p value = <0.01) and also significant association between hypertension and being overweight (BMI >25 kg/m^2) similar observations were found in the study of ArjunLaxman et al. [7]

There is significant association between hypertension and smoking (p value = <0.05) observed in our study but in another study conducted by ArjunLaxman et al[7] observed that there is no significant association between HTN and smoking.

Risk factors	Normotensives	Hypertensive	Chi-square	P value
Smokers	12	10	5.2	< 0.05
Non-smokers	52	26		
Alcoholics	16	19	7.8	< 0.01
Non-alcoholics	48	17		
BMI < 25	29	08	7.3	< 0.05
25 to 25.99	28	21		
>30	07	07		
Duration of job			12.8	< 0.01
< 10 years	41	10		
11 o 20 yrs	09	09		
➢ 20yrs	14	17		

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Family h% HTN YES NO	 23 41	 23 13	7.8	<0.01
Daily consumption of food outside the home once/day Yes No	 43 21	 22 14	0.372	> 0.10
Perceived Stress Yes No	 50 14	 26 10	2.27	>0.10
Duration of sleep < 6 hrs >6 hrs	 45 19	 27 09	0.25	>0.50
Family size < 3 4 to 5 > 5	 09 41 14	 05 22 09	0.13	>0.50

Table 2: Association between hypertension and risk factors among study population (n=100)

Note: For analysis following rows have been combined.

1. Hypertension and pre hypertension taken as normotensive.
2. Smoker and past smokers were taken as smoker.
3. Alcoholics and ex-alcoholics taken as alcoholics.

In our study it is observed that there no significant association between hypertension and risk factors like consumption of food outside the home at least once/ day, stress, duration of sleep, and family size. But in another study conducted by Arun V Joshi et al[(2)] observed that there is significant association between hypertension and stress.

CONCLUSIONS: Occurrence of hypertension and its Risk factors are found to be high among APSRTC bus drivers of Visakhapatnam. A health education program regarding diet, physical activity like yoga, walking and cycling, life style modification along with periodic screening and pharmacological interventions is advisable to address the problem.

LIMITATIONS OF THE STUDY: The present study focuses mainly on socio-demographic risk factors associated with hypertension and other risk factors such as biochemical tests could not be done due to constraint of resources.

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