

RISK FACTORS FOR CORONARY ARTERY DISEASES (CAD) IN A RURAL POPULATION OF WARANGAL DISTRICT

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ABSTRACT

The aim of study was to analyse the cardiovascular risk factors by estimating metabolic syndrome at Warangal rural population in CAD patients. It is a disease in which there is a narrowing or blockage of the coronary arteries. The disease may cause chest pain, shortness of breath during exercise, and heart attacks. A total Sample Size of 700 (CAD Risk Factors) were studied. Among the total 700 population who participated in the study, 53.43% were male and 46.57% were female. Majority of people with risk factors, were in the age group of 50-60 years (n=700, 25.71%). 60.71% of them are having diabetes mellitus and 80.57% of them are having hypertension. In this study we found that the population got equally affected with Diabetes and Hypertension, hence the prevalence rate for these both factors found to be increased in total population of rural Warangal. We estimated metabolic syndrome with the help of NCEP ATP III guidelines. With the burgeoning coronary risk factors DM, HTN and Tobacco use in India, and with the UN GOAL of reducing premature mortality from Non-Communicable diseases by 25 % by 2025, the study assumes significance by focusing on a rural population in India. By identifying the lack of Access, Affordability and Availability to Medicare in general and cardiac care in particular, the study paves the way as a pilot study in RURAL TELANAGANA. Management of CAD risk factors as per evidence based guidelines is likely to improve the quality of life people for their wellbeing. All government, non-government and other voluntary health care organizations, ANM's, GNM's, DMHO's, PHC's must take the responsibility to educate patients regarding disease, knowledge, awareness, complications, blood glucose levels for better patient care and to improve health related quality of life.

KEYWORDS: CAD, BMI, DM, HTN.

INTRODUCTION: CORONARY ARTERY DISEASE (CAD)

CAD,^[1] is a disease in which there is a narrowing or blockage of the coronary arteries (blood vessels that carry blood and oxygen to the heart). Coronary artery disease is usually caused by atherosclerosis,^[2] (a build up of fatty material and plaque inside the coronary arteries). The disease may cause chest pain, shortness of breath during exercise, and heart attack.

Typically, coronary artery disease occurs when part of the smooth, elastic lining inside a coronary artery develops atherosclerosis, the artery's lining becomes hardened, stiffened, and accumulates deposits of calcium, fatty lipids, and abnormal inflammatory cells to form a plaque Calcium phosphate³ (hydroxyapatite) deposits in the muscular layer of the blood vessels appear to play a significant role in stiffening the arteries and inducing the early phase of coronary arteriosclerosis.

Non -Modifiable Risk Factors^[4,5]

1. Age – risk increases as one get older.
2. Gender – before the age of 60 men are at greater risk than women.
3. Family history – risk may increase if close blood relatives experienced early heart disease.

Modifiable Risk Factors^[6,7,8]

High Blood Pressure, Diabetes, Smoking, Overweight /obesity, Stress, High Cholesterol raised triglycerides with low HDL-cholesterol

Treatment of coronary artery disease is aimed at controlling symptoms and slowing or stopping the progression of disease. The method of treatment is based on many factors determined by your symptoms, a physical exam, and diagnostic testing. In many cases, if the blockage is less than 70 percent and not severely limiting blood flow, medications may be the first line of treatment. Sometimes more aggressive treatment is needed. Angioplasty,^[9] and stent placement

(percutaneous coronary revascularization), Coronary artery bypass surgery.^[10]

AIM AND OBJECTIVES

Aim

To analyse the Cardiovascular risk factors by estimating metabolic syndrome in Warangal rural population.

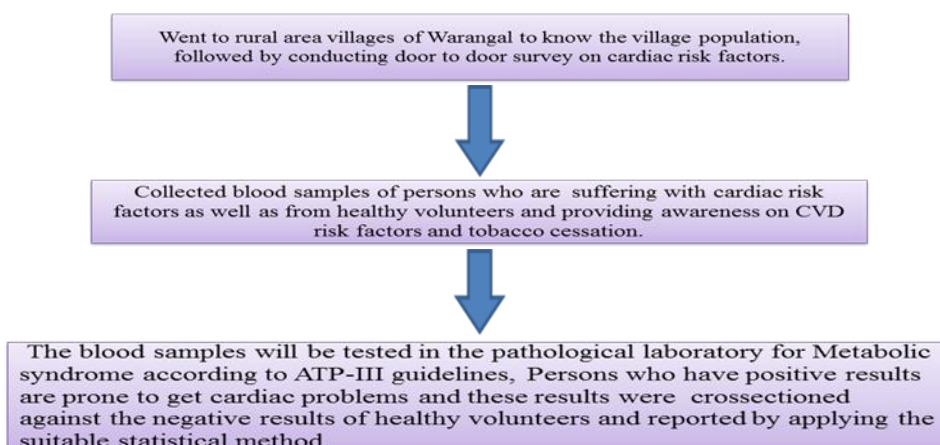
Objectives

To assess cardiovascular risk factors in study population.

MATERIALS AND METHODS

- **Study site:** Rural Areas of Warangal (Gangadevi pally, Dharmaram, Geesugonda, Elkurthy, Vanchanagiri, Atmakur, Mogilicherla, Ookal, Kommala, Manugonda, Neerkulla, Mariyapuram etc.) PHC'S.

Study Design



RESULTS AND DISCUSSION

Cardiovascular Risk Factors

Table 1: Effect of Gender and Age Distribution in CAD.

S. NO.	Variable	No. of Patients	Percentage (%)
1.	Gender		
	Male	374	53.43%
	Female	326	46.57%
2.	Age(Years)		
	20-30	15	2.14%
	30-40	84	12%
	40-50	131	18.71%
	50-60	180	25.71%
	60-70	176	25.14%
	70-80	80	11.42%
	80-90	26	3.71%
	90-100	8	1.14%

Among the total 700 population who participated in the study, 53.43% were male and 46.57% were female. 2.14% of the whole study sample fell within the age group of 22-30years, 12% within the age group of 30-40years, 18.71% within the age group of 40-50years,

- **Study population:** Subjects with any cardiovascular risk factors.
- **Study Type:** Observational Study.
- **Study period:** 6 months
- **Patient selection:**
- **Inclusion criteria:** People with age of ≥ 18 years in both Genders.
- **Exclusion criteria:** People with age of ≤ 18 years in both Genders.

Ethical Approval

A written ethical approval was obtained from the ethics committee of KAKATIYA MEDICAL COLLEGE Warangal.

Data Collection: All the required data from the population was collected through a specially designed data collection form.

Table 2: Effect of Non-modifiable and Modifiable risk factors in CAD.

S. NO.	Variable	Yes	%	No	%
Non-Modifiable Risk Factors					
1.	Family History	100	14.29%	600	85.71%
Modifiable Risk Factors					
2.	Diabetes Mellitus	425	60.71%	275	39.29%
3.	Hypertension	564	80.57%	136	19.43%
4.	Tobacco	61	8.71%	639	91.29%
5.	Smoking	100	14.29%	600	85.71%
6.	Diet	669(NV)	95.57%	31(v)	4.43%
7.	Poor Hygiene	217	31.00%	483	69.00%
8.	Physical Inactivity	408	58.29%	292	41.71%
9.	Stress	330	47.14%	370	52.86%

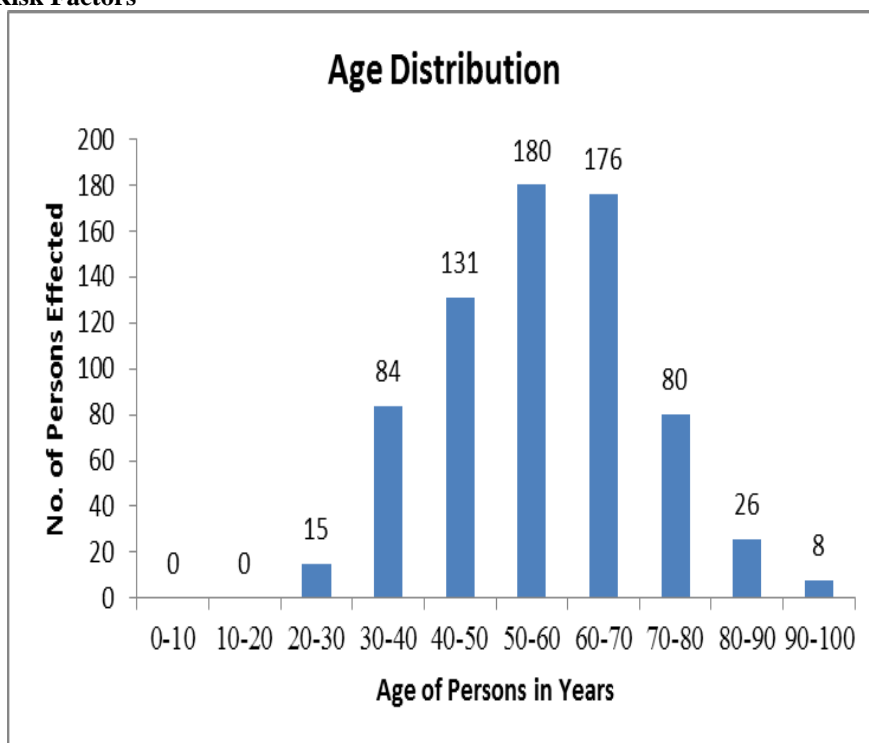
Table 3: Effects of Co-Morbidity Factors in CAD.

S. NO.	Variable	Yes	%	No	%
1.	Heart Failure	7	1.00%	693	99.00%
2.	Coronary Artery Disease(CAD)	11	1.57%	689	98.43%
3.	Myocardial Infarction (MI)	11	1.57%	689	98.43%

Among 700 study population 95.57% people are non vegans and 4.43% are vegans, 60.71% of them are having diabetes mellitus and 39.29% were not; 80.57% of them are having hypertension and 19.43% were not. Among the study population 8.71% of them had the habit of tobacco and 91.29% were not; similarly 14.29% had the habit of smoking and 85.71% were not; 14.29% of the study population had family history of CAD and 85.71% were not; 31.00% of the total study population

were not following hygienic conditions in daily lifestyles and 69.00% were following; 58.29% were physically inactive in doing their daily routine and 41.71% were physically active; 47.14% were feeling excessive stress in their life's and 52.86% were not. Among the population studied, we found 1.00% of them having Heart failure which is least compared to 99.00% remaining; 1.57% of total study population are suffering with CAD as well as with MI and remaining 98.43% were not.

Non-Modifiable Risk Factors

**Fig. 1: Effect of Age Distribution in CAD.**

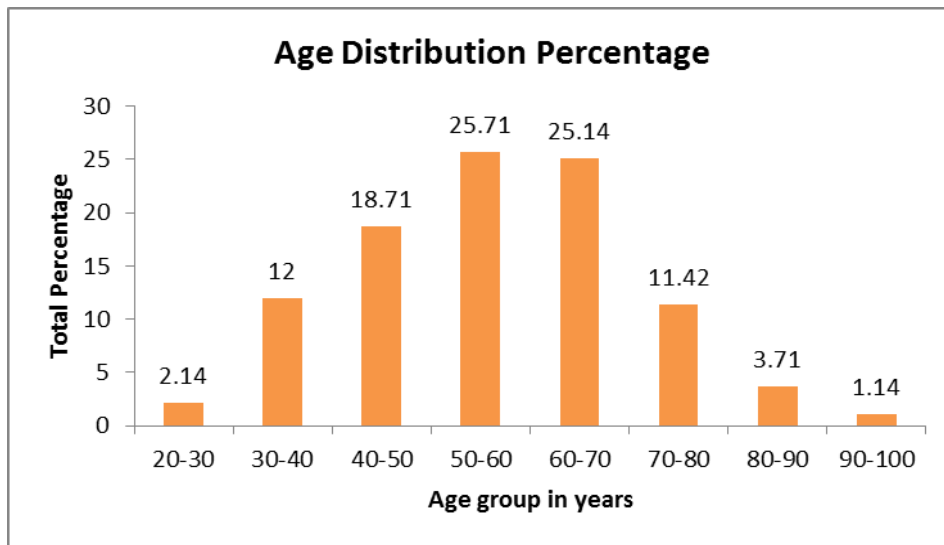


Fig. 2: Effect of Age Distribution Percentage in CADs.

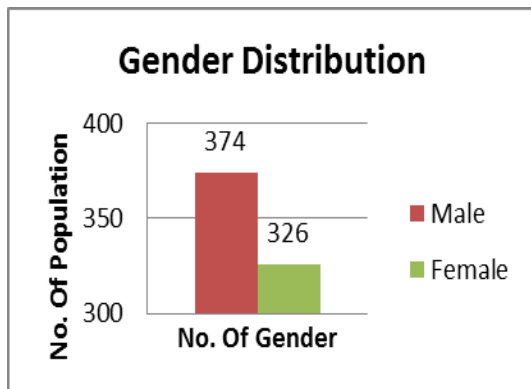


Fig.3 Gender Distribution in CAD

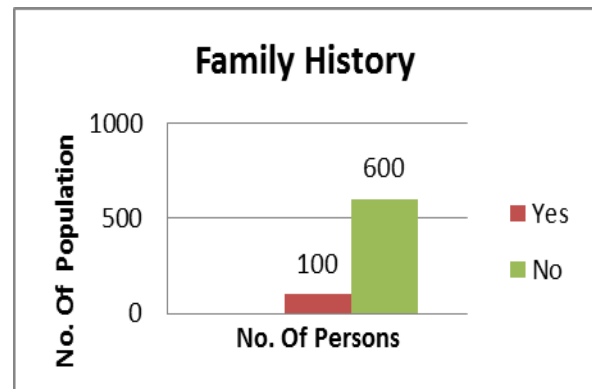


Fig.4 Effect of Family History in CAD

Modifiable Risk Factors

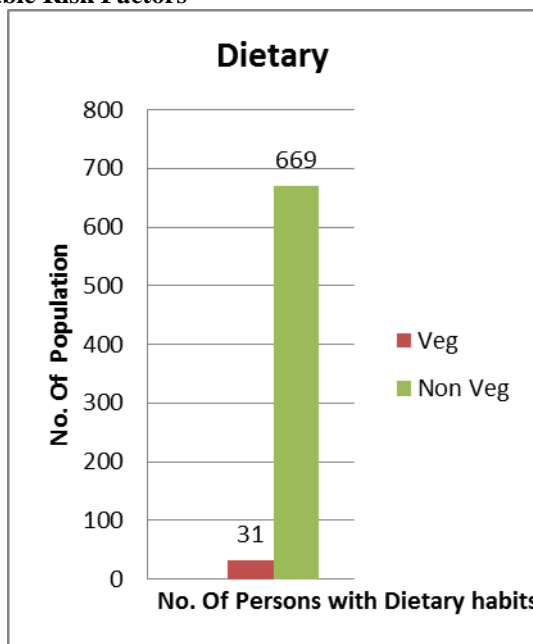


Fig. 5: Effect of Dietary in CAD.

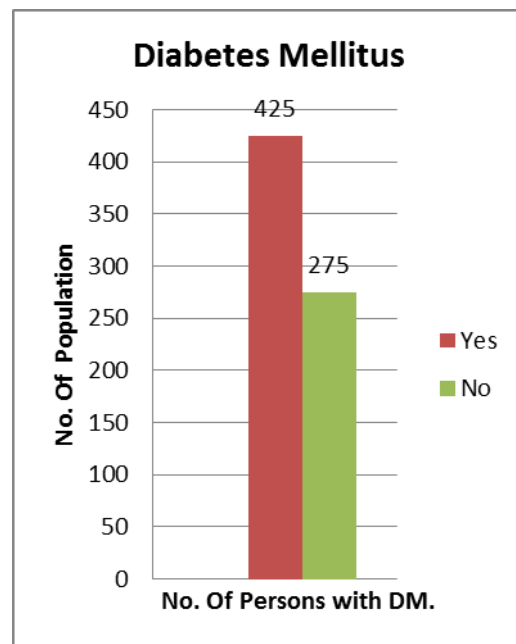


Fig. 6: Effect of Diabetes Mellitus in CAD.

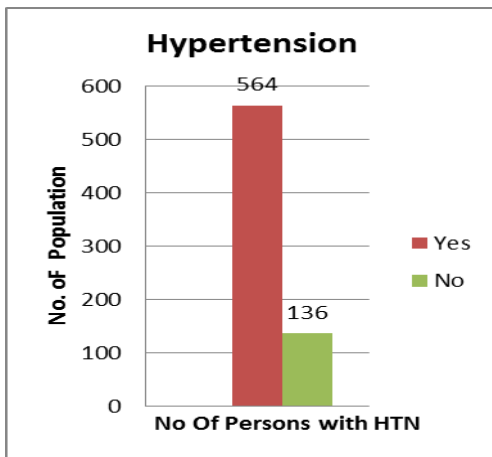


Fig.7: Effect of Hypertension in CAD.

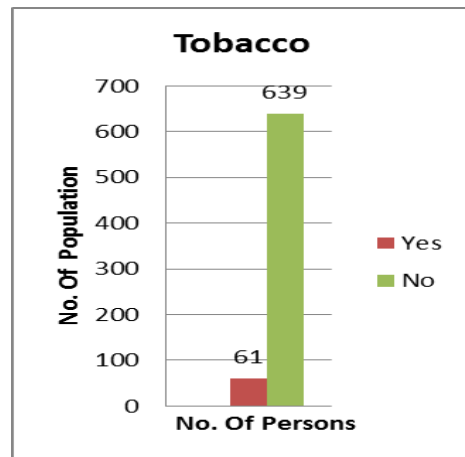


Fig 8: Effect of Tobacco (Chewable) in CAD.

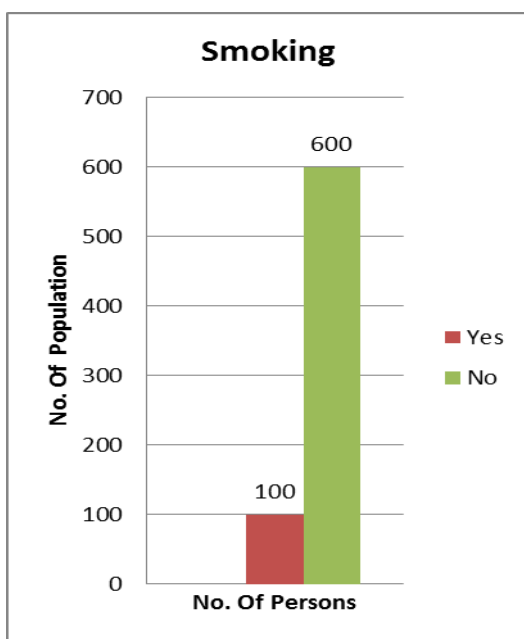


Fig. 9: Effect of Smoking in CAD.

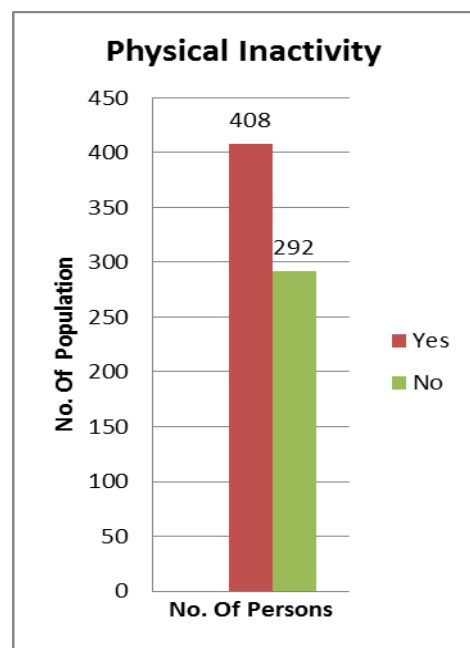


Fig. 10: Effect of Physical Inactivity in CAD.

Co-Morbidity Factors

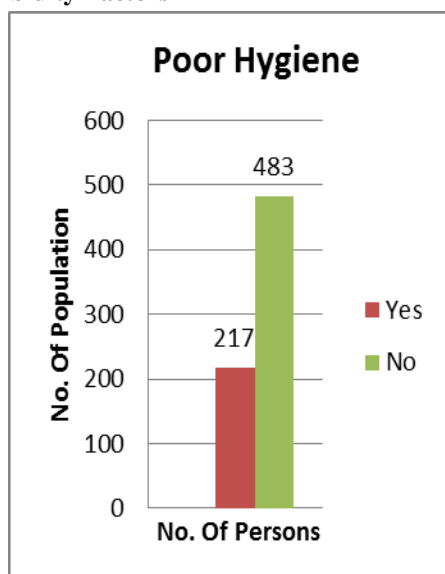


Fig. 11: Effect of Poor Hygiene in CAD.

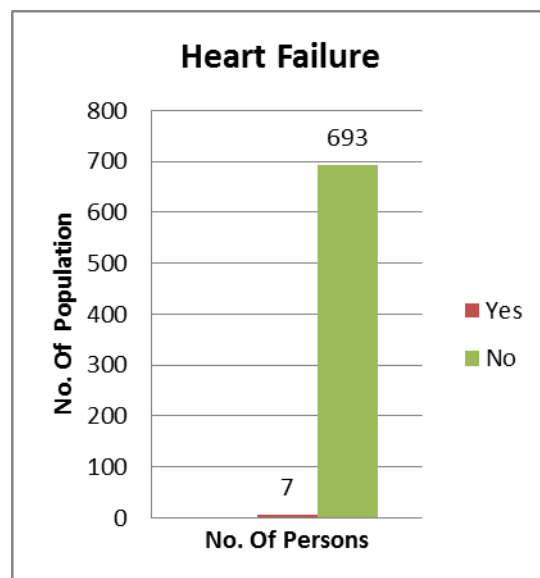


Fig. 12: Effect of Heart Failure in CAD.

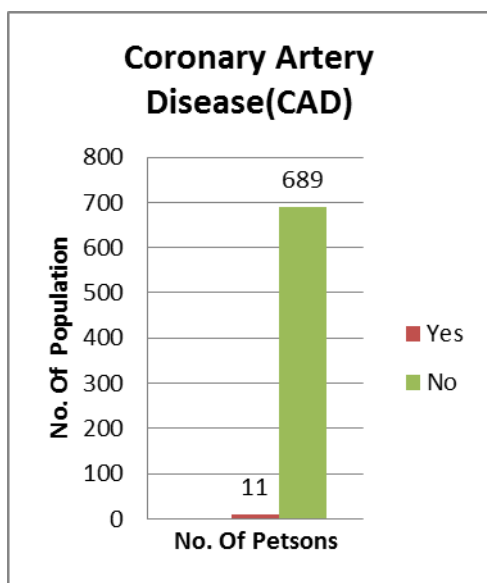


Fig. 13: Effect of Coronary Artery Disease.

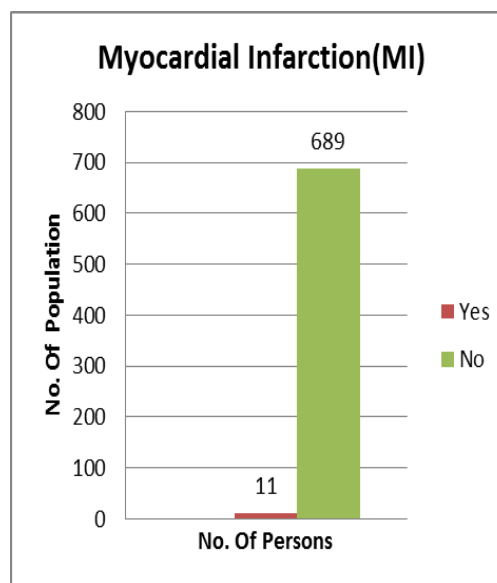


Fig. 14: Effect of Myocardial Infarction in CAD.

From the study population of sample size 700, Fig.1 describes that Age group between 50-60yrs are more likely to be affected with CVD risk factors, Fig.2 represents its percentage values, Fig.3 describes gender distribution in which males are more affected with CVD risk factors than females, Fig.4 represents Family history in which there are less number (100) of population having family history with CVD risk factors, Fig.5 shows Dietary habits in which 31 are vegans and remaining are non vegans, Fig.6 describes Diabetes mellitus in which 425 people are affected with it and remaining 275 were not. Fig.7 describes Hypertension in

which 564 people are affected with it and remaining 136 were not, Fig.8 shows Tobacco in which only 61 people are habituated with it. Fig.9 represents Smoking habit in which there are less number (100) of people are smokers, Fig.10 describes 402 persons are Physically inactive and remaining 292 are physically active, Fig.11 shows 217 persons are marinating Poor hygiene, Fig .12 describes Heart failure in which less number of persons i.e., 7 are affected with it. Fig.13 & 14 represents CAD and MI in which both figures shows that less number of persons i.e., 11 are affected with it.

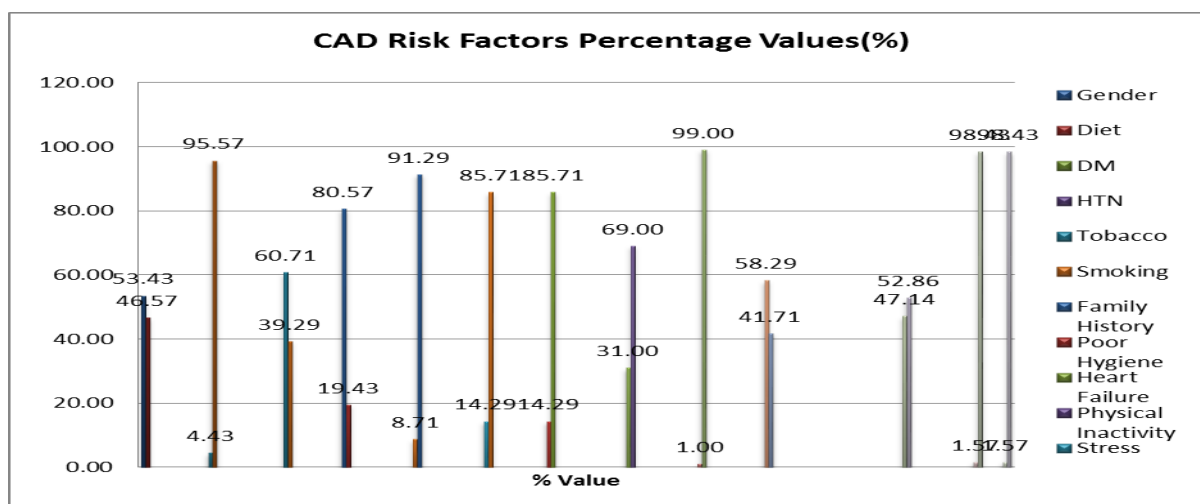


Fig. 15: Coronary Artery Disease Risk Factors (%).

CONCLUSION

The prevalence of risk factors in Rural Warangal and Creating awareness among the rural population is the focus of this study. This study is a part of the HEART program (Health Education and Awareness in Rural Telangana) conducted by Srinivasa heart Foundation and which is already recognised as a Case Study by the

World Heart Federation as an innovative cardiology community program, the only one from India.

With the burgeoning coronary risk factors DM, HTN and Tobacco use in India, and with the UN GOAL of reducing premature mortality from Non-Communicable diseases by 25 % by 2025, the study assumes significance by focusing on a rural population in India.

By identifying the lack of Access, Affordability and Availability to Medicare in general and cardiac care in particular, the study paves the way as a pilot study in RURAL

Telanagana

A need to conduct more Systematic studies on CORONARY RISK FACTORS in Rural India is the need of the hour to improve health outcomes.

Study was indicated that increased prevalence of DM, HTN, Physical inactivity, psychological factors are more in the age group of 40-60years of people. Globally increased incidence of prevalence of DM&HTN, Psychological factors was between the age group of 30-50years.

Knowledge and awareness about disease was much worse among diabetic population. Awareness regarding disease complications were also poor. There is a weak relationship between the duration and knowledge of the patient. Most of them were illiterate, with poor medication adherence, not aware about disease and complications and not maintaining their Blood sugar levels and experiencing many complications unknowingly and facing reduced quality of life (both physically and mentally). So there is a major need/ necessary to improve patient quality of life by maintaining proper communication between physician and patients.

All government, non-government and other voluntary health care organizations, ANM's, GNM's, DMHO's, PHC's must take the responsibility to educate patients regarding disease, knowledge, awareness, complications, blood glucose levels for better patient care and to improve health related quality of life.

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