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Risk factors of cardiovascular diseases among auto-rickshaw drivers of Kannur, North Kerala: a cross-sectional study

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ABSTRACT

Background: Cardiovascular diseases (CVD's) are one of the leading causes of death in all developed countries. CVD is predicted to become the major cause of morbidity and mortality by 2020. The main objectives were to know the magnitude of risk factors of cardio vascular diseases (CVDs) among auto-rickshaw drivers.

Methods: A cross-sectional descriptive study was conducted involving 330 auto-rickshaw drivers at Kannur city of Kerala using a pre-designed and pre-tested questionnaire & anthropometric measurements.

Results: All the study population were males. The cardiovascular risk factors were current smokers 35.45%, current alcohol consumption 43.6%, overweight & obesity 40.6% central obesity 32.1% & hypertension 21.8%.

Conclusions: High proportion of risk factors was observed in auto-rickshaw drivers which put them for increased risk of CVD's. Early precautionary measures, regular medical check-up & prompt interventions are necessary for managing risk factors.

Keywords: Auto-rickshaw drivers, Cardiovascular diseases, Risk factors

INTRODUCTION

Cardiovascular diseases are one of the leading causes of death in all developed countries, accounting for 25 to 30 percent of total deaths. In today's world, most deaths are attributable to Non-Communicable diseases and over just half of these are as a result of CVD's. CVD is predicted to become the major cause of morbidity and mortality by 2020. The key intervention in CVD's is to identify risk factors early and initiate therapy to control them. The incidence is greater in urban areas than in rural areas reflecting the several risk factors. Currently Indians experience CVD's deaths at least a decade earlier than their counterparts in countries with established market economies.

These can all be easily measured in primary care facilities. Identifying those at highest risk of CVD's and ensuring they receive appropriate treatment can prevent premature deaths.⁵ Auto rickshaw drivers are at more risk for CVD's because of their stressful life style like irregular eating habits, addictions, irregular working schedule and work related sedentariness. With this back ground descriptive, observational study with cross sectional design was conducted to assess the magnitude of CVDs risk factors among auto rickshaw drivers of Kannur City.

Objectives: To know the magnitude of risk factors of Cardio vascular diseases (CVDs) among auto-rickshaw drivers of Kannur City.

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METHODS

A Cross-sectional descriptive study was conducted at Kannur city of North Kerala. The study was conducted over a period of 12th February 2015 to 25th June 2015. Ethical clearance for the study was taken from the ethical committee of Kannur Medical College. The study subjects are the full time auto-rickshaw drivers working for atleast last 6 months those subjects who didn't consent for the study & who were part-time drivers were excluded from the study.

Sampling

Sample size was calculated on the basis of reported 35.14% prevalence of tobacco smoking among auto rickshaw drivers in a study done by Chaudhary S et al and fixing 15% as the relative precision using formula 4PQ/D ^{2.6} Sample size was calculated to be 329 and it was decided to study 330 subjects.

Methodology

The monthly meeting conducted by auto-rickshaw union members was used as an opportunity for approaching the auto-rickshaw drivers. Prior information was collected about the meeting dates and location & the necessary permission was obtained from the union for conducting the study. Auto drivers were informed about the purpose of the study. They were motivated to participate in study by taking the assistance of the union leaders. Participants who fulfilled the inclusion & exclusion criteria were enrolled for the study.

Simple random sample method was used to collect the information from subjects after obtaining the informed consent. The study was continued till the desired sample size was reached. Pre-structured and pretested questionnaire was used for collecting the data.

Data on demography, risk factors, anthropometric measurements and blood pressure was collected from all the study subjects. Standard instruments and procedures were used for measuring parameters. Data was presented in suitable tables and analysed applying percentage proportions.

RESULTS

Out of 330 study participants, all were males and majority (61%) were between 40 to 59 years of age. The mean age of our respondents was 44.5 years (Table 1). All our study participants were literates. This reflects the high level of literacy status at Kannur (Table 2). The prevalence of smoking tobacco among participants is 35.45% with more among age group of 30-39 years (Table 3). 43.6% of auto drivers were consuming alcohol currently and majority was between age group 30-39 years (Table 4). 42.12% of participants were having

sedentary lifestyle sedentary (includes work related and leisure time related activity) (Table 5).

The overall prevalence of over-weight (BMI \geq 23 – 24.9 Kg/m²) & obesity (BMI \geq 25 Kg/m²) in our study population was 40.6%. Truncal obesity in our study was 32.1% (Table 6). Overall prevalence of hypertension in our study population was 21.8% and 29.1% of the participants were in the pre-hypertensive stage (Table 7).

Table 1: Distribution of participants by age.

Age group (years)	Number	Percentage
18-29	30	9
30-39	71	21.5
40-49	108	32.7
50-59	94	28.5
<u>≥</u> 60	27	8.3
Total	330	100.0

Table 2: Distribution of participants by educational status.

Educational status	Number	Percentage
Illiterate	0	0
Upto Primary school	52	15.8
Upto High school	185	56.1
Graduate	76	23
Post -Graduate	17	5.1
Total	330	100

Table 3: Distribution by current tobacco smoking and age of participants.

	Current to	bacco smoking	
Age group	Yes	No	Total
(years)	No. (%)	No. (%)	No. (%)
18-29	8 (26.6)	22 (73.4)	30 (100)
30-39	27 (38)	44 (62)	71 (100)
40-49	38 (35.1)	70 (64.9)	108 (100)
50-59	35 (37.2)	59 (62.8)	94 (100)
<u>≥</u> 60	9 (33.4)	18 (66.6)	27 (100)
Total	117 (35.45)	213 (64.55)	330 (100)

Table 4: Distribution by current alcohol use and age of participants.

Current alcohol consumption			
Age group	Yes	No	Total
(years)	No. (%)	No. (%)	No. (%)
18-29	9 (30)	21 (70)	30 (100)
30-39	34 (47.9)	37 (52.1)	71 (100)
40-49	50 (46.3)	58 (53.7)	108 (100)
50-59	41 (43.6)	53 (56.4)	94 (100)
<u>≥</u> 60	10 (37)	17 (63)	27 (100)
Total	144 (43.6)	186 (56.4)	330 (100)

Table 5: Sedentary activities among participants.

Sedentary activity				
Age group	Yes	No	Total	
(years)	No. (%)	N0. (%)	No. (%)	
18-29	4 (13.3)	25 (86.7)	30 (100)	
30-39	23 (32.3)	43 (67.7)	71 (100)	
40-49	51 (47.2)	46 (52.8)	108 (100)	
50-59	48 (51.1)	35 (48.9)	94 (100)	
<u>≥</u> 60	13 (48.1)	11 (51.9)	27 (100)	
Total	139 (42.12)	191 (57.88)	330 (100)	

Table 6: Distribution of obesity among participants.

Age group (years)	Truncal obesity No. (%)	Overweight & Obesity No. (%)
18-29	7 (23.3)	8 (26.6)
30-39	20 (28.1)	23 (32.3)
40-49	36 (33.3)	46 (42.6)
50-59	31 (32.9)	45 (47.8)
<u>≥</u> 60	12 (44.4)	12 (44.4)
Total	106 (32.1)	134 (40.6)

Table 7: Magnitude of hypertension by age.

Age group (years)	Normal No. (%)	Pre-hypertension No. (%)	Hypertension No. (%)	Total No. (%)
18-29	25 (83.3)	5 (16.7)	0 (0)	30 (100)
30-39	40 (56.3)	20 (28.2)	11 (15.5)	71 (100)
40-49	58 (53.7)	30 (27.8)	20 (18.5)	108 (100)
50-59	35 (37.2)	34 (36.2)	25 (26.6)	94 (100)
<u>></u> 60	4 (14.8)	7 (25.9)	16 (59.3)	27 (100)
Total	162 (49.1)	96 (29.1)	72 (21.8)	330 (100)

DISCUSSION

Our study tries to bring-up the magnitude of risk factors associated with development of cardiovascular diseases among auto-rikshaw drivers at Kannur city. The understanding of these risk factors plays an important role in prevention of development of diseases and early action. Our study brings out the high prevalence of risk factors for CVDs in the auto-rikshaw drivers. Prevalence of smoking is 35.45% in our study is more compared to observations made by Koppad R et al and community based studies conducted in urban settings in other parts of India. 9,10

Prevalence of alcohol consumption in our study is 43.6% which is high and similar to the observations made by Shah B et al among urban men, a multi centric study. Our study shows that 42.12% of our study population are sedentary in nature (includes work related and leisure time related) which was high when compared to study conducted by Koppad et al. 9

Prevalence of overweight & obesity combined was 40.6% and 32.1% were having truncal obesity which is similar to the observations made by other studies conducted in the urban areas of India which could be due to the sedentary lifestyle. 12,13 21.8% of our study population were having hypertension as observed by studies done by Reddy KS et al, Prabhakaran D et al, Gupta R et al. 14-16 29.1% were in pre-hypertensive state which reflects the burden of the disease among the population which calls for urgent attention.

CONCLUSION

High proportion of risk factors was observed in autorickshaw drivers which put them for increased risk of CVD's. Early precautionary measures, regular medical check-up and prompt interventions are necessary for managing risk factors.

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Institutional Ethics Committee

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