ASSESSMENT OF THE CVD RISK AMONG YOUNGADULT (20-25YEARS)

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Abstract: Cardiovasculardiseasegenerallyreferstoconditionsthoseresultsinnarrowingorblockageof vessels which leads to heart attack. CVD is the most prevalent non communicable diseasefound presently in the world. Gender, Age, BMI, Waist hip ratio, Abnormal lipid profile,Diabetes, BP, behavioral habits like smoking and alcohol, sedentary life style are the riskfactors of CVD. Present scenario CVD is found to be escalating in young adults of 20-29yeras age group. The prevalence was doubled from 2000 to 2015. Life style modification isthe mainsourcefor prevention of CVD.

METHODOLOGY After finalizing the topic, literature survey was done for a better understanding about thesubject from similar studies which have been done so far. The research objectives were laiddown. Documents were submitted for IEC approval after which data collection was started.The study was done at Udupi and Manipal with a sample of 550. Blood samples werecollected for 100 among 550. This is an observational study. Anthropometric measurementsincluding height, Weight, BMI, Waistcircumference, Waist hip ratio were measured. Astructured interview schedule and screening questionnaire was carried out at the time of datacollection, Pairedt test, Pearson's correlation analysis, chi square, odds ratio were used fortheanalysis with thehelp of SPSS package.

OBJECTIVES To asses CVD risk among young adults aged 20-25 years and understand the determinants ofCVD in the study population and to identify anthropometric risk factors, socio demographicrisk factors, dietary and life style determinants, knowledge and awareness of people regardingriskfactors andmanagementofnoncommunicablediseaselikeCVD.

RESULTS Thetotal influence of independent risk factors like gender, age, BMI, waist circumference,waist hip ratio, Total cholesterol, triglycerides, LDL, HDL, VLDL, BP, blood sugar level,metabolic syndrome, physical activity level and dietary pattern was found to be 73.1%.Amongst these gender (-1.529*), total cholesterol (0.119*), HDL (-0.105*) have significantvalueswhereas physicalactivitylevelhas high levelof significance(-5.23**).

Key words : Cardiovascular diseases, lipid profile, Triglycerides, BMI, Physical activity.

Introduction: Cardiovascular risk generally refers to conditions that involve in narrowed or blocked vesselsthat can lead to heart attack, chest pain (angina) or stroke. Other heart attacks such as thosethat effect heart muscles, valves, or change in rhythm are also considered as forms of heartattack(mayoclinic). CVD diseases have been gaining importance in India recently because of increase inincidence of the disease. It is the first among the five most important causes of death in India(both urban and rural).In 2000 there were an estimated 29.8 million population of the totalpopulation of 1.03 billion in India with CVD(3% overall prevalence). In 2003 the prevalencewas estimated to be 3-4% in rural areas and 8-10% in urban areas according to populationbasedcross sectional surveys

Apart from overall prevalence, there are also regional variations in prevalence ofCVD.OverallprevalenceofCVDinsouthIndianpopulationis11%whiletheagestandardized prevalence was 9%.CVD rates ranged from 1.6-7.4% in rural populations and1%-13.2%inurbanpopulations.CrudeprevalenceofCVDisseeninurbanareasofNorthern states like Jammu and Kashmir, Delhi and Uttar Pradesh. Western states such asRajasthanhas prevalence rate of 6-10%. DietplaysacrucialroleinpreventingCVD.Thereis73%reductioninCVDratebyfollowing healthy diet. Diet low in saturated fat with plenty of fruits and vegetables should beconsumed to lower the risk of

CVD. Unsaturated fats like poly (PUFA) and mono (MUFA)plays crucial role in maintaining healthy heart. These are found in foods like Almonds,Walnuts,Flax seeds,Soyabeans, Fish etc(World Heart Federation).Dietary composition may affect insulin levels and in turn may increase the risk of CVD .highfiber diets protect against CVD, Obesity and may lower the insulin levels. Hyperinsulinemiamay increase the risk of CVD by various mechanisms. High fiber diet also protects fromhypertension,Hyperlipidemia(Ludwig, etal., 1999). The Mediterranean diet has been shown to reduce cardiovascular risk morbidity and mortalityin both primary and secondary prevention. Other dietary patterns that have been shown toconferadvantageinCVDincludeLowfatdietforobeseindividuals,DASHdietforhypertensive, low carbohydrate diet for people with metabolic disorders. To maintain healthyweight it is preferable to eat fresh foods without additional sugar and high calories. Dietshould contain variety of fruits, vegetables, whole grains, legumes etc (SigalEilat-Adar,2013).

ScopeAnd Significance OfStudy: In the present scenario CVD is the major non communicable disease. Risk factors of CVDinclude smoking, alcohol consumption, high lipid levels, Diabetes, elevated blood pressure,obesity. This study will be beneficial to understand various risk factors of CVD among youngadultsandtobringouttheeffectofdietaryandlifestylehabitstomanagetheriskofCVDandfor those whoarealreadyatrisk of CVDhelpsto managetherisk factors**. Objectives**OfTheStudy toassesstheriskofNon-communicablediseasesamongyoungadultsusingWHOStepsQuestionnaire(modified) and Dietaryassessment**.**

Methodology
The**methodology**adoptedforthepresentstudywhichincludesdescriptionofsetting,population,samplesize ,samplingtechnique,developmentanddescriptionoftools,procedureof data collectionand plan for analysis.

StudyDesign This is an Observational study. In this study the risk of Non-communicable diseases wereassessedand given educationmaterials

SampleDesign Selection of samples is done by simple random sampling in selected location. Subjects inpopulation are sampled by random process so that each person remaining in the populationhassome probabilityof being selected forsample.

SelectionOfSample   Thesampleschosenforthisstudyare20-25yearsofyoungadultsfromColleges,Officesand Banks inManipal,Udupi.

InclusionCriteria Youngadults(Age-20-25)ofManipal., BoththegenderofalleconomicStrata.

ExclusionCriteria People suffering from medical conditions such as Cancer, Chronic Kidney diseases,HIV cases. Agegroupbelow20andabove25years

ToolsUsed InterviewSchedule:This method of data collections like the collection of datathrough WHO steps questionnaire (modified), with little difference which lies in factthat schedules are being filled by the investigators (Performa that contains a set ofquestions). This method of data collection is used to obtain the basic informationalong with the past medical history, lifestyle habits, dietary habits (24 hour homerecall,food frequencyquestionnaire) anddailyphysicalactivity.

- Anthropometric Measurements: Anthropometric   measurements like height,weight,BMI,waistandhipcircumferences,waist-hipratioweretakenforthisstudy.
- Biochemicalparameters:Biochemicalparameterslikelipidprofile,bloodglucoseandblood pressure willbe done**.**

RESULTSANDDISCUSSION
The present study is conducted to assess the CVD risk among young adults. The informationcollected is in relation with general information, medical history, anthropometry, biochemicaldata, clinical symptoms, life style habits, and dietary habits so as to analyze the CVD

riskamongdefinedsamples.Resultsofalldatacollectedhavebeentabulatedanddiscussedinthis chapter. There's a strong association between CVD risk score and Gender, Age, BMI, Cholesterol, TGL, LDL, VLDL, BP, Metabolic syndrome, Smoking, Alcohol.

Association between CVD risk Score and Gender

Gender	Low risk	High risk	χ^2value	P value	Odd's ratio	95%CI
Male	41(41%)	5(5%)	6.178	0.013*	0.891	0.806,0.986
Female	54(54%)	0				

The above table shows that there are 41(41%) of males and 54(54%) of females with low risk of CVD and 5(5%) of males with high risk of CVD. The odds of gender being a risks factor is 0.891 times more.

AssociationbetweenCVDriskScoreand Age

Age	Low risk	High risk	χ^2value	P value	Odd's ratio	95%CI
20-22 yrs	65(65%)	1(1%)	4.963	0.026*	8.667	0.929,80.890
23-25 yrs	30(30%)	4(4%)				

The above table shows that there were 65(65%) of people among age group 20-22 years and 30(30%) of people among age group 23-25 years with low risk of CVD. And there were 1(1%) from age group 20-23 and 4(4%) from age group 23to 25 years with low risk the odds if age being risk factor is 8.667 times. Which is significant at 5% level of significance**.**

Association between CVD risk score and BMI

BMI	Low risk	High risk	χ^2value	P value	Odd's ratio	95%CI
Low risk	58(58%)	3(3%)	0.002	0.962	1.045	0.167,6.555
High risk	37(37%)	2(2%)				

The above table shows that there were 58(58%) people under low BMI and 37(37%) under high BMI with low risk whereas 3(35) under low BMI and 2(2%) under high BMI with high risk. The odds of BMI being risk factor are 1.045 times more.

Association between CVD Risk Score and Cholesterol

Cholesterol	Low risk	High risk	χ^2value	P value	Odd's ratio	95%CI
Low risk	**82(82%)**	0	23.977	<0.001**	1.385	1.040,1.844
High risk	**13(13%)**	5(5%)				

From the above table there were 82(82%) with normal cholesterol ranges under low risk and 13(13%) with high cholesterol ranges under low risk. And 5(5%) with high cholesterol ranges under high risk. The odds of cholesterol being risk factor is 1.385 times more which isstatisticallysignificantat1 % level of significance.

Association between CVD Risk Score and TGL

Cholesterol	Low risk	High risk	χ^2value	P value	Odd's ratio	95%CI
Low risk	**64(64%)**	0	**9.357**	**0.002****	**1.161**	**1.019,1.324**

High risk	**31(31%)**	**5(5%)**				

From the above table there were 64(64%) with normal TGL level under high risk and 31(31%) with normal TGL high risk, 5(5%) high TGL high risk. The odds of TGL being risk factor are 1.161 times more. Which is statistically significant at 1% level of significance.

Association between CVD Risk Score and LDL

LDL	Low risk	High risk	χ^2value	P value	Odd's ratio	95%CI
Low risk	**60(60%)**	**1(1%)**	**3.719**	**0.054**	**6.857**	**0.737,63.809**
High risk	**35(35%)**	**4(4%)**				

The above table shows that there were 60(60%) with normal LDL low risk and 1(15) with normal LDL high risk and 35(35%) with high LDL low risk, 4(4%) high LDL high risk. The odds of LDL being risk factor is 6.587 times more

Association between CVD Risk Score and VLDL

VLDL	Low risk	High risk	χ^2value	P value	Odd's ratio	95%CI
Low risk	**65(65%)**	**0**	**9.774**	**0.002****	**1.167**	**1.019,1.336**
High risk	**30(30%)**	**5(5%)**				

The above table shows that there were 65(65%) with normal VLDL low risk, 30(30%) high VLDL low risk and 5(5%) high VLDL high risk. The odds of VLDL being risk factor is 1.167 times more.

Association between CVD Risk Score and BP systolic

BP Systolic	Low risk	High risk	χ^2value	P value	Odd's ratio	95% CI
Low risk	**37(37%)**	**9(9%)**	**7.910**	**0.005***	**3.544**	**1.436, 8.750**
High risk	**29(29%)**	**25(25%)**				

The above table shows that 37(37%) have normal BP low risk, 9(9%) normal BP high risk, 29(29%) with high BP low risk, 25(25%) with high Bp high risk. The odds of Systolic BP being risk factorare3.544 times more.

Association between CVD Risk Score and BP Diastolic

BP diastolic	Low risk	High risk	χ^2value	P value	Odd's ratio	95% CI
Low risk	58(58%)	14(14%)	24.27	<0.001**	10.357	3.78,28.33
High risk	8(8%)	20(20%)				

The above table shows that 58(58%) have normal Bp with low risk and 14(14%) have normal BP with high risk, 8(8%) have high Bp with low risk and 20(2%)have high Bp with high risk. The odds of BP being risk factor are 10.3557 more which is statistically significant at 1% level of significance.

Association between CVD Risk Score and Metabolic Syndrome

Metabolic Syndrome	Low risk	High risk	χ^2value	P value	Odd's ratio	95% CI
Non metabolic	62(62%)	24(24%)	10.163	<0.001**	6.458	1.847,22.578
metabolic	4(4%)	10(10%)				

The above table shows that there were 62(62%) with non metabolic syndrome and low risk, 24(24%)

with non metabolic syndrome high risk and 4(4%) with metabolic syndrome lowrisk, 10(10%) with metabolic syndrome high risk. The odds of metabolic syndrome being riskfactorare6.458 times more which is statistically significantat1% level of significance

Association between CVD Risk Score and Smoking

Smoking	Low risk	High risk	χ^2value	P value	Odd's ratio	95% CI
Low risk	60(60%)	26(26%)	3.885	0.049*	3.007	0.970,9.759
High risk	6(6%)	8(8%)				

The above table shows that there were 60(60%) non smokers with low risk and 26(26%) nonsmokers with high risk and 6(6%) smokers with low risk and 8(8%) smokers with high risk. The odds of smoking being risk factor are 3.007 times more which is statistically significant at 5% level of significance.

Association between CVD Risk Score and Alcohol

Alcohol	Low risk	High risk	χ^2value	P value	Odd's ratio	95% CI
Low risk	47(47%)	18(18%)	3.293	0.070	2.199	0.932,5.190
High risk	19(19%)	16(16%)				

The above table shows that there were 47(47%) non alcoholics with low risk and 18(18%) with high risk and 19(19%) alcoholics with low risk and 16(16%) with high risk. The odds of alcohol being risk factor are 2.199 times more.

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