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Original Research Article

Cardiovascular disease risk factors among auto rickshaw drivers of Mangaluru

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ABSTRACT

Background: Cardiovascular diseases are considered as one of the leading causes of death in developed countries as well as in developing country. Auto rikshaw drivers are at more risk of developing cardiovascular disease because of harmful lifestyle like irregular eating habits, addictions, insufficient sleep, stressful occupational conditions and sedentary lifestyle.
Methods: Cross sectional descriptive study was conducted among auto rickshaw drivers working in Mangaluru. Data was collected regarding risk factors and general physical examination, anthropometric examination, systemic examination was done. Laboratory investigation was done for diabetes and dyslipidemia.
Results: The mean age of study participants was 42.75±10.26. The prevalence of physical inactivity, hypertension and diabetes were 70%, 29.6% and 14.2% respectively.
Conclusions: Physical inactivity, obesity, tobacco consumption and dyslipidemia were the major risk factors for cardiovascular disease.

Keywords: Auto rikshaw drivers, CVD risk factors, Diabetes, Hypertension

INTRODUCTION

Cardiovascular diseases are considered as one of the leading causes of death in developed countries as well as in developing country.[1] It is predicted that CVD will become the major cause for morbidity and mortality by 2020.[2] In India auto-rickshaws are one of the common and important mode of public transport. Auto rickshaws are relatively cheaper and easily available form of public transport in most of the cities in India.[3] Auto rikshaw drivers are at more risk of developing respiratory, cardiovascular, gastro-intestinal and musculoskeletal disorders because of exposure to harmful environment like pollutant gases, continuous noise and whole-body vibration as well harmful lifestyle like irregular eating habits, addictions, insufficient sleep, bad posture while driving and stressful occupational conditions.[4,5] The work factors like stress, addictions, irregular working schedule and sedentary life style can be the important risk factors for developing CVD among auto rickshaw drivers. Most of studies had been conducted on the CVD risk factors among truck, bus and taxi drivers, but very few studies have been done among auto rickshaw drivers of India.[6,7] Therefore, this study was done to estimate the CVD risk factors among auto-rickshaw drivers working in Mangaluru city.

METHODS

Cross sectional descriptive study was conducted among auto rickshaw drivers working in Mangaluru from July 2017 – September 2017 for the period of three month.

The study subjects were full time auto-rickshaw drivers working for at least 6 months. Ethical clearance was taken from institution ethics committee and informed written consent was taken from all study subjects. After discussion with Auto-rickshaw union members the site, date and necessary permission was obtained for conducting this study. Universal sampling was done for all auto-rickshaw drivers present at KSRTC bus stand and they were informed about the purpose of study. Data was collected in pretested semi-structured questionnaire, which includes socio-demographic profile, dietary habits, addictions and physical activity by interview method. General physical examination and systemic examination was done on fixed day and they were asked to come on specific date to the hospital for laboratory investigation. Anthropometric measurement was taken and Blood pressure (BP) was measured using standard mercury sphygmomanometer in the sitting position as per JNC 7 guidelines.[8] The cut off value for considering obesity (BMI $\geq$25 kg/m^2), diabetes and dyslipidemia was taken as per standard guidelines.[9-11] The data was entered in Microsoft excel sheet and was analysed using appropriate statistical software (SPSS 16 trial version). Chi-square test was used to test the association between the variables and significance level was fixed at $p<0.05$.

RESULTS

A total of 240 auto rikshaw drivers were included in this study and all were male. The mean age was 42.75±10.26 years and maximum participants (38.3%) were in age group of 31-40 years. Among all participants, 207 (86.2%) were married and majority of participants were educated till middle school (52.1%) followed by high school (25%) and Primary school (11.7%). Majority of participants belonged to class IV (44.2%) followed by class III (31.6%) of modified B. G. Prasad classification of socio-economic status. Among 240 participants, 84 (35%) were consuming alcohol and 118 (48.2%) were tobacco (smoke/smokeless) consumers. Almost half of the participants (50%) had 6-10 years of service followed by 26.3% of more than 10 year of service. Maximum of participants were working for more than 10 hours per day (Table 1).

Table 1: Socio-demographic characteristics of study participants (n=240).

S. no.	Socio-demographic Characteristics	Frequency (%)
Age (in years)	< 20	17 (7.1)
	21-30	66 (27.5)
	31-40	92 (38.3)
	41-50	41 (17.1)
	>50	24 (10)
Marital status	Unmarried	17 (7.1)
	Married	207 (86.2)
	Separated/Divorced	16 (6.7)
Religion	Hindu	77 (32.1)
	Muslim	142 (59.2)
	Christian	21 (8.7)
Education	Illiterate	12 (5)
	Primary	28 (11.7)
	Middle	125 (52.1)
	High school	60 (25)
	PUC & Above	15 (6.2)
SES (Modified BG Prasad Classification 2017)[12]	Class 2	22 (9.2)
	Class 3	76 (31.6)
	Class 4	106 (44.2)
	Class 5	36 (15)
Habits	Alcohol consumption	84 (35)
	Tobacco consumption	118 (49.2)
Years of service (in years)	$\leq$ 5	57 (23.7)
	6 – 10	121 (50)
	> 10	62 (26.3)
Duration of working hour/day	$\leq$ 10	108 (45)
	> 10	132 (55)

The most common sign and symptoms among participants were dental carries & staining (28.3%), eye congestion (27.1%) and clubbing (22%) (Table 2).

Table 2: General physical and systemic findings of study participants (n=240).

Findings	Number (%)
Eye congestion	65 (27.1)
Clubbing	53 (22)
Cyanosis	23 (9.6)
Dental caries & staining	68 (28.3)
Skin and nail changes	19 (8)
RS abnormalities*	28 (11.6)
CVS abnormalities**	14 (5.8)
Locomotor (OA changes, spine tenderness)	43 (18)

*Crepitations / Ronchi / other added sound; **Systolic murmur/ Prolong S1

Table 3: Prevalence of CVD risk factors among study participants.

Risk factors	Number (%)
Diet (non-vegetarian/trans-fatty)	49 (20.4)
Physical inactivity	168 (70)
Alcohol consumption	94 (39.1)
Tobacco consumption	107 (44.5)
BMI >25 kg/m^2	119 (49.5)
Hypertension	71 (29.6)
Diabetes	34 (14.2)
High cholesterol	122 (50.2)
High triglyceride	128 (53.3)
High LDL	18 (7.5)
Low HDL	126 (52.4)

The highest prevalence of CVD risk factor was physical inactivity (70%) followed by high triglyceride (53.3%) and low HDL (52.4%). As per Asian's guideline of BMI, the prevalence of obesity was 49.5%. The prevalence of diabetes and hypertension was 30.8% and 29.6% respectively (Table 3).

DISCUSSION

Cardiovascular disease became one of the leading causes of morbidity and mortality. The screening of CVD risk factor will play an important role for prevention and early detection of cardiovascular disease. In this study, maximum participants were in age group of 31-40 years and similar finding was reported by Melwani.[13] The prevalence of alcohol consumption was 39.1% which was similar to a finding of 43.6% by Girish.[14] Even the tobacco consumption prevalence was 44.5%, which was comparable with Chaudhary study.[15] Our study showed the high prevalence of physical inactivity among participants compared to Girish study who showed the prevalence of physical inactivity of 42.2%.[14] Girish et al showed the prevalence of obesity (BMI >25 kg/m^2) as 40.6%, which was comparable to our study findings.[14] The prevalence of hypertension in this study was 29.6% and it was comparable to a finding of 23% by Jain.[16]

This study provides the magnitude of CVD risk among auto rickshaw drivers. The reason of high prevalence of physical inactivity and obesity may be because of their work-related sedentary life style.

CONCLUSION

The prevalence of physical inactivity, obesity, tobacco consumption and dyslipidemia were quite high among auto rikshaw driver. Therefore, there is a need of appropriate preventive and promotive intervention. Early detection, regular medical check-up and prompt intervention are the important step for managing CVD risk factors.

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