ORIGINAL ARTICLE

STUDY OF CORONARY RISK FACTORS AMONG MIGRANT WORKERS IN MANGALORE CITY

Nanjesh Kumar S[1], Shahul Hameed[2], Prashanth M. Naik[3], Asha Jagtap[4]

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ABSTRACT: BACKGROUND: Cardiovascular disease causes 29 per cent of all deaths globally each year, making it the world's number one killer. Every year, 17.1 million lives are claimed by the global burden of cardiovascular disease. Lifestyle-related behavioral risk factors are mainly implicated for the increased burden of CHD. **OBJECTIVE:** Study of coronary risk factors among migrant labourers. **METHODOLOGY:** Migrant population in Mangalore will be the study population. **STUDY DURATION:** From November 2012 to April 2013. **STUDY DESIGN:** Cross sectional study. Subjects of this study were including migrant population from 6 different areas of Mangalore city. Informed consent was obtained from each migrant for the medical examination. General physical examination was done in a well- lit examination room at the site of camp. Pretest questionnaire was asked to collect data by interview method. **RESULTS:** The study comprised of 585 study subjects. 421 were male workers (71.96%) and 164 (28.04%) were female workers. 300(51.28%) subjects were Hindus. 521(89.05%) subjects were consuming mixed diet and 367 (62.73%) were consuming transfattyacid. 145 (24.78%) subjects were overweight and 489 (83.98%) subjects were consuming alcohol and smoking was seen in 301 (51.45%) subjects. 89 (15.21%) subjects had Hypertension. **CONCLUSION:** Modifiable cardiovascular risk factors are widely present among migrant workers. Therefore promotion of supportive environment and strategic delivery of periodic health education and health status monitoring is essential.

KEYWORDS: Migrant workers, Behavioral risk factors, Cardio-vascular diseases, Risk factors.

INTRODUCTION: The epidemic of cardiovascular disease in India is advancing rapidly. Overview of population surveys conducted over two decades in India reported 9-fold increase in the Prevalence of Coronary Heart Disease. It has been estimated that there will be doubling of deaths due to cardiovascular disease (CVD) in India by 2015.[1] Chronic diseases in India accounted for 53% of all deaths in 2005, out of which 29% were due to cardiovascular diseases (CVDs) alone.

In India in the past five decades, rates of coronary disease among urban populations have risen from 4% to 11%.and deaths from coronary heart disease rose from 1.17 million in 1990 to 1.59 million in 2000.[2] Normally, for all practical purposes it is seen that these risk factors occur together. A person who has high blood sugar levels may also have high blood pressure, dyslipidemia and central obesity.[3] It is important to note that all these risk factors are amenable to modification through lifestyle changes.

MAJOR RISK FACTORS FOR CVD's:

LIFESTYLE RISK FACTORS

1. Tobacco use
2. Physical inactivity
3. Fatty, fried fast food and added salt
4. High Cholesterol level

BIOLOGICAL RISK FACTORS

1. High blood pressure.
2. Obesity and Over-weight.
3. Diabetes.

Most of the Cardiovascular Diseases are preventable if meaningful action is taken against these risk factors.[4] In nutshell, today's risky behaviours are tomorrow's risk factors. Today's risk factors are tomorrow's disease. Thus, primary and secondary prevention of coronary vascular disease and their common risk factors provide the most sustainable and cost-effective approach to coronary vascular disease prevention and control. Need to reframe the information there should be a continuation.

MATERIAL AND METHODS:

SOURCE OF DATA:

STUDY POPULATION: Migrant population in Mangalore City Corporation limits in different places. 1. Bharati ship yard in Tannir bhavi, 2. Plama Construction site in Kulashekara, 3. Bridge construction workers at Kottara chowki, 4. Kavoor health center.

STUDY DURATION: From November 2012 to April 2013.

STUDY DESIGN: Cross sectional study.

SAMPLE SIZE: 585

INCLUSION CRITERIA: Migrant labourers of Mangalore city not residing for more than 3 years are included. Exclusion criteria: Resident laborers of Mangalore city residing for more than 3 years are not included

METHOD OF COLLECTION OF DATA: Informed written consent was obtained by explaining to the subjects about the method of study, outcome and possible intervention. An assurance to the subject about confidentiality of the subject's data was ensured. A pre-tested semi structured questionnaire was used for collection of data. Data was collected by interview cum, clinical examination.

RESULTS AND DISCUSSION:

Socio-demographic factors	Number (N= 585)	Percentage %
1. Marital status		
- Married	382	65.30
- Unmarried	203	34.70
- **Total**	**585**	**100**

2. Religion		
- Hindu	300	51.2
- Muslim	143	24.4
- Christian	124	21.2
- Others	18	3.07
- **Total**	**585**	**100**
3. Sex		
- Male	421	71.96
- Female	164	28.04
- **Total**	**585**	**100**

Table 1: Socio- demographic distribution of the study subjects.

In this table out of the total 585 migrant workers, 382(65.29%) migrant workers are married and 203(34.70%) migrant workers were unmarried.

Majority of the migrant workers followed Hindu religion- 300(34.9%) followed by Muslims– 143(24.4%).

In total 585 migrant workers, 421 were male workers (71.96%) and 164(28.04%) were female workers.

Age group	Number	Percentage
15- 20	39	6.7
21- 30	268	45.8
31- 40	197	33.7
41- 50	71	12.1
More than 50	10	1.7
Total	**585**	**100**

Table 2: Age group distribution of the study subjects

585 migrants were examined during the period of November 2012 to April 2013 in Mangalore City Corporation Limited. 268 (45.7%) migrant labourers belonged to the age group of 21-30 year and 197 (33.7%) migrant workers belonged to the age group of 31-40 years. The youngest migrant worker was 12 years of age and the oldest was 64 years in age.

Sl. no	Nature of Occupation	Number	Percentage
1	Building Construction	168	28.71
2	Ship building	152	25.98
3	Road construction/repair	97	16.58
4	Security Guard	68	11.62
5	Fruit vendors	30	5.12
6	Domestic helper	26	4.44

7	Hotel workers	24	4.10
8	Others	20	3.41
	Total	**585**	**100**

Table 3: Occupation of study subject (n=585)

Majority of workers were working as construction workers 168(28.71%) followed by the next category of ship building yard workers 152(25.98%). Least common were hotel workers - 20 in number (3.41%).

Coronary risk factors	Number	Percentage
Family history of CHD	71	12.13
Chronic Smoking	301	51.45
Alcohol consumption	489	83.58
Mixed diet (Red meat)	521	89.05
Transfattyacid consumption	367	62.73
Lack of Physical activity	38	6.49
Overweight(BMI 23 to 24.99)	145	24.78
Obesity(BMI 25 and above)	29	4.95
Truncal Obesity	76	12.99
Hypertension	89	15.21

Table 4: Distribution of Coronary risk factors in the Study Population. (n=585)

The table-5 shows that 521(89.05%) subjects were consuming red meat followed by 489(83.58%) subjects were consuming alcohol and 367(62.73%) subjects were consuming Transfattyacid containing food. 301(51.45%) subjects were smoking tobacco. 145(24.78%) subjects were overweight and obesity was seen in 29 (4.95%) subjects. 76(12.19%) subjects had Truncal obesity. Only 89(15.21%) subjects had Hypertension.

FAMILY HISTORY OF CORONARY VASCULAR DISEASES: Coronary atherosclerosis tends to aggregate within families. In various studies, after controlling for other risk factors, a family history of early onset of CHD has been shown to be a strong independent risk factor.[5] Over 35 case control and prospective studies have identified an association between CHD and a history of first degree relatives with early onset CHD. In the present study Family history of CHD was seen in 71(12.13%) subjects.

TOBACCO SMOKING: Cigarette smoking is one of the leading preventable causes of mortality. Smoking has been identified as an independent risk factor for CHD in countries where other risk factors are prevalent. Cigarette smoking increases the CHD risk two three folds. The risk for CHD is greater for a smoker in the 45-54 years, age group than in the 35-44 years age group. Passive smoking also increases the risk.[6] There is no benefit from filter cigarette in reduction of risk.[7] In the present study the 301 (51.45%) subjects were smoking tobacco.

ALCOHOL CONSUMPTION: There is unanimous agreement that the curve for the relationship between alcohol consumption and total mortality rates is U shaped. Alcohol increases the risk for CHD due to its action on blood pressure.

Joshi P. P. et al (1993) reported a significant association between alcohol intake and mean blood pressure. The prevalence of hypertension varied from 4-19% in higher age groups.[8]In this study consumption of alcohol was seen in 489 (83.58%) subjects.

HYPERTENSION: Raised blood pressure is an important, independent risk factor in the development of CHD in all ages. The relationship between blood pressure and risk of CHD is continous.50% of cardiovascular deaths occurs at a diastolic B.P- 95mmHg.

A recent pooled analysis by McMahon and colleagues, of 14 trials concluded that an overall reduction in the diastolic B.P of 5-6mmHg produced a 42% reduction in non-fatal strokes. There was also a trend for a reduction in nonfatal and fatal coronary events (14%) which was significant.[9] In the present study hypertension was seen in 89(15.21%) subjects.

OBESITY: Obesity has been suggested to be an independent risk factor for CHD. In the Framingham study, the 24-year incidence of CHD by relative weight increased with relative increase in body weight. Also obesity was closely related to other known cardiovascular risk factors, such as hypertension, lipid abnormalities and impaired glucose.[10]In the present study Obesity was seen in 29(4.95%) subjects.

FOOD HABITS: Food habits plays a vital role in the general well-being of an any individual consuming food which are rich in trans fatty acids like deep fried fast food, cakes, chips, pies, packaged cookies, candy, aerated drinks etc. is a risk factor for coronary vascular disease. Red meat increases the total cholesterol and LDL cholesterol. Elevated total cholesterol is considered a major cause of CHD.[11] Elevated LDL-c levels has been related to recurrent events and CHD deaths in patient with heart disease.[12] In this study 521(89.05%) subjects were non-vegetarians consuming red meat and 367(62.73%) subjects were consuming Transfattyacid containing food.

CONCLUSION: Modifiable cardiovascular risk factors are widely present among migrant workers. Therefore promotion of supportive environment and strategic delivery of periodic health education and health status monitoring is essential.

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AUTHORS:

1. Nanjesh Kumar S.
2. Shahul Hameed
3. Prashanth M. Naik
4. Asha Jagtap

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Community Medicine, Srinivas Institute of Medical Sciences and Research Centre.
2. Assistant Professor, Department of Community Medicine, Srinivas Institute of Medical Sciences and Research Centre.
3. Assistant Professor, Department of Community Medicine, Srinivas Institute of Medical Sciences and Research Centre.
4. Professor, Department of Community Medicine, Srinivas Institute of Medical Sciences and Research Centre.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Nanjesh Kumar S,
Assistant Professor,
Department of Community Medicine,
SIMS & RC, Mukku Surthkal,
Mangalore-574146.
E-mail: drnanjesh@yahoo.co.in

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